
Celebrating the Joy of Science
San Francisco
2
Friday, March 11
NSTA National Science Teachers Association
2011 National Conference on Science Education

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NSTA Membership

Become the Best Teacher You Can Be

Members enjoy the best teaching resources, plus online and face-to-face professional development to build skills and improve performance.

- Award winning journals, grade-specific and filled with teaching strategies.
- National and regional conferences for the best face-to-face, hands-on learning across the nation—institutes, symposia, workshops, and presentations.
- Online Learning Center, interactive and topical, to build content knowledge and teaching skills.
- E-newsletters and listservs—stay informed and current, daily, weekly and monthly.
- Web seminars and short courses to build your science knowledge.
- NSTA books just for science educators—topical, strategic, and pedagogical.
- Get connected with NSTA Communities—a unique networking platform developed just for science educators. Create your profile today and meet colleagues, friends and professional contacts that share your passion.

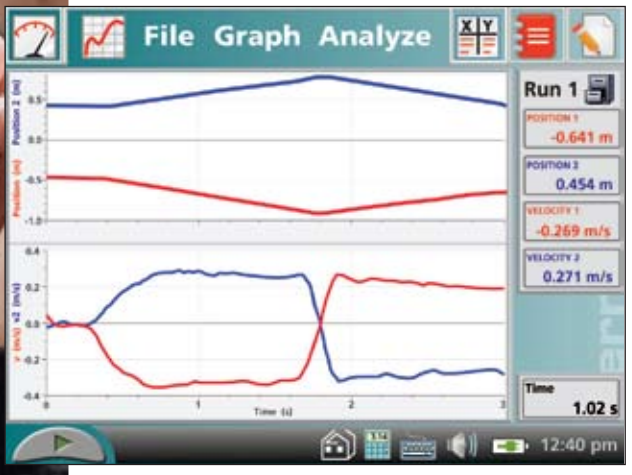
For more information or to become a member, visit *www.nsta.org/membership* or call 1.800.722.6782

NSTA National Science Teachers Association

Remember the first time you fell in love with science?

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

Stop by our **booth 1518**, or attend one of our FREE hands-on workshops. Enter the drawing to win a FREE Vernier LabQuest.



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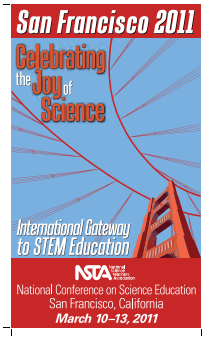

NSTA 59th National Conference on Science Education

San Francisco, California • March 10–13, 2011

Volume 2 Friday, March 11

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

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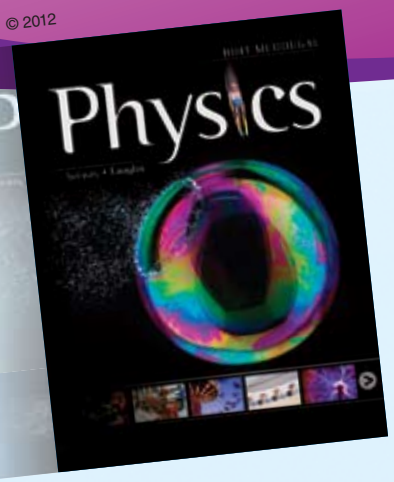
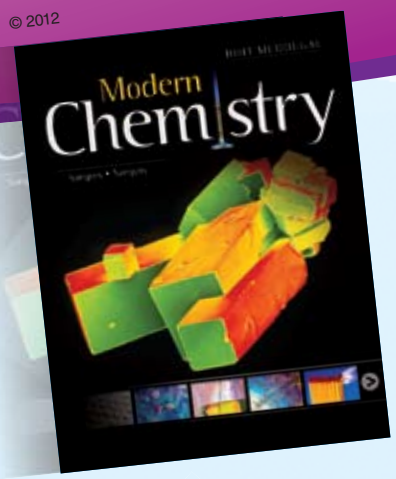
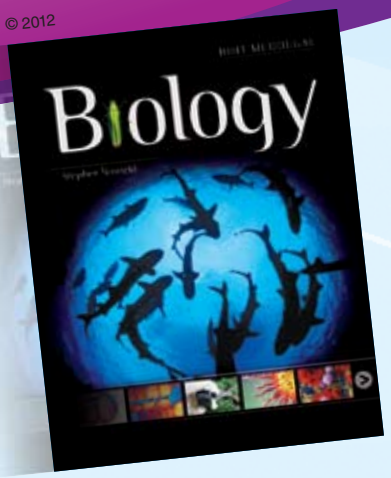
New and Better than Ever







9-12

K-8

360° of Inquiry

New Energy for Science!

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.

hmheducation.com

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—Photo courtesy of NASA

Mars Terrain Globe, Field Trip (T-2)

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.

Friday, March 11

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

Friday, March 11

8:00–9:00 AM
Online Interactives in the Science Classroom

8:00 AM–12:30 PM
Short Course: Exploring Birds and Citizen Science at the California Academy of Sciences (By Ticket: SC-12)

8:00 AM–5:00 PM
Field Trip: The Center for Probing the Nanoscale, Stanford Linear Accelerator Center (SLAC), and the Stanford University Campus (By Ticket: F-2)

9:30–10:30 AM
Fun, Free, and Easy: Great Free Web 2.0 and Open-Source Resources

11:00 AM–12 Noon
Bringing Together STEM, Language Arts, and Global Awareness

12:30–1:30 PM
Learning on the Holodeck: Theaters Without Audiences

2:00–3:00 PM
Engaging Your Grades 3–8 Students in the Digital Age with a Great Teaching Strategy and a Digital Suitcase

3:30–4:30 PM
Science Teaching in Second Life

5:00–5:30 PM
Using Real-Time Communication Technology to Connect Students with Real Science from the Polar Regions

Exploring Earth, Wind, and Fire

Friday, March 11

8:00–9:00 AM
I Feel the Earth Move Under My Feet!

8:00 AM–3:00 PM
Short Course: NOAA Ship *Okeanos Explorer*: Why Do We Explore?…and How Do We Explore? (By Ticket: SC-13)

8:00 AM–5:00 PM
Field Trip: How Geologic Events Shape Our Lives (By Ticket: F-1)

9:15 AM–4:15 PM
Field Trip: Berkeley's Bounty: The Edible Schoolyard and the Center for Ecoliteracy in the David Brower Center (By Ticket: F-6)

9:30–10:30 AM
Visualizing the Unviewable: Simple Models to Activate Your Earthquake Instruction

11:00 AM–12 Noon
Making the Water Cycle Real: A Journey from the School Yard to the Ocean

12:30–1:30 PM
Featured Presentation: Bridging Scientific Research and Education Through Research Learning Centers (Speaker: Susan Teel)

Under Pressure!

2:00–3:00 PM
Beyond Mere Attraction: Measuring Magnetism

3:30–4:30 PM
Photosynthesis Strategies: The Foundation for Ecological Food Webs

5:00–6:00 PM
Meteorites CSI: The Sky Has Fallen…Now What?

Accessing Language Through Science and Mathematics Content

Friday, March 11

8:00–9:00 AM
Dissecting Word Problems

9:00 AM–2:45 PM
Field Trip: Lawrence Hall of Science (By Ticket: F-4)

9:00 AM–4:05 PM
Field Trip: Hands On at Its Finest: The Tech Museum and Resource Area for Teachers (RAFT) (By Ticket: F-5)

9:30–10:30 AM
Applying Algebra to Pendulums: Language Acquisition Using Manipulatives

11:00 AM–12 Noon
Developing a Community of Young Scientists

1:00–4:00 PM
Short Course: Science Notebooking and Academic Language Development for Upper Elementary Students (By Ticket: SC-14)

2:00–3:00 PM
Science Notebooking for the Early Grades

3:30–4:30 PM
Using Math and Science Notebooks to Improve Literacy Skills and Scientific Discourse

4:15–9:45 PM
Field Trip: Educator's Evening Under the Stars at Chabot Space & Science Center (By Ticket: F-8)

5:00–6:00 PM
Developing a Framework for Formatively Assessing Student Notebooks

Building Scientific Minds: Inspiring Teaching and Effective Learning

Friday, March 11

8:00–9:00 AM
Inquiry with Young Scientists: Helping Children to Investigate Their World

8:00 AM–12 Noon
Short Course: Physics on the Subway (By Ticket: SC-11)

8:30–9:30 AM
Featured Presentation: Effective Teaching for Effective Learning (Speaker: Lawrence Lowery)

8:30 AM–12:30 PM
Field Trip: Dynamic Nature: The Ebb and Flow of the Bay Area Watershed and Creating Opportunity for Local Community Involvement (By Ticket: F-3)

9:30–10:30 AM
Creating a Community of Science Learners

11:00 AM–12 Noon
Creating Scientific Drawings and Recordings with Kindergartners

12:30–1:30 PM
Let Loose! Lecture-free Teaching in the Middle School Classroom

12:30–4:30 PM
Field Trip: Dynamic Nature: The Ebb and Flow of the Bay Area Watershed and Creating Opportunity for Local Community Involvement (By Ticket: F-7)

2:00–3:00 PM
Simple Machines Made Simple!

3:30–4:30 PM
Get Moving Redux! More Kinesthetic Tools for Excellence in Science

5:00–6:00 PM
Helping Students Develop Scientific Explanations Based on Empirical Evidence and Scientific Reasoning

Enjoy a Wealth of FREE PD Resources to Build Content Knowledge Through The NSTA Learning Center

- "Science Objects" (inquiry-based, content study sessions)
- Over 120 interactive live web seminars
- Over 600 award winning journal articles
- Over 100 book chapters
- Monthly special offers
- Searchable by subject, grade level, and state standards

Register for a free Learning Center account at *http://learningcenter.nsta.org*.

Informal Science Day

Friday, March 11, 7:00 AM–5:00 PM
Yerba Buena Salon 9, Marriott

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

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

Friday, March 11

7:00–8:00 AM	A Broad Spectrum for Science Learning Breakfast (Tickets Required: M-3) *Are Trees Alive? Roles for Experts and Novices in Informal Science Education* Gretchen Walker, Lawrence Hall of Science, University of California, Berkeley
9:00–10:00 AM	Breakout Sessions
10:00 –11:00 AM	Breakout Sessions
11:00 AM–12 Noon	Breakout Sessions
12:30–1:30 PM	Edu-tainment General Session featuring Banana Slug String Band
2:00–5:00 PM	Informal Science Education Share-a-Thon

NSTA is grateful to DuPont Office of Education for sponsoring Informal Science Day.

Teacher Researcher Day

Friday, March 11, 8:30 AM–5:00 PM
Yerba Buena Salon 8, Marriott

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

An agenda follows. *Teacher Researcher Day events are described throughout the Friday daily program.*

Friday, March 11

8:30–9:30 AM	Poster Session
9:30–11:00 AM	Presentation: *Exploring Teacher Inquiry and Teacher Research—Conversations for Teachers and Teacher Inquiry Group Leaders*
11:00 AM–12 Noon	Concurrent Sessions
12 Noon–12:30 PM	Science Inquiry Group Network
12:30–1:30 PM	Concurrent Sessions
1:30–2:30 PM	Informal Conversations About Teacher Research
2:00–3:00 PM	Concurrent Sessions
3:00–3:30 PM	Informal Conversations About Teacher Research
3:30–4:30 PM	Concurrent Sessions
4:30–5:00 PM	Presentation: *Fostering Teacher Researcher Collaborations*

NSTA Press Sessions

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

Friday, March 11

8:00–9:00 AM

This Is Not a Tech-Talk: A Discussion on 21st-Century Science Education

9:30–10:30 AM

SAFER Science: Laboratory Hazards You Must Deal With!

Developing Formative Assessment Probes Based on Learning Research

11:00 AM–12 Noon

SAFETY and LIABILITY: Is the Jury Out on Your Class?

Teaching for Conceptual Change

Picture-Perfect Science, K–4

12:30–1:30 PM

Blick on Flicks: Popular Media in the Classroom

Explicitly Teaching Students How to Take Collective Action During a Whole-Class Inquiry

2:00–3:00 PM

Spotlighting Books Co-Published by NSTA and NSELA and How to Use Them to Build Stronger Science Programs, K–16

Picture-Perfect Science, Grades 3–6

Uncovering Student Ideas in Physical Science: Electricity and Magnetism

3:30–4:30 PM

Uncovering Student Ideas in Life Science

3:30–5:00 PM

A Framework and Tools to Make Tough Science Topics Approachable for Grades 3–5

5:00–6:00 PM

Using Notebooks with Earth Science Success!

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.

Friday, March 11

8:00–9:00 AM

Siemens We Can Change the World Challenge: 21st-Century Tools for Project-Based Learning

9:30–10:00 AM

NSTA Teacher and Principal Awards and Recognitions

11:00 AM–12 Noon

Online Professional Development: Research on Teacher Perceptions, Learning Preferences, and Learning Outcomes for Self-directed NSTA Web Courses

12:30–1:30 PM

The Shell Science Teaching Award—Learn More, Be Successful

2:00–3:00 PM

Using the Online Quiz Manager Tool

3:30–4:30 PM

The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators

Project-Based Learning Through Disney's Planet Challenge

spark science™

***Discovery-Based* 21st Century Science Learning Environment**

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FREE - Hands-On Workshops

Friday, March 11 - Room 132

8:00-9:30 - Tough Topics in Earth Science: Plate Tectonics with My World GIS
10:00-11:30 - Measuring Reaction Time to a Visual Stimulus (Guided Inquiry Lab)
12:00-1:30 - Tough Topics in Physics & Physical Science: Motion
2:00-3:30 - Voltaic Cells (Guided Inquiry Lab)
4:00-530 - Middle School Physical Science: Learning key concepts through hands-on, probeware-based activities - Featuring Sally Ride Science™

Friday, March 11 - Room 133

8:00-9:30 - Classroom Weather Station with PASCO probeware (K-5 Science)
10:00-11:30 - AP Chemistry: Determination of the Rate of Reaction and its Order
12:00-1:30 - Tough Topics in Earth Science: Greenhouse Gases
2:00-3:30 - Middle School Earth Science: Learning key concepts through hands-on, probeware-based activities - Featuring Sally Ride Science™
4:00-530 - Renewable Energy Exploration: Solar and Wind Power

Saturday, March 12 - Room 132

8:00-9:30 - Investigating Mitochondrial Genetics
10:00-11:30 - Rise above the storm: Introducing STEM in High School

Saturday, March 12 - Room 133

8:00-9:30 - Middle School Physical Science: Learning key concepts through hands-on, probeware-based activities - Featuring Sally Ride Science™
10:00-11:30 - Rise above the storm: Introducing STEM in Middle School

9th Annual evening of

"Just Physics"

Come for the food, fun, Physics, and Free T-shirt!

Friday, March 11
5:00 - 6:30 pm
Meeting Room 102

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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 *Carolina's Perfect Solution*® 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 *Fast Plants*®
11:30 AM–1:00 PM	Room 121	H	Comparative Mammalian Organ Dissection with *Carolina's Perfect Solution*® 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® *Ocean Sciences Sequence for Grades 3–5*
3:30 PM–5:00 PM	Room 120	H	Amplify Your Genetics Teaching Skills with Carolina's New *Inquiries in Science*® Biology Series
3:30 PM–5:00 PM	Room 121	M, H	Take the Leap: *Carolina's Perfect Solution*® 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 *Carolina's Perfect Solution*® 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 *C. elegans*: Mutations and RNA Interface
10:00 AM–11:30 AM	Room 121	H	Innovative and Engaging Chemistry Labs with Real-World Connections: Discover the *Inquiries in Science*® 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 *Drosophila*
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 *Inquiries in Science*® 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 *Carolina's Perfect Solution*® 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

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 *Carolina's Perfect Solution*® 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 *Fast Plants*®
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 *Carolina's Perfect Solution*® 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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—*Lewis Sommer, San Francisco Convention &Visitors Bureau*

The Golden Gate Bridge in San Francisco is one of the world's most famous and beautiful bridges.

7:00–8:00 AM A Broad Spectrum for Science Learning Breakfast (Informal Science Day)

Are Trees Alive? Roles for Experts and Novices in Informal Science Education (M-3)

(Tickets Required: $15) *Yerba Buena Salon 9, Marriott*

Gretchen Walker, Director of Community and Visitor Programs, Lawrence Hall of Science, University of California, Berkeley

One of the biggest perceived challenges facing the expansion of informal science learning opportunities into more settings is the lack of science teaching expertise in those working with youth. What could we achieve if we moved beyond a deficit model and built instructional strategies that leveraged youth development expertise? What if we designed learning experiences meant to complement, rather than be the equivalent of classroom and museum science learning?

Gretchen Walker is currently the director of Community and Visitor Programs at the Lawrence Hall of Science at the University of California, Berkeley. In 2005, she completed a two-year project examining the feasibility of adapting NASA curriculum materials for use in community-based after-school programs, which has become the basis for current efforts by The After-School Corporation to incorporate science in after-school programs in New York City.

Her interest in science and specifically astronomy began at the age eight when she "changed the color of the sky" after a planetarium show. After working at Griffith Observatory, she became a high school teacher and later was part of curriculum development for the NASA mission Deep Impact. She also was recruited by the American Museum of Natural History to work on its Einstein exhibition.

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

7:00–8:15 AM Meeting

Development Advisory Board Meeting

(By Invitation Only) *Executive Boardroom, Hilton*

Science Area

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

The science areas and their abbreviations are:

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

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

7:00–8:30 AM Breakfast

Dorothy K. Culbert Chapters and Associated Groups Breakfast (M-4)

(Tickets Required: $50) *Yosemite B, Hilton*

This event is a great way for NSTA Chapters and Associated Groups leaders to kick off their conference experience.

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

7:00–8:30 AM High School Breakfast

The Forgotten Champion in Urban Schools: The Science Research Student! (M-5)

(Tickets Required: $50) *Yerba Buena Salon 14, Marriott*

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

Come discover how to create and develop the unsung hero of the urban high school setting: the junior scientist! Join in a discussion on how to build science research teams from the ground up and stimulate existing experiences, leading to success in local, state, and national competitions.

A graduate of the magnet program at Franklin Learning Center High School in Philadelphia, Tamica Stubbs has excelled academically and as a teacher. An E.E. Waddell High School biology and research instructor, she embraces a hands-on/minds-on, modular teaching approach in her classroom and is a strong proponent of science education for traditionally underserved student populations. Prior to her position at Waddell, she was a general science educator at Wilson Middle School in Charlotte, N.C.

Stubbs earned a bachelor's degree and master's degree in science education from Clarion University of Pennsylvania in 1997 and 1998, respectively. Her future goal is to become a research scientist or professor of science education.

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

7:00–8:30 AM Exhibitor Workshop

Next Steps for Science: Science Supervisor Breakfast and Forum (Gen)

(Supervision/Administration) *122, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Looking to transform science in your district? Join a panel of science supervisors to discuss their move from good to great. Topics include aligning teachers and leadership, supporting science materials, and reforming professional development. Share your thoughts as you learn from other supervisors. Invitations available at the Carolina Biological booth.

7:00–9:00 AM Meeting

NMLSTA Board Meeting (Part 1)

(For NMLSTA Members Only) *Union Square 9, Hilton*

7:00–9:00 AM Breakfasts

AMSE Alice J. Moses Breakfast

(By Invitation Only) *Club Room, Marriott*

APAST Breakfast

(By Invitation Only) *Golden Gate Salon C3, Marriott*

7:30–9:30 AM Breakfast

Association of Science Materials Centers' Networking Forum

(By Preregistration Only) *Continental 8, Hilton*

Join ASMC for breakfast and engaging dialogue. Bring your best practices and experiences to share and take away inspiration, ideas, and encouragement! $20 preregistration required via *www.kitsupport.org.*

8:00–8:30 AM Presentation

SESSION 1

FT-NMR Across the Undergraduate Chemistry Curriculum (Chem)

(College) *Yosemite A, Hilton*

Daniel J. Stanford *(dstanfor@harpercollege.edu)* and **Julie Ellefson** *(jellefso@harpercollege.edu),* Harper College, Palatine, Ill.

We have implemented NMR experiments in several chemistry courses. We are now studying the impact on student attitudes as well as students' ability to use the instrument and interpret spectra.

Friday, March 11

	General Sessions/Special Events	General Sessions/Special Events	Shell Seminars	Shell Seminars
8:00 AM				
9:00 AM		**Featured Presentation** 8:30–9:30 AM 103, Moscone Speaker: Lawrence Lowery		
10:00 AM				
11:00 AM			**Shell Science Seminar:** 10:30 AM–12 Noon 104, Moscone Speaker: Eugenie C. Scott	**Shell Science Seminar** 10:30 AM–12 Noon 102, Moscone Speaker: Richard A. Duschl
12 Noon				
1:00 PM	**Robert H. Carleton Lecture** 12:30–1:30 PM 104, Moscone Speaker: Arthur Eisenkraft	**Featured Presentation** 12:30–1:30 PM 103, Moscone Speaker: Susan Teel		
2:00 PM	**AGU Lecture** 2:00–3:00 PM 104, Moscone Speaker: J. Todd Hoeksema	**Featured Panel** 2:00–3:30 PM 103, Moscone Panelists: Carlos Garcia, William M. Habermehl, Kevin Harrigan, Steve Stavis *Improving STEM Teaching and Education: A Superintendents' Symposium*	**Shell Science Seminar:** 1:30–3:00 PM 102, Moscone Speaker: Celeste H. Pea	
3:00 PM				
4:00 PM			**Shell Science Seminar:** 3:30–5:00 PM 104, Moscone Speaker: Kenneth Wesson	
5:00 PM				
6:00 PM				
7:00 PM	**NSTA Teacher Awards Gala** 6:00–8:30 PM Yerba Buena 7, Marriott Tickets Required (M-8)	**Special Evening Session** 6:00 PM–12 Midnight Yosemite A, Hilton Union Square *A Video Showcase of Inspiring Award-winning Teachers, Part 2*		
8:00 PM				

8:00–8:30 AM Exhibitor Workshop

A "Space-tial" Perspective of Earth (Earth)
(Grades 6–12) *310, Moscone Center*
Sponsor: NASA Education
Bonnie Murray *(bmurray@vasc.org)*, NASA Langley Research Center, Hampton, Va.
Study Earth through astronaut photography and satellite imagery. Using the Magic Planet, Blue Marble, EarthKAM, and Landsat imagery, participants will gain a perspective of why it is important to study Earth from space.

8:00–9:00 AM Presentations

SESSION 1
Building Teacher Leadership Through a Science and Literacy Project (Gen)
(Elementary–Middle Level) *Continental 2, Hilton*
Bill Badders *(baddersw@cmsdnet.net),* Cleveland (Ohio) Metropolitan School District
The Cleveland Metropolitan School District, with funding from the National Science Foundation, has developed a teacher leadership project that uses middle grades science teachers to model, coach, and mentor elementary teachers in the implementation of a science and literacy project. Come hear how the project was designed and the impact on teacher leaders, teachers, and students.

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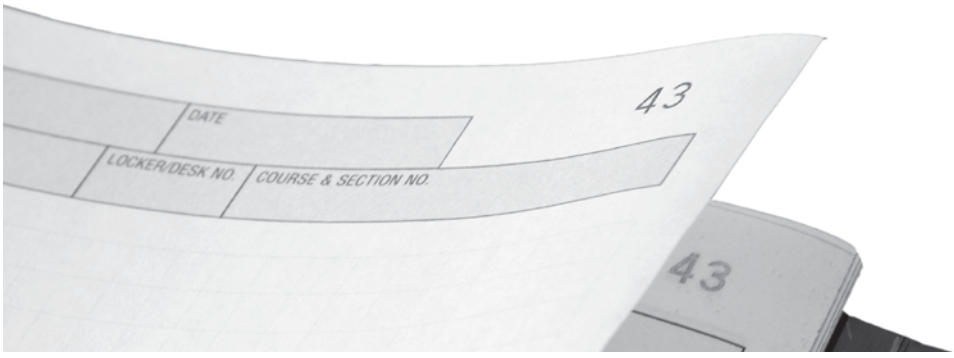

www.LabNotebooks.net

SESSION 2

Building a Bridge: Engineering with ELLs (Gen)
(Supervision/Administration) Continental 3, Hilton
Leonisa Ardizzone *(ardizzone@salvadori.org),* Salvadori Center, New York, N.Y.
Bridge building is often used to enhance STEM learning. Working with SIFE schools (Students with Interrupted Formal Education), our Bridge project helped ELLs improve language skills.

SESSION 3

Becoming Bird Brainiacs (Bio)
(Elementary) Golden Gate 2, Hilton
Virginia Frissell *(virginia.frissell@sdhc.k12.fl.us)* and **Patricia Cayton,** Twin Lakes Elementary School, Tampa, Fla.
Become a bird brainiac! Use your senses and make observations to identify, classify, and inquire about the birds in a simulated school yard walk. Learn how to increase student engagement using scientific process skills and literacy development.

SESSION 4

SOS: Solidify Our Science (Earth)
(Elementary–Middle Level) Golden Gate 5, Hilton
Carrie Dennis, Spring Shadows Elementary School, Houston, Tex.
Teachers need know-how, fun materials, and space to inspire students. These elementary and middle school teachers will share tips and trade secrets and 75 years' experience.

SESSION 5

Putting Words into Action: Integrating Literacy Lessons in Early Elementary STEM Learning (Phys)
(Elementary) Golden Gate 7, Hilton
Kristin Sargianis *(ksargianis@mos.org)* and **Sharlene Yang** *(syang@mos.org),* Museum of Science, Boston, Mass.
Teaching literacy skills to K–2 ELL students through science and engineering design challenges provides a context for learning and puts words into action.

SESSION 6

NSTA Press Session: This Is Not a Tech-Talk: A Discussion on 21st-Century Science Education (Gen)
(General) Golden Gate 8, Hilton
Joan A. Gallagher-Bolos *(katiramom@gmail.com),* Glenbrook North High School, Northbrook, Ill.
Dennis W. Smithenry *(dsmithenry@gmail.com),* Elmhurst College, Elmhurst, Ill.
Reflect on your teaching. What beliefs do you have? How can 21st-century tools enhance what you're already doing well? Let's redefine lectures, discussions, and collaboration.

SESSION 7

ASTE Session: Link Middle and High School Students to Ecology with Digital Media About Published Scientific Research (Env)
(Middle Level–High School) Union Square 1/2, Hilton
Yael Wyner *(ywyner@ccny.cuny.edu),* City University of New York, N.Y.
Janice Koch *(janice.koch@hofstra.edu),* Professor Emerita, Hofstra University, Fulton, Md.
This workshop links daily life to ecology and environmental issues through the use of media and published scientific data. Take home a DVD.

SESSION 8

The Reflective Assessment Technique: Fifteen Minutes to Improved Instruction (Gen)
(Elementary–Middle Level) Union Square 3/4, Hilton
Cathleen Kennedy *(cathy@kacgroup.com),* Educational Consultant, San Carlos, Calif.
Kathy Long *(klong@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Arthur H. Camins *(arthurcamins@gmail.com),* Jefferson County Public Schools, Louisville, Ky.
Learn a quick assessment technique that pinpoints what students need to learn next—without giving a quiz. See how it improved student performance and teacher practice in a national study.

SESSION 9

Engineering Is…Developing Competent, Confident, Comfortable STEM Teachers (Gen)
(Elementary–Middle Level/College) Union Square 14, Hilton
Yvonne S. Ng *(ysng@stkate.edu)* and **Lori R. Maxfield** *(lrmaxfield@stkate.edu),* St. Catherine University, St. Paul, Minn.
Learn five lessons engineering offers teachers to motivate students in rigorous science, mathematics, literacy, and social studies curricula. These lessons can serve as guidelines for engineering-focused professional development for teachers.

PERFORMANCE MATTERS

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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 Teachers Association

SESSION 10 (three presentations)
(High School–College) *Union Square 17/18, Hilton*
SCST Session: Transforming Laboratory Experiments Using Sensor Technology (Gen)
Chuck Winrich, Shari Laprise *(slaprise@babson.edu),* and **Vikki L. Rogers,** Babson College, Babson Park, Mass.
Join us as we share the redesign of our laboratory experiments using automated data collection systems and sensors. We'll discuss the benefits, problems, and solutions we encountered.

SCST Session: Science Outcomes Assessment Project (Gen)
Zodiac T. Webster *(webster_zodiac@colstate.edu),* Columbus State University, Columbus, Ga.
Examine research that looked into links between science success and cognitive, affective, and demographic factors among introductory biology, chemistry, and geology students.

SCST Session: Using Public Databases to Enhance Learning of Molecular Biology and Genetics (Bio)
Kelly K. McDonald *(mcdonald@csus.edu)* and **Joseph Gomes,** California State University, Sacramento
Learn about the "Genes and Disease" project, in which students used web-based resources to research and communicate the molecular and genetic basis of a single gene disorder.

SESSION 11
NSELA Session: Tools and Ideas for Leaders (Gen)
(General) *Union Square 21, Hilton*
Janey Kaufmann *(janeykaufmann@msn.com),* NSELA President, Scottsdale, Ariz.
Susan B. Koba *(skoba@cox.net),* Science Education Consultant, Omaha, Neb.
Brenda Wojnowski *(bwojnowski@gmail.com),* University of North Texas, Dallas
Meet with National Science Education Leadership Association leaders as we trade tips, tools, and tactics that support science leaders' work—build your resource bank!

SESSION 12
How Do Airplanes Fly…Really? (Phys)
(High School–College) *Union Square 22, Hilton*
David L. Esker *(david_esker@ymail.com),* Pikes Peak Community College, Colorado Springs, Colo.
Forget the bogus story about equal transit times for air flowing around a wing. Get the correct derivation and explanation of how airplanes really fly.

SESSION 13
NARST Session: Public Physics Web Lectures as an Instructional Resource (Phys)
(High School/Informal Education) *Union Square 25, Hilton*
Shulamit Kapon *(shulamit.kapon@berkeley.edu),* University of California, Berkeley
Bat-Sheva Eylon and **Uri Ganiel,** Weizmann Institute of Science, Rehovot, Israel
Trace changes in students' knowledge using public physics web lectures.

SESSION 14
Problem Based Learning: The Case of the Coughing Construction Worker (Gen)
(Middle Level–High School) *Golden Gate Salon B, Marriott*
Joel Gluck *(jgluc1@aol.com)* and **John Santangelo** *(jsantangelo13@verizon.net),* NEL/CPS Construction Career Academy, Cranston, R.I.
Inspire your students to become effective active learners with anatomy, physiology, biology, and mathematics. Free curriculum.

SESSION 15
SYM-2 Follow-Up Session: Climate Change Research: What We Have Learned Over the Past 20 Years (Env)
(General) CANCELED *Golden Gate Salon C2, Marriott*
Carlos Rodriguez-Franco *(crodriguezfranco@fs.fed.us),* USDA Forest Service, Arlington, Va.
Discover what Forest Service researchers have learned about climate change impacts and what adaptations are needed to increase the resilience and potential of our forests to mitigate the effects of greenhouse gases.

SESSION 16
Web 2.0 Earth System Resources for Secondary Students: Integrating NASA eClips™ and Space Math@NASA (Earth)
(Middle Level–High School/Informal Ed) *Pacific B, Marriott*
Sharon Bowers *(sharon.bowers@nianet.org),* Virginia Beach (Va.) City Public Schools
Sten Odenwald *(sten.f.odenwald@nasa.gov),* NASA Goddard Space Flight Center, Greenbelt, Md.
"Power-up" your lessons using NASA eClips videos paired with Space Math@NASA to engage NetGen students and build relevance to their Earth system studies.

SESSION 17

Macromolecules and Biogeochemical Cycles... FUN! (Bio)

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

Donna M. Hertel *(dhertel@portageps.org)* and **Daniall Poulsen** *(dpoulsen@portageps.org),* Portage Northern High School, Portage, Mich.

Energize lessons for biogeochemical cycles with these labs, demos, and activities. Topics include biomass, productivity, biogeochemical cycles, biofuels, global climate change, cellular energetics, and more.

SESSION 18

NOAA's Data Education Project: Integrating Data to Support Increased Understanding About Ocean and Coastal Systems (Gen)

(Informal Education) *Willow, Marriott*

Atziri O. Ibanez, NOAA National Estuarine Research Reserve System, Silver Spring, Md.

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

Learn how to access four new modules that use NOAA's observing system data to help you teach about water quality, sea level, El Niño, and ocean acidification.

SESSION 19

PDI **ELL Pathway Session: Science Notebooks for English Language Learners (Gen)**

(General) *Yerba Buena Salon 10, Marriott*

Lori A. Fulton *(fultola@interact.ccsd.net),* **Wendy Roselinsky** *(roselinsky@interact.ccsd.net),* **Amy Bentel,** and **Christina Guasto** *(mcguasto@yahoo.com),* Jay Jeffers Elementary School, Las Vegas, Nev.

Explore the development and use of science notebooks with elementary students who are English language learners. Strategies and ideas will be shared through examples and vignettes of the developmental process and use of science notebooks within a Title I school with many LEP and ELL students.

SESSION 20

Affective Elements of a Science Learning Questionnaire (Chem)

(General) *Yerba Buena Salon 15, Marriott*

Kiesha J. Williams, Florida State University, Tallahassee

This questionnaire was used to measure students' attitude toward science.

SESSION 21

NSTA **NSTA Avenue Session: Siemens We Can Change the World Challenge: 21st-Century Tools for Project-Based Learning (Env)**

(General) *113, Moscone Center*

Lance Rougeux, Discovery Education, Silver Spring, Md.

Project-Based Learning (PBL) enables students to explore and develop solutions to real-world problems and challenges. Empower your students to make a difference in their schools, communities, and around the world through Siemens We Can Change the World Challenge *(www.wecanchange.com),* the premier national K–12 student sustainability competition. In this session we'll highlight a dozen free tools—from glogs to wikis to Google Earth—to help you and your class make an impact. You'll walk away with new resources and giveaways for your classroom.

SESSION 22

Inquiry Assessment: We Don't Need No Stinkin' Assessments! (Gen)

(General) *200, Moscone Center*

Michael B. Deiter, Columbia (Pa.) Borough School District

Susan F. Deiter *(sue_deiter@iu13.org),* Lancaster-Lebanon Intermediate Unit 13, Lancaster, Pa.

Presider: Michael B. Deiter

These questioning and probing techniques foster students' problem solving using inquiry kits, leading to the use of trifold performance assessments.

SESSION 23 (two presentations)

(General) *208/210, Moscone Center*

U.S.-Russia Teacher Professional Development (US-RTPD): Fostering Teacher Leaders (Gen)

Wendy M. Frazier *(wfrazier@gmu.edu),* George Mason University, Fairfax, Va.

We'll share highlights and experiences from an international professional development program designed to further teachers' educational practices, leadership, and intercultural understanding of the U.S. and Russia.

Science Resource Hunt in the U.S. by an Australian Churchill Fellow (Gen)

Nicolette A. Hilton *(nhilton@une.edu.au),* Australian Churchill Trust, Armidale, New South Wales, Australia

An Australian Churchill Fellow will share her travel plans in the U.S. and the resources she hopes to collect.

SESSION 24

Dissecting Word Problems (Gen)

(Elementary–High School) *224/226, Moscone Center*

Wendy Ward Hoffer *(wwhoffer@pebc.org),* Public Education & Business Coalition, Denver, Colo.

Make challenging math word problems accessible to all students, including English language learners, by supporting academic language and scaffolding the problem-solving process.

SESSION 25

Inquiry with Young Scientists: Helping Children to Investigate Their World (Gen)

(Preschool–Elementary) *228/230, Moscone Center*

Lauren Inouye *(lninouye@gmail.com)* and **Sarah Bess,** Hanahau'oli School, Honolulu, Hawaii

Experience how children in a multi-age setting use inquiry to learn about "their world."

SESSION 26

ISTE: Online Interactives in the Science Classroom (Gen)

(Supervision/Administration) *232/234, Moscone Center*

Will Kimbley, Yokomi Elementary School, Fresno, Calif.

Presider: Ben Smith *(ben@edtechinnovators.com),* ISTE/Red Lion (Pa.) Area School District

Move past static PowerPoint images and graphics to teach science. Bring your science concepts to life with free, online interactives and multimedia. You will learn how to use tools to bring excitement to your classroom.

SESSION 27

Using Probeware for Data Acquisition and Analysis (Gen)

(Middle Level–College) *250, Moscone Center*

Gordon L. Wells *(gordon.wells@ovu.edu)* and **Stephen Opoku-Duah** *(stephen.opoku-duah@ovu.edu),* Ohio Valley University, Vienna, W.Va.

Learn how to use probes connected to TI calculators and computers to collect and analyze data in biology, chemistry, physical science, physics, ecology, and anatomy and physiology.

SESSION 28

Have Your Students Reading Their Textbooks and Looking Forward to It! (Gen)

(Middle Level–High School) *252/254, Moscone Center*

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

Link your science content to improved literacy while you facilitate students' discovery of key learning points using this group-focused, inquiry-based "conference learning" activity.

SESSION 29

More Lessons from the Teen Parent Academy: Alternative School Strategies (Gen)

CANCELED

(Middle Level–High School/Informal) *258/260, Moscone Center*

Diane D. Walker *(dwalker@nmsu.edu),* New Mexico State University, Las Cruces

Young teenage parents and other students in alternative school settings need a science education that meets their diverse needs.

SESSION 30

Enhancing Scientific Literacy Through Humor in the Classroom (Gen)

(General) *262, Moscone Center*

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

Susan Clay *(suzieclay@aol.com),* Ashland University, Ashland, Ohio

The language of humor attracts attention and reinforces understanding of science concepts. We'll laugh with prefixes to puns to stuffed animals and student-created comics.

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NSTA National Science Teachers Association

8:00–9:00 AM Workshops

Reading, Writing, and Rings: Using Saturn to Teach Science and Language Arts (Earth)
(Elementary–Middle Level) *Continental 7, Hilton*
Rachel Zimmerman-Brachman *(rachel.zimmerman-brachman@jpl.nasa.gov),* NASA Jet Propulsion Laboratory, Pasadena, Calif.
Explore NASA's science and language arts curriculum that uses the Cassini mission to Saturn as inspiration for enhancing students' interest in reading, writing, and science.

Science Enrichment: The "Wow" Factor! (Gen)
(Elementary/Supervision) *Golden Gate 3, Hilton*
Susanna Livingston, School District of Palm Beach County, Boca Raton, Fla.
Help students discover important science concepts. Here are some engaging and fun ways to promote academic and cooperative learning.

Educating Students for a Sustainable World (Env)
(Middle Level) *Golden Gate 4, Hilton*
Pamela Wasserman *(pam@popconnect.org),* Population Connection, Washington, D.C.
Turn today's global challenges into thought-provoking lessons with hands-on activities that explore world population growth, natural resource use, climate change, and social justice.

Structured Exploration of the Outdoors (Env)
(Elementary) *Golden Gate 6, Hilton*
Joyce Hill *(science@lifelab.org),* Life Lab Science Program, Santa Cruz, Calif.
These activities are designed to engage students in authentic, guided exploration of any outdoor space—a garden, forest, beach, or city.

CESI Session: Inquiring Minds Want to Know (Gen)
(Elementary–Middle Level) *Union Square 5/6, Hilton*
Cheryl W. Sundberg, Retired Educator, Millbrook, Ala.
Jeanelle Day *(dayj@easternct.edu),* Eastern Connecticut State University, Willimantic
Explore engaging hands-on/minds-on K–8 activities related to solubility, material science, and energy standards.

Partners in Innovation: Museums and Schools Unite (Gen)
(General) *Union Square 15/16, Hilton*
Cristina C. Trecha *(ctrecha@rhfleet.org),* Reuben H. Fleet Science Center, San Diego, Calif.
Learn strategies for more fully integrating the worlds of formal and informal learning in museum and K–12 environments.

Interpreting Visual Representations in Science (Gen)
(Elementary–Middle Level) *Union Square 23/24, Hilton*
Megan Goss *(mgoss@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Visual representations of science processes contain invaluable information for students. Explore ways to support students in interpreting these images to enhance their conceptual understanding.

Polymer Potpourri (Chem)
(Middle Level–High School) *Golden Gate Salon A, Marriott*
Julie Yu *(jyu@exploratorium.edu),* Exploratorium, San Francisco, Calif.
Explore a variety of hands-on activities that teach the fundamentals of polymer chemistry. All materials are inexpensive and safe to use in the classroom.

NSpiring Data Collection (Phys)
(High School) *Nob Hill C, Marriott*
Jacklyn Bonneau *(bonneau@wpi.edu),* Massachusetts Academy of Math & Science, Worcester
Use the technology of math teachers in your own classroom to collect and analyze data in a richer way.

Building Your Learning Community with NASA's Education Specialists (Gen)
(General) *Nob Hill D, Marriott*
Richard S. Varner *(richard.s.varner@nasa.gov),* NASA Goddard Space Flight Center, Greenbelt, Md.
Lisa O. Brown *(lisa.r.brown@nasa.gov),* NASA Johnson Space Center, Houston, Tex.
John F. Weis *(john.f.weis@nasa.gov),* NASA Marshall Space Flight Center, Huntsville, Ala.
NASA's Aerospace Education Service Project has designed a learning community that will keep the fires ignited by your professional development burning throughout the year.

DuPont Presents—The Science of Food Safety (Bio)
(Middle Level–High School) *Pacific A, Marriott*
Gaetano N. Amoroso *(meats101@gmail.com),* W.B. Saul High School, Philadelphia, Pa.
Presider: Peggy Vavalla, DuPont, Wilmington, Del.
Explore food safety issues such as food-borne illness, salmonella poisoning, chemical additives and packaging to prevent microbial growth, slow oxidation of fresh fruit, and enhancing nutrient content.

Inquiry-based Activities to Accompany the 12 Principles of Plant Biology (Bio)
(Elementary–High School) *Pacific H, Marriott*
Jeffrey S. Coker *(jcoker@elon.edu),* Elon University, Elon, N.C.
Jane P. Ellis *(jellis@presby.edu),* Presbyterian College, Clinton, S.C.
Mary Williams *(mwilliams@aspb.org),* American Society of Plant Biologists, Rockville, Md.
These inexpensive, hands-on, inquiry-based activities use plants to teach biological concepts.

Polymers in Aviation (Chem)
(Middle Level–High School) *Pacific J, Marriott*
Edmund J. Escudero *(escudero_e@summitcds.org),* Summit Country Day School, Cincinnati, Ohio
Polymers, especially composites, are of critical importance in the design and manufacture of aircraft. Get an overview of composites used in aircraft and then perform a series of experiments on wing design using Young's Modules to measure the strength of the different composite designs.

Stellar Classification as Citizen Science (Earth)
(Informal Education) *Walnut, Marriott*
Christi J. Whitworth *(cwhitworth@pari.edu)* and **Michael Castelaz** *(mcastelaz@pari.edu),* Pisgah Astronomical Research Institute, Rosman, N.C.
Using Stellar Classification Online Public Exploration (SCOPE), everyone can be like Annie Jump Cannon. Provide the opportunity to be the first to classify a star.

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PDI **SEPUP Pathway Session: Using Simulations and Modeling in an Issues-based Science Classroom (Bio)**

(Middle Level–High School) *Yerba Buena Salon 4, Marriott*

Chris Keller *(chris_k@berkeley.edu)* and **Maia Willcox** *(mwillcox@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Examine a variety of models that illustrate important concepts in biology. Models will range from simple to high tech.

SEE (Solar Energy for Education) (Earth)

(Elementary–High School) *Yerba Buena Salon 11, Marriott*

Richard E. Pierce *(rpierce@isd2142.k12.mn.us),* Cook School, Cook, Minn.

Ellen M. Pierce *(epierce@isd2142.k12.mn.us),* Babbitt-Embarrass School, Babbitt, Minn.

These inexpensive solar panel activities are suitable for STEM and multi-aged science programs. Learn how to set up simple solar engineering competitions.

Applying the 3 Es: Explore, Engage, and Explain (Env)

(General) *Yerba Buena Salon 12/13, Marriott*

Judith Lucas-Odom *(judyps23@yahoo.com),* Chester-Upland School District, Aston, Pa.

Students actively explore the development of their watershed environment and explain their results using various forms of technology.

Clean Up or Pay Up! (Gen)

(High School) *111, Moscone Center*

Terri G. George *(terrigeorge1@gmail.com),* Henry County Schools, McDonough, Ga.

Nancy Adgate, Dutchtown High School, Hampton, Ga.

Presider: Marlee Tierce, Retired Educator, Hampton, Ga.

Clean Up or Pay Up is a high school integrated environmental studies pollution unit involving government, economics, math, Earth science, chemistry, ecology, and environmental science.

Bringing Universal Design for Learning (UDL) into Your Classroom (Gen)

(General) *112, Moscone Center*

Dawn A. Tamarkin *(tamarkin@stcc.edu),* Springfield Technical Community College, Springfield, Mass.

Learn how to incorporate this important pedagogical tool into your classes. UDL is an inclusive approach—more learners can learn when UDL is incorporated—that makes teachers more efficient and effective with their time and creativity.

Lasers, Craters, and Taters (Gen)

(General) *212, Moscone Center*

Christopher J. Thompson *(cthompson@rice.edu),* **Lisa Webber** *(lwebber@rice.edu),* and **Brandi Nicholson** *(bnicholson@rice.edu),* Rice University, Houston, Tex.

Have fun and gain a deeper understanding of physical, Earth, and life science concepts in these inquiry-based explorations focused on tough-to-teach concepts.

I Feel the Earth Move Under My Feet! (Earth)

(Elementary–Middle Level) *220/222, Moscone Center*

Reeda L. Hart *(hartr@nku.edu)* and **Thomas Brackman** *(brackmant1@nku.edu),* Northern Kentucky University, Highland Heights

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

Study plate tectonics in San Francisco! Join a geophysicist and a public school teacher of grades 3–8 as they showcase active hands-on lessons. Free resource CD.

8:00–9:00 AM Exhibitor Workshops

Enhance Student Understanding and Analysis of Real-World Data with the TI-Nspire™ Solution and Vernier Sensors and Probes (Gen)
(Grades 9–12) *110, Moscone Center*
Sponsor: Texas Instruments
Todd D. Morstein *(morsteint@sd5.k12.mt.us),* Glacier High School, Kalispell, Mont.
Learn how your students can take abstract concepts and make them come to life with the latest TI-Nspire solution through collaborative, conceptual exploration and real-world data collection.

Innovating Science: Chemistry Demonstrations That Really Get a Reaction! (Chem)
(Grades 7–12) *236/238, Moscone Center*
Sponsor: Fisher Science Education
Jim Bertsch, Aldon Corp., Avon, N.Y.
Learn how to incorporate exciting, engaging chemical demonstrations into your chemistry curriculum. These demonstrations are guaranteed to grab your students' attention and enhance their learning experience, all while teaching fundamental science concepts.

***Active Physics,* Newly Revised 3rd Edition (Phys)**
(Grades 9–12) *307, Moscone Center*
Sponsor: It's About Time
Arthur Eisenkraft, 2000–2001 NSTA President, and University of Massachusetts, Boston
Perform a series of guided inquiry activities that prepare students to do a voice-over of a sports video and explain the physics of the action appearing on the screen. Watch what happens to the quality of students' work when they take ownership of real-world scientific challenges that matter to them. Leave with a practical hands-on activity for your classroom. Attention will be paid to differentiated instructions to make physics accessible for those with higher math and reading levels, as well as those with difficulties in those areas.

SHARE YOUR KNOW-HOW

Submit a session proposal for an NSTA conference

2012 National Conference on Science Education
Proposal Deadline: April 15, 2011
Indianapolis, Indiana
March 29–April 1, 2012

www.nsta.org/conferences

NSTA National Science Teachers Association

8:00–9:15 AM Exhibitor Workshops

Put Some Spark into Science Investigations (Gen)
(Grades 2–7) *123, Moscone Center*
Sponsor: Delta Education/School Specialty Science
Johanna Strange, Consultant, Richmond, Ky.
Tom Graika, Consultant, Lemont, Ill.
Using the science topics of magnetism and electricity, learn how to turn guided investigations into challenging investigations and open inquiries. These strategies can help your students become independent thinkers and inquirers. Receive a complimentary resource packet and related Delta products.

Inquiry Investigations™ Biotechnology Activities with E-Gels® (Gen)
(Grades 7–12) *124, Moscone Center*
Sponsor: Frey Scientific/School Specialty Science
Lou Loftin, Consultant, Reno, Nev.
With our new Inquiry Investigations biotechnology series, students learn foundational analysis skills used in biotechnology. See how program software allows the preparation of web-based content, along with individualized assessment. Participants will compare both virtual and actual E-Gel electrophoretic separations.

8:00–9:20 AM Exhibitor Workshop

NASA Fit Explorer (Bio)
(Grades 3–5) *309, Moscone Center*
Sponsor: NASA Education
Jennifer Becerra *(jenniferbecerra@rocketmail.com),* NASA Johnson Space Center, Houston, Tex.
Learn how astronauts train in this scientific and physical approach to human health and fitness on Earth and in space. Teach your students to train like an astronaut.

8:00–9:30 AM Exhibitor Workshops

Introduction to Protozoa (Bio)
(Grades 9–12) *120, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Meet the dynamic trio of *Paramecium, Euglena, and Amoeba,* as well as lesser-known protozoa. Easy to maintain, protozoa are excellent for open-ended exploration by students.

Exploring Feline Anatomy with Carolina's Perfect Solution® Cats (Bio)
(Grades 9–College) *121, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Perform a guided dissection featuring Carolina's Perfect Solution cats and get the "inside story" on the highest-quality preserved specimens available. Learn vertebrate anatomy and morphology, discover the structures shared by cats and humans, and develop a greater appreciation for the complexity of life. Participants receive free dissection and safety equipment and a drawing will be held for free kits.

Teaching About the Rock Cycle and Earth Time (Earth)
(Grades 6–8) *125, Moscone Center*
Sponsor: LAB-AIDS, Inc.
Mark Koker, LAB-AIDS, Inc., Ronkonkoma, N.Y.
Do your middle level students have trouble with complex concepts like the rock cycle and geologic time? Come experience motivating hands-on techniques and strategies for learning about these and related topics, like plate tectonics and continental drift. Support for literacy and technology will be addressed.

Fisher Science Education

Visit us in Room 236/238, Friday and Saturday (see schedule below) Attend our dynamic hands-on workshops and learn about some amazing products!

Day/Date	Time	Title
Friday	8:00 a.m. – 9:00 a.m.	Innovating Science: Chemistry Demonstrations that Really Get a Reaction!
Friday	9:30 a.m. – 10:30 p.m.	Learn How to Develop a S.T.E.M. Challenge Competition using K'NEX
Friday	11:00 a.m. – 12:00 p.m.	Improving Standardized Test Scores with Engaging Learning Systems for Middle and High School Students
Friday	1:00 p.m. – 2:30 p.m.	Art vs. Science - The Role of Science in the Winemaking Process
Friday	3:30 p.m. – 5:00 p.m.	Art vs. Science - The Role of Science in the Winemaking Process
Saturday	8:00 a.m. – 9:30 a.m.	Art vs. Science - The Role of Science in the Winemaking Process
Saturday	10:30 a.m. – 12:00 p.m.	Art vs. Science - The Role of Science in the Winemaking Process
Saturday	1:30 p.m. – 2:30 p.m	Creating Tests Can be Easy! Let Examgen Show You How
Saturday	3:30 p.m. – 4:30 p.m.	Roller Coaster Physics – Putting Physics Principles in Action

Innovating Science: Chemistry Demonstrations that Really Get a Reaction!

This workshop will show you how to incorporate exciting, engaging chemical demonstrations into your chemistry curriculum. These demonstrations are guaranteed to grab your student's attention, enhance their learning experience all while teaching fundamental science concepts.

Improving Standardized Test Scores with Engaging Learning Systems for Middle and High School Students

Experience how game-based learning reinforces key concepts and helps middle and high school students prepare for standards-based tests. Multi-faceted games are perfect for individual or group learning; the digital version allows the entire class to participate and is ideal for differentiated instruction, after-school programs and parental involvement programs. At the conclusion of the workshop, attendees will receive samples of the Curriculum Mastery Games for use in their own classroom.

Learn How to Develop a S.T.E.M. Challenge Competition using K'NEX

Academic competitions help to motivate students, encourage peer interaction, creativity and team building skills. This unique competition was developed to include a focus on key S.T.E.M. concepts using K'NEX. The kick-off challenge, which took place in Pittsburgh, PA, hosted 43 student teams representing 35 school districts. Each team was given a challenge problem and together planned, designed, built and presented their solutions to a panel of judges. Additionally, each team was required to bring a blueprint of their solution and present a narrative outline to the judges. Come and learn how you can create this same program at your school.

Improving Standardized Test Scores with Engaging Learning Systems for Middle and High School Students

Experience how game-based learning reinforces key concepts and helps middle and high school students prepare for standards-based tests. Multi-faceted games are perfect for individual or group learning; the digital version allows the entire class to participate and is ideal for differentiated instruction, after-school programs and parental involvement programs. These game-based learning systems won a 2009 Teacher's Choice Award Winner in *Learning Magazine*. At the conclusion of the workshop, attendees will receive samples of the Curriculum Mastery Games for use in their own classroom.

Art vs. Science - The Role of Science in the Winemaking Process

From the vineyard to the table, modern wine makers employ a multitude of scientific techniques to help them control every stage of the wine making process. Learn how contemporary wine makers use biology, chemistry and physical science to help them 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 per presentation so get there early!

Creating Tests Can Be Easy! Let Examgen Show You How

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.

Roller Coaster Physics – Putting Physics Principles in Action

Keep your hands and legs inside the car at all times while we explore some of the physical principles behind the modern rollercoaster. 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. 3B Scientific equipment will be used to help demonstrate these concepts and experiment guides will be available.

Genetics: Crazy Traits and Adaptation Survivor (Bio)

(Grades 5–12) *131, Moscone Center*

Sponsor: CPO Science/School Specialty Science

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

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

Tough Topics in Earth Science: Plate Tectonics with My World GIS™ (Earth)

(Grades 7–12) *132, Moscone Center*

Sponsor: PASCO Scientific

Presenter to be announced

Explore plate tectonics, one of the most comprehensive and important topics in Earth science, in this hands-on workshop featuring PASCO's new Earth science lab manual and My World GIS software. Use My World GIS to analyze evidence supporting the theory of plate tectonics, while experiencing how PASCO's state-of-the-art, standards-based science education solutions enhance student learning.

Classroom Weather Station with PASCO Probeware (K–5 Science) (Earth)

(Grades 2–5) *133, Moscone Center*

Sponsor: PASCO Scientific

Presenter to be announced

Use PASCO probeware to explore temperature, humidity, barometric pressure, and wind speed in this hands-on workshop. Learn how to create a weather station in your classroom and how to guide students through weather data analysis in a wide variety of engaging, standards-based science and math activities throughout the school year.

FREE Teaching Resources from the Howard Hughes Medical Institute (HHMI) on Viral Outbreaks and the Science of Emerging Diseases (Bio)

(Grades 9–College) *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.

Viral diseases pose a threat to world health. International travel has resulted in infectious outbreaks that have spread rapidly to temperate areas. Learn how researchers are using simple and sophisticated technologies to detect and fight infectious diseases such as dengue fever and SARS. Receive free HHMI and teacher-generated resources.

Master of Science in Geosciences via Distance Learning from Mississippi State University (Earth)

(Grades K–12) *202/204, Moscone Center*

Sponsor: Mississippi State University

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

Discover how you can earn an MS degree in geosciences via distance learning through the Teachers in Geosciences program. Our 12-course, 36-credit-hour graduate program includes courses in meteorology, geology, planetary science, oceanography, hydrology, and environmental geosciences. We have alumni in all 50 states and all students qualify for in-state tuition rates.

3M Young Scientist Challenge/Science of Everyday Life (Gen)

(Grades K–8) *206, Moscone Center*

Sponsor: Discovery Education

Brad Fountain, Discovery Education, Silver Spring, Md.

Science is more than just Bunsen burners and beakers. Help students discover how science is actually a part of our everyday lives and how they can apply this knowledge to win $25,000 and the title of America's Top Young Scientist. In partnership with 3M, *ScienceofEverydayLife.com* offers teachers and families tools to facilitate learning and promote innovative thinking using hands-on lesson plans and interactive features designed to motivate and inspire K–8 students! Join us for a chance to win an innovation kit filled with 3M supplies.

Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (Chem)

(Grades 8–College) *256, Moscone Center*

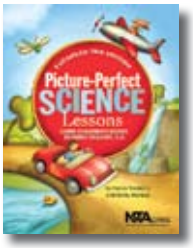
Sponsor: Wavefunction, Inc.

Jurgen Schnitker *(sales@wavefun.com),* Wavefunction, Inc., Irvine, Calif.

Widely recognized as a powerful teaching tool, molecular modeling is now a common component of introductory chemistry classes at the college level. Bring your laptop and learn how to integrate state-of-the-art modeling into your teaching of AP chemistry.

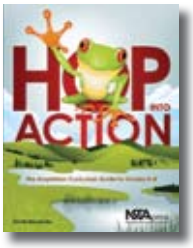
Shop for the latest in professional development titles

FREE SHIPPING on Onsite Purchases



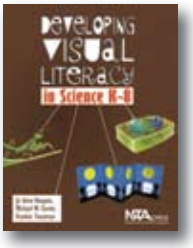
Picture-Perfect Science Lessons, Expanded 2nd Edition
Using Children's Books to Guide Inquiry, 3–6

Grades 3–6
Members: $27.96
Non-Members: $34.95



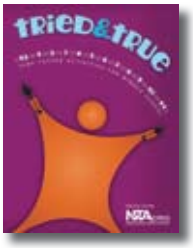
Hop Into Action
The Amphibian Curriculum Guide for Grades K-4

Grades K–4
Members: $18.36
Non-Members: $22.95



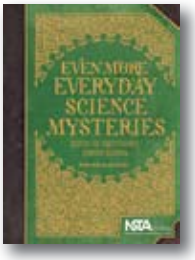
Developing Visual Literacy in Science, K–8

Grades K–8
Members: $19.96
Non-Members: $24.95



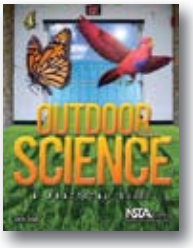
Tried and True
Time-Tested Activities for Middle School

Grades 5–8
Members: $20.76
Non-Members: $25.95



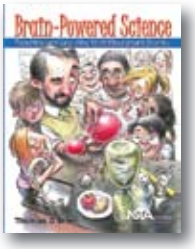
Even More Everyday Science Mysteries

Grades K–8
Members: $19.96
Non-members: $24.95



Outdoor Science

Grades 3–8
Members: $19.96
Non-members: $24.95



Brain-Powered Science

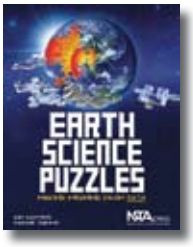
Grades 5–12
Members: $26.36
Non-members: $32.95

Designing Effective Science Instruction

Grades K–12
Members: $24.76
Non-members: $30.95

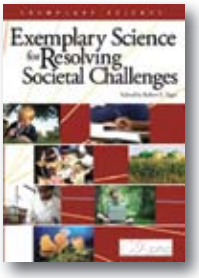
Predict, Observe, Explain
Activities Enhancing Scientific Understanding

Grades 7–12
Members: $23.96
Non-Members: $29.95



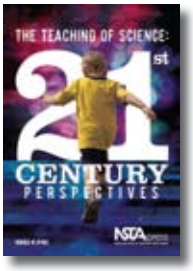
Earth Science Puzzles
Making Meaning From Data

Grades 8–12
Members: $20.76
Non-Members: $25.95



Exemplary Science for Resolving Societal Challenges

Grades PreK–College
Members: $20.76
Non-Members: 25.95



The Teaching of Science
21st-Century Perspectives

Grades K–12
Members: $22.36
Non-Members: $27.95

Visit the NSTA Science Bookstore or buy online at *www.nsta.org/store*.

NSTA press
National Science Teachers Association

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 worksheets.

Iron Teacher **(Bio)**
(Grades 6–12) *274/276, Moscone Center*
Sponsor: WARD'S Natural Science
Tim Montondo *(tmontondo@wardsci.com),* WARD'S Natural Science, Tonawanda, N.Y.
Much like the popular chef competition on TV, this workshop pits educator *vs.* educator in a battle of experimental design. Using live critters, common items, and secret ingredients, participants will have 30 minutes to create an experiment around animal behavior.

Building Inquiry with a Human Approach **(Bio)**
(Grades 9–12) *300, Moscone Center*
Sponsor: Kendall Hunt Publishing Co.
Brooke Bourdelat-Parks, BSCS, Colorado Springs, Calif.
Join us as we discuss the book *BSCS Biology: A Human Approach,* in its new 4th edition. Learn how to help your students understand biology concepts through inquiry-based activities and constructivist learning strategies. The curriculum is delivered through a comprehensive online learning network, and students will transition from activities that explicitly guide their inquiry to doing their own inquiry.

Human Physiology 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 exploring grip strength, EKG, heart rate, and more from our *Human Physiology with Vernier* lab book will be conducted in this hands-on workshop. You will be able to try these experiments using LabQuest and LabQuest Mini interfaces and our award-winning Logger *Pro* software.

New! Advanced Physics with Vernier **(Gen)**
(Grades 9–College) *302, Moscone Center*
Sponsor: Vernier Software & Technology
Larry Dukerich *(info@vernier.com),* Arizona State University, Tempe
Rick Sorensen *(info@vernier.com)*, Vernier Software & Technology, Beaverton, Ore.
Get hands-on experience with our new mechanics curriculum for college, AP, and IB physics courses! Go beyond verification labs by using inquiry techniques to emphasize the exploration of phenomena and make sense of observations. Use advanced data collection and analysis to explore quantitative relationships between variables.

Get Charged Up with Educational Innovations! **(Phys)**
(Grades 5–9) *303, Moscone Center*
Sponsor: Educational Innovations, Inc.
Ken Byrne *(info@teachersource.com),* Educational Innovations, Inc., Norwalk, Conn.
Engage in fun activities with static electricity. Make your own Franklin static motor and discover a plethora of activities to get your class charged up. Door prizes!

Fantastic Physical Science Demonstrations from Flinn Scientific **(Chem)**
(Grades 6–12) *304, Moscone Center*
Sponsor: Flinn Scientific, Inc.
Lori Kessler, Flinn Scientific, Inc., Batavia, Ill.
Amaze your students with quick demonstrations that teach common physical science topics—sound, color dynamics, energy, pressure, density, rotation, and scientific inquiry. More than a dozen effective demonstrations will be performed.

If You Teach AP Chemistry, You Gotta Get This! **(Chem)**
(Grades 9–12) *305, Moscone Center*
Sponsor: Pearson
Ed Waterman, Retired Educator, Fort Collins, Colo.
Finally an AP test prep workbook that gets results! Acquire rich resources that help students learn to score well on the AP Chemistry exam, even with limited time. Correlated to *Chemistry the Central Science* by Brown and Le May, everything you need is here.

Bio-Rad Enzymes and Biofuels—Go from Grass to Gas! (Bio)

(Grades 9–College) *308, Moscone Center*

Sponsor: Bio-Rad Laboratories

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

Reveal the power of enzyme kinetics through a real-world application to biofuels. Through guided inquiry activities, determine how temperature, pH, and the concentration of substrate and enzyme will affect an enzymatic reaction as well as the rate of reaction for the enzyme cellobiase (a key enzyme in the production of cellulosic ethanol, a biofuel). Can biofuels solve global warming? Let your students decide.

8:00–10:00 AM Workshops

Professional Development Providers Boot Camp: The Basics (Gen)

(General) *Yosemite C, Hilton*

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

Join members of the NSTA Professional Development Committee as they share strategies for becoming more effective and offer solutions to potential challenges.

PDI **TERC Pathway Session: Using Computer Tools to Visualize and Analyze Data (Gen)**

(General) *Yerba Buena Salon 1, Marriott*

Andee Rubin *(andee_rubin@terc.edu),* TERC, Cambridge, Mass.

How can a well-designed tool enhance data analysis? Learn how to use TinkerPlots to explore data sets and consider trade-offs between analysis with and without a computer. Please bring a laptop.

Come to FLINN SCIENTIFIC's

Morning of Chemistry

Chemistry Demonstration Celebration!

By Patti Duncan

You're invited to Flinn Scientific's *Morning of Chemistry!* This fresh new presentation is a must-see event! Patti Duncan is a master at helping students understand chemistry topics and she will share her favorite and most effective demonstrations. Come and celebrate the joy of chemistry!

You'll discover innovative twists to new and classic demos that you'll want to include in your lesson plans. Here's proof that great demos don't need to be complicated or expensive. Patti's engaging style and entertaining demonstrations help students realize that complex topics can be easy to understand and learning chemistry can be fun!

Come to Flinn Scientific's *Morning of Chemistry!*
Handouts will be provided.

Friday, March 11, 2011 • 10:00 a.m. – 11:30 a.m.

Room 135, Moscone Center

Plan Now to Attend Flinn's *Morning of Chemistry*.

FLINN SCIENTIFIC, INC

1-800-452-1261
flinn@flinnsci.com
www.flinnsci.com

PDI **BSCS Pathway Session: Identifying and Using Strategies to Help Your Students Make Sense of Concepts in Science (Gen)**
(Middle Level–High School) *Yerba Buena Salon 2, Marriott*
Betty Stennett, BSCS, Colorado Springs, Colo.
Explore new ways to help your students make sense of science concepts for those areas where students struggle and where strategies are not available as part of their current curriculum.

PDI **EDC Pathway Session: Writing in Science Using Firsthand Data (Gen)**
(Elementary) *Yerba Buena Salon 3, Marriott*
Jeff Winokur *(jwinokur@edc.org),* Education Development Center, Inc., Newton, Mass.
Martha Heller-Winokur *(mwinokur@rcn.com),* Teaching and Learning Alliance, Medford, Mass.
Discuss advantages of and strategies for incorporating data, gathered from firsthand investigation and recorded in elementary science notebooks, as a source for science writing.

8:00–11:00 AM Short Courses

Building a Classroom Planetarium (SC-9)
(General) *Merced A/B, Grand Hyatt*
Tickets Required: $36 SOLD OUT
Jeff Adkins *(astronomyteacher@mac.com),* Deer Valley High School, Antioch, Calif.
For description, see Volume 1, page 67.

The Young Scientist: Engaging Three- to Five-Year-Old Children in Science (SC-10)
(Preschool–Early Elementary) *San Miguel, Grand Hyatt*
Tickets Required: $43 SOLD OUT
Karen Worth *(kworth@edc.org),* Education Development Center, Inc., Newton, Mass.
For description, see Volume 1, page 67.

English Language Learner Strategies for Success in Secondary Science (SC-8)
(Secondary Level) *Union Square, Grand Hyatt*
Tickets Required: $58
Jennifer Jordan-Kaszuba *(jennifer.jordan-kaszuba@esc13.txed.net),* Education Service Center Region XIII, Austin, Tex.
Martha Alexander *(malexander@esc18.net)* and **Sandra Casimir** *(scasimir@esc18.net),* Region 18 Education Service Center, Midland, Tex.
Judy York *(jyork@esc12.net),* Education Service Center 12, Waco, Tex.
Carol Fletcher *(carol.fletcher@mail.utexas.edu),* The University of Texas at Austin
For description, see Volume 1, page 67.

8:00–11:00 AM Workshop

PDI **LHS and WestEd Pathway Session: Assessment-centered Teaching: A Reflective Practice (Gen)**
(General) *Yerba Buena Salon 5, Marriott*
Jo Topps *(jtopps@wested.org),* K–12 Alliance/WestEd, Santa Ana, Calif.
Go beyond the grade book! Learn a process that includes designing a unit assessment plan, analyzing student work for patterns, and modifying instruction based on student work.

8:00 AM–12 Noon Short Course

✔ **Physics on the Subway (SC-11)**
(Middle Level–College) *Sausalito, Grand Hyatt*
Tickets Required: $40
Lee Trampleasure *(lee@trampleasure.net),* Carondelet High School, Concord, Calif.
For description, see Volume 1, page 67.

8:00 AM–12:30 PM Short Course

Exploring Birds and Citizen Science at the California Academy of Sciences (SC-12)
(Elementary–Middle Level) *Off-site*
Tickets Required: $101
Jennifer M. Fee *(jms327@cornell.edu),* Cornell Lab of Ornithology, Ithaca, N.Y.
Helena L. Carmena *(hcarmena@calacademy.org)* and **Megan K. Schufreider** *(mschufreider@calacademy.org),* California Academy of Sciences, San Francisco
For description, see Volume 1, page 68.

8:00 AM–12:30 PM NSTA Symposium

FDA/NSTA Symposium: Teaching Nutrition Science and the Food Label (SYM-3)
(Grades 5–12) *Golden Gate C1, Marriott*
Tickets Required: $54
Crystal Rasnake and **Blakeley Denkinger,** U.S. Food and Drug Administration, College Park, Md.
Elena Stowell *(elena.stowell@kent.k12.wa.us),* Kentwood High School, Covington, Wash.
Mimi Cooper *(mimicooper@verizon.net),* Consultant, Green Cove Springs, Fla.
For description, see Volume 1, page 63.

8:00 AM–3:00 PM Short Course

NOAA Ship *Okeanos Explorer:* Why Do We Explore? …and How Do We Explore? (SC-13)
(Grades 5–12) *San Francisco A/B, Grand Hyatt*
Tickets Required: $23
Susan Haynes *(susan.haynes@noaa.gov),* NOAA Office of Ocean Exploration and Research, Barrington, R.I.
Melissa Ryan *(melissa.ryan@noaa.gov),* NOAA Office of Exploration and Research, Mystic, Conn.
Paula Keener-Chavis *(paula-keener.chavis@noaa.gov),* Hollings Marine Laboratory, Charleston, S.C.
For description, see Volume 1, page 68.

8:30–9:00 AM Presentation

SESSION 1
(Middle Level–High School/Informal Ed) *Sierra A, Marriott*
Partnering Research Scientists and Secondary Science Teachers (Bio)
Andrew Grillo-Hill *(andrew.grillo-hill@ucsf.edu)* and **Ben Koo** *(ben.koo@ucsf.edu),* University of California, San Francisco
Presider: Andrew Grillo-Hill
Learn about the benefits of partnering early-career research scientists with secondary science teachers to co-plan and co-teach science lessons for middle and high school students.

8:30–9:30 AM Featured Presentation

✔ **Effective Teaching for Effective Learning (Gen)**
(General) *103, Moscone Center*

Lawrence Lowery *(larry@biglittlebooks.com),* Professor Emeritus, Graduate School of Education and Lawrence Hall of Science, University of California, Berkeley

Presider: Cathy Klinesteker *(cklinest@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Practical, research-based teaching procedures that can improve learning will be presented. Participants will be engaged in activities that relate research to the new National Core Standards. Bring your brains. The presenter will show you how they work by putting them to work. What you learn will be useful in the classroom.

A professor emeritus at the Lawrence Hall of Science, University of California at Berkeley, Lawrence Lowery began his career at the university in 1965. At the Lawrence Hall of Science, Lowery was the principal investigator for both the EQUALS math program and FAMILY MATH. He remains active as the principal investigator for the Full Option Science System (FOSS), a K–8 science program funded by the National Science Foundation and developed at the university.

His authorship is extensive, ranging from children's books to numerous research papers and publications, including NSTA Pathways—Guidelines to the Science Standards (Elementary) *and* How Science Curriculums Reflect Brain Research. *In 1996, his CD-ROM* Peter Rabbit's Math Garden *was awarded Best Software Program in Mathematics by* Newsweek.

8:30–9:30 AM Workshop

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

(General) *Yerba Buena Salon 8, Marriott*

Emily H. van Zee, Oregon State University, Corvallis

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

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

8:30–10:30 AM Meeting

Aerospace Programs Advisory Board Meeting

Seacliff, Hilton

8:30–11:00 AM Exhibitor Workshop

Middle School Science Notebooks to Assess Learning with FOSS (For Experienced Users) (Gen)

(Grades 5–8) *130, Moscone Center*

Sponsor: Delta Education/School Specialty Science–FOSS

Jessica Penchos, Lawrence Hall of Science, University of California, Berkeley

Virginia Reid, Consultant, Olympia, Wash.

Now that you're using student science notebooks, what more can you do with them? Student work samples and the FOSS Middle School Curriculum will be used to show how to engage students in assessment practices and strategies that advance student learning. Take home sample FOSS materials.

8:30 AM–3:30 PM Meeting

NCATE Workshop: Writing to Improve Your Program

Union Square 12, Hilton

This daylong workshop reviews the process in developing a program review for NSTA preservice programs. Topics include a discussion of standards and sample assessments. Visit *www.nsta.org/preservice/accreditation-ncate* for more information.

8:40–9:10 AM Exhibitor Workshop

Dropping In a Microgravity Environment (DIME) (Phys)

(Grades 5–12) *310, Moscone Center*

Sponsor: NASA Education

Richard DeLombard *(00ug00@gmail.com),* NASA Glenn Research Center, Cleveland, Ohio

Microgravity can be demonstrated in a classroom using very simple techniques that relate spaceflight with common ordinary devices.

9:00–10:00 AM Presentations

SESSION 1 (two presentations)

(General) *Yerba Buena Salon 9/Group 2, Marriott*

Informal Science Day Session: Promoting Environmental Literacy Through Student Engagement and Teacher Professional Development (Bio)

Robin Keith, San Diego Zoo Institute for Conservation Research, Escondido, Calif.

Learn about the science of saving species from the Conservation Education Lab at the San Diego Zoo Institute for Conservation Research.

Informal Science Day Session: Address Climate Change with Hands-On Activities! (Env)

Katie Levedahl *(klevedahl@sciencenter.org),* Sciencenter, Ithaca, N.Y.

Hands-on climate change and energy activities! Come try out a variety of free tool kits and activities for use in formal and informal learning environments.

SESSION 2

Informal Science Day Session: The SciGirls Seven: Strategies to Engage Girls in STEM (Gen)

(General) *Yerba Buena Salon 9/Group 3, Marriott*

Lisa Regalla *(lregalla@tpt.org),* Twin Cities Public Television, St. Paul, Minn.

Every girl can be a SciGirl! Walk away with free activities, resources, and practical tips from PBS that you can use to engage girls in STEM.

SESSION 3

Informal Science Day Session: Antarctica's Climate Secrets (Env)

(General) *Yerba Buena Salon 9/Group 4, Marriott*

Louise Huffman *(lhuffman@andrill.org),* University of Nebraska, Lincoln

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

Gain background information about cutting-edge climate change science and leave with hands-on materials ready for immediate use in after-school programs regardless the venue.

9:00–10:00 AM Workshop

Informal Science Day Session: DNA Day Activities (Bio)

(General) *Yerba Buena Salon 9/Group 1, Marriott*

Maurice Godfrey *(mgodfrey@unmc.edu),* University of Nebraska Medical Center, Omaha

This hands-on workshop will present activities that we have used to commemorate DNA Day. Learn how to adapt and use these curriculum ideas for your classroom.

9:00–10:30 AM Exhibitor Workshop

Swing, Roll, and Spin into STEM in Your Primary Classroom: Building Blocks of Science (Phys)

(Grades K–1) *122, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Meet STEM expectations in your primary classroom. Explore patterns and systems with Building Block of Science®'s *Patterns All Around*. Discover patterns and gain understanding in how objects move, then investigate motion with student-constructed toys that explore systems and how parts interact and change using Building Block of Science's *Push, Pull, Go*. Classroom materials provided.

9:00–11:00 AM International Curriculum Showcase

This session will include presentations of exemplary science curricula from around the world. Participants will be provided with an insider's view of classroom instruction in different countries and cultures.

9:00–10:00 AM

The Use of Worldwide Recyclables to Construct Gadgets Used to Teach Science Concepts and Also Promote Creativity by Having the Students Create Permutations of the Gadgets as a Way of Assessing Outcomes and Understanding of the Concepts

Sierra B, Marriott

Joseph Laszlo, University of Hawaii, Honolulu

Eduardo D.C. Valadares, Federal University of Minas Gerais Celo Horizonte, Brazil

Shrinking science budgets dictate the use of recyclables to teach concepts. The creation of similar gadgets by students is a way to evaluate the learning.

Smarter Science in Canada

Sierra C, Marriott

Michael J. Newnham, Youth Science Canada, Toronto, Ont.

The Smarter Science framework is teaching educators how to embed inquiry-based project science into their grades 1–12 curricula.

Wikid: A Story-based Middle School Inquiry Curriculum from the U.K.

Sierra E, Marriott

Antony Sherborne, Sheffield Hallam University, Sheffield, U.K.

Wikid has become the most popular curriculum by focusing on student motivation, big ideas, and the demands of a high-stakes assessment system.

10:00–11:00 AM

Science Across the Americas

Sierra B, Marriott

John Penick, 2003–2004 NSTA President, and Sangari Global Education, Miami, Fla.

Come see how innovative and effective curriculum strategies are being promoted by Sangari Active Science with 600,000 elementary students in three countries (Brazil, Argentina, and the U.S.).

The Effect of a National Curriculum on the Development of Primary Science Education in the U.K.

Sierra C, Marriott

Annette Smith, Association for Science Education, Hatfield, U.K.

I will look at the effect of the statutory national curriculum in the U.K. on the teaching of science in primary schools, and how the proposed changes of the past two years have had further effects.

Swedish Approach to Creativity in Teaching

Sierra E, Marriott

Hans Persson, University of Stockholm, Sweden

Join me as I share concrete examples from all over Sweden. Learn how creativity can be a powerful force in science teaching. Handouts provided.

9:00–11:00 AM Exhibitor Workshop

Bio-Rad Protein Electrophoresis Made Fast, Easy, and Affordable! (Bio)

(Grades 9–College) *306, Moscone Center*

Sponsor: Bio-Rad Laboratories

Kirk Brown *(biotechnology_explorer@bio-rad.com),* Tracy High School, Tracy, Calif.

Expand your activities using micropipets and power supplies by adding protein gels. Join us to see the wide scope of applications for vertical electrophoresis. From studying fish protein sample differences to seeing if green fluorescent protein (GFP) can glow inside a gel, protein electrophoresis is an essential tool for studying proteins. Faster than ever—learn how these gels can be run in 20 minutes or less!

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.

9:20–9:50 AM Exhibitor Workshop

Dropping In a Microgravity Environment (DIME) (Phys)

(Grades 6–12) *310, Moscone Center*

Sponsor: NASA Education

Richard DeLombard *(00ug00@gmail.com),* NASA Glenn Research Center, Cleveland, Ohio

Microgravity can be demonstrated in a classroom using very simple techniques that relate spaceflight with common ordinary devices.

9:30–10:00 AM Presentations

SESSION 1

NSTA Avenue Session: NSTA Teacher and Principal Awards and Recognitions (Gen)

(General) *113, Moscone Center*

Hubert M. Dyasi, Chairperson, NSTA Awards and Recognitions Committee, Yonkers, N.Y.

NSTA recognizes and rewards exemplary teachers and principals with cash, trips, science materials, and more. Learn how to apply!

SESSION 2

Scaffolding Inquiry for All Learners (Gen)

(General) *200, Moscone Center*

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

Explore student-friendly scaffolding techniques to assist students with varying academic abilities as they conduct student-centered lab investigations.

9:30–10:30 AM Presentations

SESSION 1

Talking Science Is Doing Science: Scientific Discourse for English Language Learners (Gen)

(General) *Continental 2, Hilton*

June Wai, Teachers College, Columbia University, New York, N.Y.

Video projects that seamlessly combine scientific inquiry and English language development allow ESL students to communicate their questions, predictions, observations, and understanding of scientific texts.

SESSION 2

Digital Science Notebooks for the Immigrants and the Intuitive (Gen)

(Elementary–High School) *Continental 3, Hilton*

Jenny H. Gammill *(jenny.gammill@fayar.net),* Fayetteville (Ark.) Public Schools

Marjo E. Burk *(marjo.burk@fayar.net),* Root Elementary School, Fayetteville, Ark.

Jake S. Beers *(jake.beers@fayar.net),* Washington Elementary School, Fayetteville, Ark.

Every student is developing an electronic portfolio…outside of the classroom. Learn how you can facilitate this process with free tools and leave with ideas for immediate use!

SESSION 3

NMLSTA Session: NMLSTA Share-a-Thon (Gen)

(General) *Continental 4, Hilton*

Rajeev Swami *(chem276@yahoo.com),* NMLSTA President, and Central State University, Wilberforce, Ohio

Annette Barzal *(abarzal@earthlink.net),* Sangari Global Education, Medina, Ohio

Members of NMLSTA will present their best lessons exemplifying inquiry and assessment in the middle level classroom. Come join us.

SESSION 4

Imagine and Invent: Create a Great Future! (Gen)

(General) *Continental 6, Hilton*

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

Recent reports warn that the U.S. is slipping in the area of innovation. Here are some exciting techniques that can be used to stimulate students' creativity.

SESSION 5

NSTA Press Session: SAFER Science: Laboratory Hazards You Must Deal With! (Phys)

(General) *Continental 9, Hilton*

Kenneth R. Roy *(safesci@sbcglobal.net),* Glastonbury (Conn.) Public Schools

Explore how to make your lab SAFER by dealing with obvious and not-so-obvious hazards.

SESSION 6

Science Teaching as a Profession (Gen)

(General) *Golden Gate 1, Hilton*

Sheila Tobias, Tucson, Ariz.

Accountability and teacher autonomy—must there be a conflict?

SESSION 7

Grass Roots Professional Development (Gen)

(Elementary/Supervision) *Golden Gate 2, Hilton*

Chad A. Wertz and **Mike D'Hondt** *(mdhondt@bham.wednet.edu),* Bellingham School District, and Western Washington University, Bellingham, Wash.

Presider: George Nelson, Western Washington University, Bellingham

Teachers in the Bellingham School District worked to improve elementary science education through the use of peer-based professional development strategies.

SESSION 8 (two presentations)

(Middle Level) *Golden Gate 5, Hilton*

Student-created Video Weather Reports (Earth)

Charles Conway and **Raj Kumaraswamy,** The Anderson School, New York, N.Y.

From direct observations, data collection, and weather map analysis to forecasting, students create their own videotaped weather report.

Assessing and Advancing Students' Understanding of Core Earth Systems Science Concepts with Classroom Network Technologies (Earth)

Angela H. DeBarger *(angela.haydel@sri.com),* **William R. Penuel** *(william.penuel@sri.com),* and **Christopher J. Harris,** SRI International, Menlo Park, Calif.

Yves Beauvineau, Farrell B. Howell School, Denver, Colo.

Jim Minstrell *(jimminstrell@facetinnovations.com),* FACET Innovations, Seattle, Wash.

Learn about students' problematic (yet productive) ideas on weathering, erosion, and plate tectonics and how classroom network technology formatively assesses these ideas and improves instruction.

SESSION 9

Mathematically Rich Preschool Environments as the Foundation for Scientific Inquiry (Gen)

(Preschool) *Golden Gate 7, Hilton*

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

Judy Cashell, Center for Community and Family Services, Head Start, Pasadena, Calif.

Use mathematical language in preschool science inquiry when collecting data, quantifying results, measuring, tracking events over time, understanding spatial dimensions, and representing patterns.

SESSION 10

NSTA Press Session: Developing Formative Assessment Probes Based on Learning Research (Gen)

(General) *Golden Gate 8, Hilton*

Page Keeley *(pagekeeley@gmail.com),* 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

I will walk you through the steps of developing the types of formative assessment probes in the *Uncovering Student Ideas in Science* series.

SESSION 11

ASTE Session: Science Exploratoriums: Connecting Elementary Students, Preservice Teachers, Practicing Teachers, and University Science Educators (Gen)

(Elementary/College) *Union Square 1/2, Hilton*

Ingrid Flores *(iflores@csusm.edu),* California State University, San Marcos

Kathy I. Norman, California State University, Sacramento

Preservice teachers present hands-on science lessons based on a collaborative project between university educators and local schools.

SESSION 12

CSSS Session: Improving Instructional Practice in Science (Gen)

(General) *Union Square 13, Hilton*

Kevin J. Richard *(kevinjrichard@yahoo.com),* Michigan Dept. of Education, Lansing

All teachers want to know what makes a good teacher. Michigan Department of Education created a research-based Teaching for Learning Framework that identifies these elements.

SESSION 13

Authors Needed! Publish Your Work in an NSTA Journal (Gen)

(General) *Union Square 14, Hilton*

Ken Roberts *(kroberts@nsta.org),* Assistant Executive Director, Journals, NSTA, Arlington, Va.

Meet with the editors of NSTA's award-winning journals to learn how to prepare and submit an article. Ideas will be critiqued.

SESSION 14 (two presentations)

(General) *Union Square 17/18, Hilton*

SCST Session: Pulling Students into Science Through Citizen Science and Investigations Focusing on Birds (Bio)

Nancy M. Trautmann *(nmt2@cornell.edu)* and **Jennifer M. Fee** *(jms327@cornell.edu),* Cornell Lab of Ornithology, Ithaca, N.Y.

Kathy G. Bradshaw *(bradshk@arc.losrios.edu),* American River College, Sacramento, Calif.

Learn about BirdSleuth and similar citizen science projects and how these undergraduate courses develop science process skills among students, including preservice elementary teachers, who do not think of themselves as scientists.

SCST Session: The Art and Science of Sound: Mapping Biodiversity Through Bird Song and Landscapes (Env)

Eric Strauss, Loyola Marymount University, Los Angeles, Calif.

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

Meredith E. Houle *(mhoule@mail.sdsu.edu),* San Diego State University, San Diego, Calif.

Immerse your students in the acoustic world of birds as a means of introducing ecological concepts and science process skills—from fieldwork to data analysis.

SESSION 15

NSELA Session: NSELA Working Groups—Network with Science Education Leaders (Gen)

(General) *Union Square 21, Hilton*

Janey Kaufmann *(janeykaufmann@msn.com),* NSELA President, Scottsdale, Ariz.

Susan B. Koba *(skoba@cox.net),* Science Education Consultant, Omaha, Neb.

Brenda Wojnowski *(bwojnowski@gmail.com),* University of North Texas, Dallas

Join an NSELA Working Group to pursue an area of interest in science education and actively contribute to networking and planning while addressing that issue.

SESSION 16

Defeating Misconceptions in Physics (Phys)

(High School–College) *Union Square 22, Hilton*

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

Presider: Don Vincent, Edgewood College, Madison, Wis.

Learn some tools that students can use to convince themselves that the common misconceptions they firmly believe are really wrong.

SESSION 17

NARST Session: *Science Times:* Current, Socio-scientific News Stories Written for Students (Gen)

(Middle Level–High School/Informal) *Union Square 25, Hilton*

David B. Zandvliet *(dbz@sfu.ca),* **Carlos Gustavo A. Ormond** *(cormond@sfu.ca),* and **Susan M. Teed** *(smteed@sfu.ca),* Simon Fraser University, Burnaby, B.C., Canada

Challenge students about science with the *Science Times,* an online news source. Created by science educators, the site features current, controversial stories about science, technology, and environmental topics.

SESSION 18

Understanding the Revised AP Chemistry Course: Curriculum, Science Practices, and Instruction Design (Chem)

(High School–College) *Yosemite A, Hilton*

Annis M. Hapkiewicz *(ahapkiew@gmail.com),* Okemos High School, Okemos, Mich.

LaTanya Sharpe *(lsharpe@collegeboard.org),* The College Board, Duluth, Ga.

David Yaron *(yaron@cmu.edu),* Carnegie Mellon University, Pittsburgh, Pa.

Members of the AP Chemistry Curriculum Development Committee will provide instructional strategies and techniques for integrating inquiry-based and student-centered activities into current/future AP Chemistry courses.

SESSION 19

SYM-2 Follow-Up Session: Climate Change Education Resources Help You Bring Climate Change Education Home to Your Students (Env)

(General) *Golden Gate Salon C2, Marriott*

Vicki A. Arthur, USDA Forest Service, Washington, D.C.

Help your students answer the question, "What does climate change mean to me?" These regional U.S. climate change resources are sure to engage and inspire your students.

SESSION 20

Incorporating Google Moon and Mars into the Science Classroom (Earth)

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

Ian C. Binns *(ianbinns@lsu.edu),* Louisiana State University, Baton Rouge

Tina S. Ornduff, Google, Mountain View, Calif.

See how Google Moon and Mars can enhance science teaching in grades 6–12 and try some lessons and activities for space science.

SESSION 21

Watershed Dynamics: Using Web-GIS to Study the Hydrosphere (Earth)

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

Colleen K. Buzby *(c-buzby@northwestern.edu)* and **Colin Sheaff** *(colin-sheaff@northwestern.edu),* Northwestern University, Evanston, Ill.

Use free web-GIS (Geographic Information Systems) tools and curricula to teach water availability and human impact in high school science classes.

SESSION 22 (two presentations)

(Middle Level–High School) *Sierra I, Marriott*

Drinking Water? Convincing Kids That It Matters (Env)

Margaret Anne Busker *(mbusker@akron.k12.oh.us),* Buchtel High School, Akron, Ohio

Here is an entire unit on the disinfection of surface water and the potential harmful by-products of disinfection. Get students hooked into caring.

How Muddy Is the Muddy River? (Env)

Patreka Wood-Blain *(patreka.wood@gmail.com),* Boston (Mass.) Public Schools

Engage urban students by teaching them to explore their environment through the field of urban ecology.

SESSION 23

NSTA High School Earth Science Share Session (Earth)

(High School) *Willow, Marriott*

Bev DeVore-Wedding *(bdevorewedding@meeker.k12.co.us),* NSTA Director, District XIV, and Meeker High School, Meeker, Colo.

Presider: Michael J. Lowry, NSTA Director, High School Science Teaching, and The McCallie School, Chattanooga, Tenn.

The NSTA High School Committee highlights excellent presenters sharing best practice activities, assessments, and teaching tips. Join us for some great ideas!

SESSION 24

SEPA/APAST Share-a-Thon (Gen)

(Preschool–Middle Level) *Yerba Buena Salon 7, Marriott*

Conni Crittenden *(crittec@gmail.com),* Williamston Explorer Elementary School, Williamston, Mich.

Cindy Brown *(cbrown8139@sbcglobal.net),* Horace Mann Elementary School, Woodward, Okla.

Peggy Carlisle *(pjcarl@aol.com),* Pecan Park Elementary School, Jackson, Miss.

Helen Chang *(helenchang47@gmail.com),* Millstone River School, Plainsboro, N.J.

B. Darleen Horton *(darleen.horton@jefferson.kyschools.us),* Cane Run Elementary School, Louisville, Ky.

Tina King *(tinakingtn@gmail.com),* Einstein Fellow, National Science Foundation, Arlington, Va.

Dana Krejcarek, Kohler High School, Kohler, Wis.

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

Kathy Renfrew *(kathy.renfrew@state.vt.us),* Vermont Dept. of Education, Montpelier

Steve A. Rich *(bflywriter@comcast.net),* Georgia Youth Science & Technology Center, Douglasville

Linda Lee Smith *(lsmith@paulsboro.k12.nj.us),* Paulsboro (N.J.) Public Schools

Marlee Tierce *(mtierce@aol.com),* Hampton, Ga.

LeeAnn Vaughan *(leeann.vaughan@ops.org),* Omaha (Neb.) Public Schools

Nadyne Wilds-Gilbert *(deltadyne2000@yahoo.com),* Luther "Nick" Jeralds Middle School, Fayetteville, N.C.

Presidential Awardees share some of their best lessons for elementary through middle level in a poster session.

SESSION 25

PDI **ELL Pathway Session: We Do Science Here! The Administrator's Role in a Title I (K–5) Science-intensive Public School (Gen)**

(General) *Yerba Buena Salon 10, Marriott*

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

Learn how we have been able to encourage science instruction despite the pressures of No Child Left Behind policy in a Title I school with very high ELL and LEP populations. We will share our success, test scores, and vision so that other schools may learn from our experiences. Teaching science every day in every grade has been our motto for success.

SESSION 26

Science College Board Standards for College Success (Gen)

(Middle Level–College) *208/210, Moscone Center*

CANCELED

Christopher C. Lazzaro The College Board, New York, N.Y.

Learn how you can use the Science College Board Standards for College Success (SCBSCS) in unison with your existing system of standards, curriculum, and assessment to strengthen alignment to college readiness.

SESSION 27

ISTE: Fun, Free, and Easy: Great Free Web 2.0 and Open-Source Resources (Gen)

(General) *232/234, Moscone Center*

Brian Bridges *(bbridges@clrn.org),* California Learning Resource Network, Modesto

Presider: Ben Smith *(ben@edtechinnovators.com),* ISTE/Red Lion (Pa.) Area School District

Discover fabulous, free open-source programs and Web 2.0 tools for you and your students. We'll demonstrate the cream of California Learning Resource Network's free web link crop and offer prizes for audience feedback.

SESSION 28

iPad Apps for Science Teachers (Gen)

(General) *250, Moscone Center*

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

The iPad is the perfect tool for the science classroom. See how it can be used in the lab and beyond.

SESSION 29 (two presentations)

(Middle Level–High School) *252/254, Moscone Center*

New Tech High School: Project Based Learning in Science and Technology (Gen)

Julie A. Holmes *(jholmes@latech.edu)* and **Randy Parker** *(doctorp@latech.edu),* Louisiana Tech University, Ruston

Teachers and students will share their experiences in Project Based Learning as part of their New Tech High School experience.

Learning Science Through Exploration: A Practice in Taiwan **(Gen)**

Mao-Cheng Lin, Guang Wu Junior High School, Hsinchu City, Taiwan
Chih-Che Tai *(cctai.etsu@gmail.com),* East Tennessee State University, Johnson City

Students learned science through a variety of exploratory activities, resulting in greater interest in science and better performance on high-stakes tests.

SESSION 30

Smart Graphs **(Gen)**

(Middle Level–High School) *258/260, Moscone Center*

Carolyn J. Staudt *(carolyn@concord.org),* **Chad W. Dorsey** *(cdorsey@concord.org),* and **Dewi Win,** The Concord Consortium, Concord, Mass.

The Smart Graphs project studies the educational value of digital objects embedded in graphs that "know" about themselves and that provide scaffolding to students to help them learn about graphs and the concepts conveyed in graphs.

9:30–10:30 AM Workshops

Integrating Bioinformatics into Introductory Biology Courses **(Bio)**

(High School–College) *Continental 1, Hilton*

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

Integrate basic bioinformatics concepts and tools into introductory biology classrooms using a case study about genetic testing for breast cancer.

Galileo's Notebook **(Earth)**

(Elementary–Middle Level) *Continental 7, Hilton*

Deborah Vannatter, Evansville Vanderburgh School Corp., Evansville, Ind.

Capture students' imagination and teach them the power of discovery. Students make claims based on evidence (recorded observations) in their science notebooks.

The Art of Science Notebook Observations **(Gen)**

(Elementary) *Golden Gate 3, Hilton*

Keri N. Porter *(kporter6@mac.com),* Dolores Street School, Carson, Calif.

The elements of art (technical drawing) are a means to bridge the gap between student observations, their preconceived ideas, and content knowledge.

Designing the City **(Env)**

(Elementary–Middle Level) *Golden Gate 4, Hilton*

Patricia L. Messersmith *(patricia.messersmith@msichicago.org),* Museum of Science and Industry, Chicago, Ill.

Explore urban design concepts like sustainable building, renewable energy, and urban gardening while participating in hands-on and science journal activities. Lessons and resources included.

Starting Them Early: Science Learning in the preK and Early Elementary Classroom **(Gen)**

(Preschool–Elementary) *Golden Gate 6, Hilton*

Mia Jackson, Foundation for Family Science and Engineering, Portland, Ore.

Young children are ready and able to dive into science. Discover innovative resources and best practices designed to lay the foundation for lifelong science learning.

CESI Session: Environmental Education at Your Fingertips **(Gen)**

(Elementary–Middle Level) *Union Square 5/6, Hilton*

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

Enhance your lesson plans with a website dedicated to K–8 science teaching. Online units include science of air, water, global issues, and food.

Reflecting On Practice: Professional Development for Informal Science Educators **(Gen)**

(Informal Education) *Union Square 15/16, Hilton*

Lynn U. Tran *(lynn.tran@berkeley.edu),* **Erica G. Friesen** *(friesen@berkeley.edu),* and **Catherine Halversen** *(chalver@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Here is an innovative program that offers informal science educators the opportunity to reflect on their practice, learn about the theories and research underlying their work, and develop skills for reflection.

All Systems Checked! (Gen)
(Middle Level) *Union Square 19/20, Hilton*
Regina B. Snyder *(regina.snyder@ccisd.us),* Driscoll Middle School, Corpus Christi, Tex.
CANCELED
This workshop will integrate graphic organizers and hands-on activities with technology, with a focus on human body systems, organisms, and the solar system. Handouts and door prizes.

Practical Applications: Differentiation Strategies for Science (Gen)
(Elementary–Middle Level) *Union Square 23/24, Hilton*
Karie F. Gladis *(kgladis@tcmpub.com),* San Clemente, Calif.
Explore research-based strategies for differentiating science by content, process, and product. I'll model lessons using the strategies and step-by-step processes for strategy implementation.

Teaching Physical Science Using Underwater Sound (Phys)
(Informal Education) *Nob Hill C, Marriott*
Gail A. Scowcroft *(gailscow@gso.uri.edu),* **Christopher Knowlton** *(cknowlton@gso.uri.edu),* and **Holly Morin** *(hmorin@gso.uri.edu),* University of Rhode Island, Narragansett
Incorporate the natural world phenomenon of underwater sound into classroom physical science activities. Free CD-ROMs.

MoonKAM: Exploring Lunar Images (Gen)
(Middle Level) *Nob Hill D, Marriott*
Leesa J. Hubbard *(leesa@sallyridescience.com),* Sally Ride Science, San Diego, Calif.
Karen Flammer *(flammer@ece.ucsd.edu),* University of California, San Diego, La Jolla
Learn about the exciting GRAIL mission to our Moon, how students can take pictures with MoonKAM cameras, and what imagery of the lunar surface can teach us about the Moon's history, composition, and role in our solar system. Try some hands-on lunar science activities.

DuPont Presents—Connecting Proportional Reasoning in Math and Science (Gen)
(Elementary–Middle Level) *Pacific A, Marriott*
Dorothy Moss *(dmoss@clemson.edu),* Clemson University, Clemson, S.C.
These hands-on activities focus on math and science connections involving proportional reasoning.

Our Amazing Immune System (Bio)
(Middle Level–High School) *Pacific I, Marriott*
Victoria Brady *(toryb@exploratorium.edu),* Exploratorium, San Francisco, Calif.
Learn how the components of the immune system communicate and collaborate to recognize and overcome pathogen invaders and maintain up-to-date defenses.

Dynamic Equilibrium: An Authentic Simulation (Chem)
(High School) *Pacific J, Marriott*
Edmund J. Escudero *(escudero_e@summitcds.org),* Summit Country Day School, Cincinnati, Ohio
Experience a simulation where you are the forward reaction or the reverse reaction in a system achieving equilibrium. Most simulations use physical models. This simulation actually uses "atoms" and "molecules."

NASA: Exploring Magnetism in Space Science (Earth)
(Elementary–High School) *Walnut, Marriott*
Bryan J. Mendez *(bmendez@ssl.berkeley.edu)* and **Nancy Alima Ali** *(nancy.ali@ssl.berkeley.edu),* University of California, Berkeley
These fun hands-on activities and strategies teach the basic concepts of magnetism and its importance in the Sun-Earth System.

PDI **SEPUP Pathway Session: Differentiated Instruction Related to Science and Societal Issues (Bio)**
(Middle Level–High School) *Yerba Buena Salon 4, Marriott*
Barbara Nagle *(bnagle@berkeley.edu)* and **Laura Lenz,** Lawrence Hall of Science, University of California
Participate in life science activities related to health and environmental issues and explore strategies to modify activities for diverse learners in your classroom.

The Little Things That Run the World: Soil Ecology in the Classroom (Env)
(Middle Level–High School/Inf) *Yerba Buena Salon 12/13, Marriott*
David L. Brock *(brockda@rpcs.org),* Roland Park Country School, Baltimore, Md.
Come discover the realm of the amoeba! Learn how to engage your students in field studies exploring the ecology of the microscopic world.

Science Instruction That Promotes Literacy (Gen)
(Middle Level–High School) *111, Moscone Center*
Ollie Irons Manley *(omanley@gsu.edu),* George State University, Atlanta
Here are some writing assignments that encourage students to read and write about science concepts using a writing formula.

Virtually Scientific: Using Online Asynchronous Discussion Forums in the Classroom (Gen)
(General) *112, Moscone Center*
Ann M. Pearson *(apearson@insightfaculty.net)* and **Heather Harris** *(hharris@insightfaculty.net),* Insight School of Wisconsin, Grantsburg
We will look at engaging discussion questions for use in an online forum and moderating discussion forums that encourage successful student participation.

Science Teaching as Coaching: How to Implement the NSES Teaching and Professional Development Standards in Science Methods Courses (Gen)
(General) *212, Moscone Center*
Michael Lynn, Formation Associates, Des Plaines, Ill.
Vito M. Dipinto *(vdipinto@nl.edu),* National-Louis University, Wheeling, Ill.
This workshop incorporates innovative adult-learning activities and exploration of the theme of the "science teacher as coach" to provide firsthand experiences of these topics.

Visualizing the Unviewable: Simple Models to Activate Your Earthquake Instruction (Earth)
(Middle Level–High School) *220/222, Moscone Center*
Michael Hubenthal *(hubenth@iris.edu),* **John Taber** *(taber@iris.edu),* and **Patrick J. McQuillan** *(mcquillan@iris.edu),* IRIS, Washington, D.C.
Explore a collection of simple physical models designed to aid in developing students' understanding of abstract earthquake-related concepts.

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

NSTA National Science Teachers Association

Applying Algebra to Pendulums: Language Acquisition Using Manipulatives (Gen)
(Middle Level–High School) 224/226, Moscone Center
Sandra Robins *(srobins@exploratorium.edu),* The Exploratorium, San Francisco, Calif.
This workshop will focus on language acquisition using hands-on activities to understand the concept of algebraic function as applied to pendulum motion.

Creating a Community of Science Learners (Gen)
(Elementary–Middle Level) 228/230, Moscone Center
Alison K. Billman *(alison_billman@berkeley.edu)* and **John Erickson** *(jerick@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Learn strategies for creating a classroom that supports and encourages scientific questioning, debate, critique, and habits of mind.

NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (Earth)
(Elementary–High School) Meeting Rm. 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.
Filla Sofia Baliwag *(info@earthsciweek.org)* and **Geoff Camphire,** American Geological Institute, Alexandria, Va.
Lynn S. Blaney and **Robert J. Myers,** Institute for Global Environmental Strategies, Arlington, Va.
Tammy Bravo *(tkb@iris.edu),* IRIS, Washington, D.C.
Susan Chapman *(schapman@sciencesocieties.org),* Soil Science Society of America, Madison, Wis.
Jennifer Collins *(jcollins@oceanleadership.org),* Consortium for Ocean Leadership, Washington, D.C.
Don Duggan-Haas *(dugganhaas@museumoftheearth.org),* PRI and its Museum of the Earth, Ithaca, N.Y.
Ron Fabich *(rwfabich@gmail.com),* NESTA, Medina, Ohio
Mark Francek *(mark.francek@cmich.edu),* Central Michigan University, Mount Pleasant
Pamela Harman, SETI Institute, Mountain View, Calif.
Jenelle Hopkins *(jhopkins@interact.ccsd.net),* Centennial High School, Las Vegas, Nev.
Liesl Hotaling, Centers for Ocean Sciences Education Excellence, Highlands, N.J.
Bob King *(bobkingnesta@gmail.com),* Retired Educator, Arlington, Va.
Eric Muller *(emuller@exploratorium.edu),* Exploratorium, San Francisco, Calif.
Carole Reesink *(creesink@bemidjistate.edu),* Bemidji State University, Bemidji, Minn.
Barbara Stein Ritchie *(britchie@francisparker.org),* Francis Parker School, San Diego, Calif.
Diana E. Sjoberg *(sjoberg@cox.net),* Clark County School District, North Las Vegas, Nev.
Rhonda Spidell *(spidellr@hotmail.com),* Albuquerque Academy, Albuquerque, N.Mex.
David C. Tucker *(david.tucker2@comcast.net),* Bellingham, Wash.
Wendy Van Norden *(wvannorden@hw.com),* Harvard-Westlake School, North Hollywood, Calif.
Pamela Whiffen *(pwpwr@aol.com),* NASA Educator Ambassador, Phoenix, Ariz.
Presider: Michelle C. Harris
Join more than 20 NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

9:30–10:30 AM Exhibitor Workshops

Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Physics Classroom (Phys)
(Grades 9–12) *110, Moscone Center*
Sponsor: Texas Instruments
Jacklyn Bonneau *(bonneau@wpi.edu),* Massachusetts Academy of Math & Science, Worcester
Take data collection to a new level with the latest Texas Instruments/Vernier data collection solution for TI-Nspire technology. Learn how TI-Nspire technology can enhance inquiry learning using data collection, assessment, and simulation. Observe student progress through physics lessons and labs in real-time with the TI-Nspire Navigator™ system.

Learn How to Develop a STEM Challenge Competition Using K'NEX® (Gen)
(Grades 4–12) *236/238, Moscone Center*
Sponsor: Fisher Science Education
Amy Cribbs, Allegheny Intermediate Unit, Homestead, Pa.
Robert Jesbert, K'NEX Education, Chalfont, Pa.
Academic competitions help to motivate students and encourage peer interaction, creativity, and team-building skills. This unique competition was developed to include a focus on key STEM concepts using K'NEX. The kickoff challenge, which took place in Pittsburgh, hosted 43 student teams representing 35 school districts. Each team was given a challenge problem, and students planned, designed, built, and presented their solutions to a panel of judges. Additionally, each team was required to bring a blueprint of its solution and present a narrative outline to the judges. The program even included a professional development component for teachers.

Active Chemistry (Chem)
(Grades 9–12) *307, Moscone Center*
Sponsor: It's About Time
Arthur Eisenkraft, 2000–2001 NSTA President, and University of Massachusetts, Boston
Active Chemistry is an NSF inquiry-based curriculum that can make chemistry accessible to ALL high school students. Join us and learn how Active Chemistry can enhance your chemistry instruction, and how your students can become artists using chemistry, cooks using chemistry, and game developers using chemistry. Find out how Active Chemistry support materials can assist with differentiated instruction in the classroom.

9:30–11:00 AM Presentation

SESSION 1
Teacher Researcher Day Session: Exploring Teacher Inquiry and Teacher Research—Conversations for Teachers and Teacher Inquiry Group Leaders (Gen)
(General) *Yerba Buena Salon 8, Marriott*
Claire Bove *(cgbove@flash.net),* Mills College, Oakland, Calif.
Shelley Grant *(grant.shelley@gmail.com),* Bancroft Middle School, San Leandro, Calif.
Isabelle K. McDaniel, Creative Arts Charter School, San Francisco, Calif.
Explore classroom-based inquiry studies. Using video, we'll look inside a teacher inquiry group at practices that support this powerful form of teacher learning.

9:30–11:20 AM Exhibitor Workshop

Nice Ride! Design and Build an Exploration Rover Using the Engineering Design Process (Phys)
(Grades K–8) *309, Moscone Center*
Sponsor: NASA Education
Marci P. Delaney *(marcianna.p.delaney@nasa.gov)*, NASA Goddard Space Flight Center, Greenbelt, Md.
Teach the engineering design process as your student teams design, build, test, and launch lunar landers based on specified needs.

10:00–10:30 AM Presentations

SESSION 1

Supporting Students in Communicating Biology Concepts in Their Second Language (Bio)

(Middle Level–College) *Sierra A, Marriott*

Bernadino De Barros, Burke High School, Boston, Mass.

Presider: Jonathan W. McLaughlin *(jmclaughlin4@boston.k12.ma.us),* Boston (Mass.) Public Schools

I implemented pedagogical strategies with the aim of helping students communicate new biology content knowledge on standardized assessments in their second language. I'll share my successes and challenges.

SESSION 2

Soap Convention: A Competition to Engage All Chemistry Students (Chem)

(High School) *Yerba Buena Salon 15, Marriott*

Emily Dorsey *(emily.dorsey@foresthills.edu)* and **Justin Good** *(justin.good@foresthills.edu),* Anderson High School, Cincinnati, Ohio

Our High School Soap Convention is a fun, theme-based, student-driven competition between chemistry classes to design, produce, and market a soap product. We'll share ideas, handouts, and the results of our Seventh Annual Chemistry Soap Convention.

10:00–11:00 AM Presentations

SESSION 1

Informal Science Day Session: Connecting University Science Students to Community Youth (Gen)

(General) *Yerba Buena Salon 9/Group 1, Marriott*

Kelly V. Beck *(kbeck@stanford.edu),* Stanford University, Stanford, Calif.

Learn about the Science in Service program at Stanford University where science students serve as science mentors for youth at nearby Boys & Girls Clubs. The program connects the civic education of college science students to informal science education experiences for youth in lower-income communities.

SESSION 2

Informal Science Day Session: Partnering to Bridge the Gap Between Formal and Informal Learning Institutions (Gen)

(General) *Yerba Buena Salon 9/Group 2, Marriott*

Ill.

Anne Marie Fayen *(afayen@fieldmusuem.org)* and **Sandra Aponte,** The Field Museum, Chicago, Ill.

Katie Gnau *(kgnau@lpzoo.org),* Lincoln Park Zoo, Chicago, Ill.

Darrell Jones *(darrellj@chicagochildrensmuseum.org),* Chicago Children's Museum, Chicago, Ill.

Presider: Anne Marie Fayen

We will discuss creating and implementing Chicago's Early Elementary Science Partnership (E^2SP), a school-based partnership with museums that links existing school curricula and museum resources.

SESSION 3

Informal Science Day Session: Using the Internet for Up-to-the-Hour Atmospheric Teaching (Env)

(General) *Yerba Buena Salon 9/Group 3, Marriott*

Dara DeVicariis, American Meteorological Society, Mira Loma, Calif.

Learn about a variety of atmospheric science instructional and resource materials, including teacher's guides, hands-on activities, and internet-delivered weather information (DataStream Atmosphere as provided by AMS in Radar and Satellite Imagery), and weather forecasting that will give your students current information and pique their interest.

SESSION 4

Informal Science Day Session: Girls Energy Conservation Corps (GECCo)—What Impact Can Girl Scouts Make on Climate Change? (Env)

(General) *Yerba Buena Salon 9/Group 4, Marriott*

Gilly Puttick *(gilly_puttick@terc.edu)* and **Meaghan Donovan** *(meaghan_donovan@terc.edu),* TERC, Cambridge, Mass.

Help spread the word about energy conservation and climate change. The GECCo program for girls ages 8–13 uses conservation psychology and behavior change models to help connect the dots between energy use and climate change.

10:00–11:15 AM Exhibitor Workshops

Integrating Science and Literacy, Grades 1–6 (Gen)
(Grades 1–6) *123, Moscone Center*
Sponsor: Delta Education/School Specialty Science
Johanna Strange, Consultant, Richmond, Ky.
Tom Graika, Consultant, Lemont, Ill.
Discover a variety of strategies and Delta products that you can use to integrate reading and language arts into your science programs. Learn how your students can experience the enjoyment of learning science with Delta Science Modules and make the literacy connection. Receive a workshop packet and related Delta materials.

Bring Your Science Lab into the 21st Century Using iNeo/SCI™ Virtual Science Solutions (Gen)
(Grades 7–12) *124, Moscone Center*
Sponsor: Frey Scientific/School Specialty Science
Lou Loftin, Consultant, Reno, Nev.
Extend e-Learning with virtual laboratory experiences for your students anywhere! iNeo/SCI provides web-based tools to facilitate teaching and learning with our new e-Learning series content, including virtual laboratory experiences, tutorials, assessments, and active monitoring of students' progress! Participants receive free 21-day trial access to iNeo/SCI.

10:00–11:30 AM Exhibitor Workshops

Exploring Gene Function in *C. elegans:* Mutations and RNA Interference (Bio)
(Grades 9–College) *120, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
The roundworm *C. elegans* lets students explore gene function. Discover the exciting things you can do in the classroom with this model organism. Learn how to grow the worms, explore mutant phenotypes, and easily turn off specific genes with RNA interference.

Innovative and Engaging Chemistry Labs with Real-World Connections—Discover the Inquiries in Science® Series (Chem)
(Grades 9–12) *121, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Looking for inquiry chemistry labs with real-world connections? Identify how exothermic reactions and battery performance integrate into chemistry labs. This workshop provides hands-on experience so you can increase student achievement and bring engagement into your science labs with Carolina's Inquiries in Science lab series. Door prizes provided!

Fast and Furious: Force and Motion for Middle School (Phys)
(Grades 6–8) *125, Moscone Center*
Sponsor: LAB-AIDS, Inc.
Mark Koker, LAB-AIDS, Inc., Ronkonkoma, N.Y.
This engaging middle level unit from SEPUP's Issues and Physical Science course lets students study core force and motion concepts using a scenario of a family looking for a safer car. Students learn about Newton's laws, balanced and unbalanced forces, speed and acceleration…and they also learn how to apply this knowledge in practical terms.

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, which contains 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.

Measuring Reaction Time to a Visual Stimulus (Guided Inquiry Lab) (Bio)
(Grades 9–12) *132, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Join us for a hands-on experience running a classic lab in a new way when you perform the "ruler-drop" lab from the Carolina™ Biology SPARKlabs collection. Developed jointly by PASCO and Carolina, this collection of 10 guided inquiry labs provides a standards-based, state-of-the-art science teaching solution to support your high school biology program. Additional labs from the collection will be demonstrated.

AP Chemistry Determination of the Rate of Reaction and Its Order (Chem)
(Grades 9–12) *133, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Get hands-on experience in AP Chemistry with PASCO's SPARKscience, a probeware-based modern approach to science teaching. Participants will perform a lab from the recommended AP list (Determination of the Rate of Reaction and Its Order) and additional labs will be demonstrated. Discover firsthand how your students can meet AP lab requirements and gain a deeper understanding of the required content.

Hunting Dengue and Other Viruses (Bio)
(Grades 9–College) *134, Moscone Center*
Sponsor: Howard Hughes Medical Institute
Keri Shingleton *(kshingleton@hollandhall.org)*, Holland Hall, Tulsa, Okla.
Find out how real virus hunters detect and fight emerging and re-emerging infectious diseases. Examples include dengue and the West Nile virus. Scientific data, case studies, and information about both simple and sophisticated technologies used in the lab and in the field bring cutting-edge biomedical research from the Howard Hughes Medical Institute to your students.

Scaffold Science Learning with Guided Inquiry and Differentiated Content-Literacy Instruction (Gen)
(Grades 3–8) *202/204, Moscone Center*
Sponsor: Millmark Education
Carla C. Johnson, University of Cincinnati, Ohio
Discover strategies to help all students learn standards-based science content and develop complex reasoning abilities while having fun doing engaging science investigations! Explore effective ways to scaffold critical thinking, including notebook strategies, questioning to generate rich classroom discussion, and strategies for developing literacy to help students read, write, and talk about science.

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 and use throughout the school year. **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!**

Journey to the Center of the Milky Way in 3-D: The Only Way to Go! (Earth)
(Grades 2–12) *256, Moscone Center*
Sponsor: Simulation Curriculum Corp.
Herb Koller *(hkoller@simcur.com),* Simulation Curriculum Corp., Aurora, Ont., Canada
Join us on the big screen as we travel to the center of the Milky Way and examine the Sun and our solar neighborhood. Using the *Starry Night* curriculum, we'll examine star clusters and the black hole at the center of the Milky Way and demonstrate the power of this amazing interactive curriculum.

All the Small Things: Teaching STEM with Digital Microscopes (Bio)
(Grades 6–12) *270/272, Moscone Center*
Sponsor: Science Kit
Ashley Goff, Science Kit, Tonawanda, N.Y.
Teaching STEM topics in life science just got a lot easier with the digital microscope. Learn the benefits of using a digital microscope to capture images, take videos, and measure objects. Put this knowledge to work as you perform six high school–level activities using a digital microscope. This is a *See One, Do One, Teach One* workshop that can easily be implemented in your classroom.

Stronger, New, and Improved Biotechnology: Science for the New Millennium (Bio)
(Grades 9–12) *274/276, 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.

Science Lessons Soar with AeroLab **(Phys)**
(Grades 6–12) *300, Moscone Center*
Sponsor: Academy of Model Aeronautics
Gordon Schimmel, Academy of Model Aeronautics, Muncie, Ind.
Engage your middle and high school students in the dynamics of flight by building simple foam and balsa model aircrafts. Teach your students about Newton's laws and centripetal force, and practice important math skills to determine average speed and acceleration. AeroLab lessons are geared to national and state science standards.

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!

What's New at Vernier? **(Gen)**
(Grades 7–College) *302, Moscone Center*
Sponsor: Vernier Software & Technology
Rick Sorensen *(info@vernier.com),* **Robyn Johnson** *(info@vernier.com),* and **Matt Anthes-Washburn** *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.
Come see our latest and greatest sensors, interfaces, and software developments. These include the LabQuest Mini computer interface, SpectroVis Plus spectrophotometer/fluorometer, Mini GC Gas Chromatograph, Wide-Range Temperature probe, Watts Up Pro power meter, Power Amplifier, and White Light Transilluminator.

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*.

NSTA
National Science Teachers Association

Get Charged Up with Educational Innovations! (Phys)
(Grades 5–9) *303, Moscone Center*
Sponsor: Educational Innovations, Inc.
Ken Byrne *(info@teachersource.com),* Educational Innovations, Inc., Norwalk, Conn.
Engage in fun activities with static electricity. Make your own Franklin static motor and discover a plethora of activities to get your class charged up. Door prizes!

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.

The Science Behind Climate Change: What Every Student (and Teacher) Should Know (Earth)
(Grades K–8) *305, Moscone Center*
Sponsor: Pearson
Michael E. Wysession, Washington University in St. Louis, Mo.
Join us as we discuss how to teach about climate and climate change in the K–8 classroom. Geosciences professor and Pearson author Michael Wysession will discuss plate tectonics, volcanism, sunlight, ocean circulation, cloud cover, atmospheric composition, the gravitational pull of the other planets, and other climate issues in a way that everyone can understand.

10:00 AM–12 Noon Meeting

AMSE Membership Meeting
(By Invitation Only) *Pacific F, Marriott*

10:00 AM–12 Noon Exhibitor Workshop

Flinn Morning of Chemistry: Macro Modeling Micro Matter (Chem)
(Grades 7–12) *135, Moscone Center*
Sponsor: Flinn Scientific, Inc.
Patti Duncan, Wallenpaupack Area High School, Hawley, Pa.
Have your students' bewildered expressions ever left you scratching your head and wondering, "Why don't they get it?" Many of today's students are concrete thinkers, requiring more visually oriented and literal explanations. This is a challenge when so many concepts taught in chemistry and physical science are abstract and difficult for students to understand if they can't actually "see it" happening. Patti Duncan will share her outstanding collection of demonstrations and activities proven to help today's students learn science. Patti takes the "micro" world of atoms and molecules and makes it visual and understandable. Bring your fellow science teachers to this must-see event. Macro-sized learning is guaranteed when you share these exciting activities with your students! Handouts will be provided.

10:10–10:40 AM Exhibitor Workshop

A "Space-tial" Perspective of Earth (Earth)
(Grades 6–12) *310, Moscone Center*
Sponsor: NASA Education
Bonnie Murray *(bmurray@vasc.org),* NASA Langley Research Center, Hampton, Va.
Study Earth through astronaut photography and satellite imagery. Using the Magic Planet, Blue Marble, EarthKAM, and Landsat imagery, participants will gain a perspective of why it is important to study Earth from space.

10:30–11:45 AM Exhibitor Workshop

Bio-Rad Light Up Your Classroom with pGLO™ Transformation (Bio)
(Grades 9–College) *308, Moscone Center*
Sponsor: Bio-Rad Laboratories
Leigh Brown *(biotechnology_explorer@bio-rad.com),* Bio-Rad Laboratories, Hercules, Calif.
What happens when you cross a jellyfish with *E. coli?* You can create your own pGLO green glowing bacteria! By the end of this workshop, you'll become an actual genetic engineer—modifying genes and transforming bacteria with the Green Fluorescent Protein (GFP) AP Biology Lab 6. Take home a free UV pen light and lab prep DVD!

10:30 AM–12 Noon Shell Science Seminar

Teaching Scientific Inquiry: Sorting Out the Particulars to Harmonize the Practices (Gen)

(General) *102, Moscone Center*

Richard A. Duschl *(rad19@psu.edu),* NARST Past President and Waterbury Chair Professor, Penn State University, University Park, Pa.

Presider: Antoinette "Toni" Schlobohm, NBCT *(anels@me.com),* Field Trips Coordinatior, NSTA San Francisco National Conference, and Ardenwood Elementary School, Fremont, Calif.

This presentation will examine the learning goals of "Science as Inquiry" and do so in the context of the National Research Council's report Taking Science to School and other policy documents that are advocating a reframing of science education around big ideas, learning progressions, and scientific practices. Research on science and mathematics learning and reasoning coupled with new naturalized views about the nature of science suggest the need to consider different models of curricula, instruction, and assessment. The talk will examine some of these models and will make the argument that close collaborative efforts between teachers and researchers will be needed to advance an R&D agenda around core science and math standards that align with diagnostic learning performance assessments.

Richard A. Duschl is the Waterbury Chaired professor of secondary education at the College of Education, Penn State University. His research focuses on advancing teacher education programs and on the design of learning environments that seek and promote collaborations among STEM education. Prior to Penn, he was the chair of Science Education at King's College London. He has also held academic appointments at Rutgers, the State University of New Jersey, Vanderbilt University, and the University of Pittsburgh. He also taught high school Earth science.

Duschl recently served as chair of the National Research Council research synthesis report "Taking Science to School: Learning and Teaching Science in Grades K–8." He was editor of the research journal Science Education *and for TC Press* Ways of Knowing in Science and Math *book series. His books include* Teaching Scientific Inquiry: Recommendations for Research and Implementation *and* Taking Science to School: Science Learning and Teaching Grades K–8.

NSTA is grateful to Shell for sponsoring this session.

10:30 AM–12 Noon Shell Science Seminar

Science, Evolution, and Creationism (Gen)

(General) *104, Moscone Center*

Eugenie C. Scott *(scott@ncse.com),* Executive Director, National Center for Science Education, Oakland, Calif.

Presider: Linda Woodward *(linda@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Claims are made that the various forms of creationism (creation science and intelligent design) are scientific, and that evolution is not. Similar claims are made that the evidence for evolution is poor, whereas the evidence for creationism is strong. What do scientists say about these claims? What should teachers teach when students, parents, or administrators make these contentions?

Dr. Eugenie C. Scott is executive director of the National Center for Science Education, Inc., a nonprofit membership organization of scientists, teachers, and others that works to improve the teaching of evolution and of science as a way of knowing. It opposes the teaching of "scientific" creationism and other religiously-based views in science classes.

A former college professor, Dr. Scott is an internationally-known expert on the creationism and evolution controversy and is called upon by the press and other media to explain science and evolution to the general public.

Scott has served as president of the American Association of Physical Anthropologists. The author of Evolution vs. Creationism: An Introduction *as well many articles in science journals and co-editor with Glenn Branch of* Not in Our Classrooms: Why Intelligent Design Is Wrong for Our Schools, *Scott is the recipient of numerous awards from scientists and educators and has been awarded eight honorary degrees.*

NSTA is grateful to Shell for sponsoring this session.

11:00 AM–12 Noon Presentations

SESSION 1

EcoSTARS: A Collaboration Between K–12 and Higher Education (Env)

(Elementary/College/Supervision) *Continental 3, Hilton*

Lori R. Maxfield *(lrmaxfield@stkate.edu),* St. Catherine University, St. Paul, Minn.

EcoSTARS is a unique collaboration between K–12 and higher education that is designed to enhance student and teacher learning in environmental education and STEM literacy.

SESSION 2

CSI: A FREE Online Adventure Game That Engages Students in Technology While Teaching Forensic Science (Gen)

(General) *Continental 6, Hilton*

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

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

Experience an award-winning FREE website developed with CBS and the American Academy of Forensics. Rookie training plus cases for students to solve!

SESSION 3

NSTA Press Session: SAFETY and LIABILITY: Is the Jury Out on Your Class? (Gen)

(General) *Continental 9, Hilton*

Kenneth R. Roy *(safesci@sbcglobal.net),* Glastonbury (Conn.) Public Schools

Explore critical safety strategies to protect yourself from legal issues when students do hands-on science.

SESSION 4

Online, Onboard, and On Target: Teaching Tips for Content Clips (Gen)

(Preschool–Elementary) *Golden Gate 2, Hilton*

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

Clarissa Reeson and **Tracey Allen,** REAL Educators, Biggs, Calif.

Presiders: Lois McLean and Rick Tessman

Classroom teachers share practical ideas for creating lessons and activities using the free Content Clips service *(www.contentclips.com),* online multimedia, and electronic whiteboards or projectors.

SESSION 5

Beyond Polar Bears: Helping Students Use Data to Understand Global Climate Change (Earth)

(Middle Level) *Golden Gate 5, Hilton*

Leigh Sturgess-Lace *(sturgess-lacek@edmonds.wednet.edu),* Alderwood Middle School, Lynnwood, Wash.

This unit, designed for middle school students, has students analyze data in the form of graphs, maps, and tables to understand what we know about global climate change. We'll share examples of student work, information on the resources used, and examples of classroom instruction.

SESSION 6

Noticing Nature Notebooks (Env)

(Elementary) *Golden Gate 7, Hilton*

Mary Beth Thomas *(thomas.marybeth@gmail.com),* Jackson Road Elementary School, Silver Spring, Md.

Melanie Zimmerman *(melanie_a_zimmerman@mcpsmd.org),* Strathmore Elementary School, Silver Spring, Md.

Kymberli Petronio *(kymberli_d_petronio@mcpsmd.org),* College Gardens Elementary School, Rockville, Md.

Leave no child inside! Make school and home connections to engage students through environmental notebooking. Free CD.

SESSION 7

NSTA Press Session: Teaching for Conceptual Change (Gen)

(General) *Golden Gate 8, Hilton*

Page Keeley *(pagekeeley@gmail.com),* 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

Richard Konicek-Moran *(konmor@comcast.net),* Retired Educator, Amherst, Mass.

Learn how two inquiry-based resources, *Every Day Science Mysteries* and *Uncovering Student Ideas in Science,* can be used to teach for conceptual change.

SESSION 8 (two presentations)
(Elementary–Middle Level) *Union Square 3/4, Hilton*
One Week Until the Test: Time to CRAM the SMART Way (Gen)
David M. Effron, Dominion Middle School, Columbus, Ohio
This five-day standardized testing CRAM session includes tips and tricks about the test, SMART Response interactive questions/answers, SMART Flash and Lesson Activity Toolkit, science graphs and figures, agenda and expectations, and motivation with announcements.

How to Use Science Journals to Assess Student Learning (Gen)
Grahme Smith *(gsmith@calacademy.org),* **Sarah Delaney** *(sdelaney@calacademy.org),* and **Emily Harris** *(eharris@calacademy.org),* California Academy of Sciences, San Francisco
Science journals are the most authentic tool for understanding what students are learning and thinking. Learn how to use journals, rather than tests, to assess student learning.

SESSION 9
Tricks of the Trade: Differentiation Strategies for Science Vocabulary and Content (Gen)
(Elementary–Middle Level/Supv) *Union Square 5/6, Hilton*
Sally Creel *(sally.creel@cobbk12.org),* Cobb County Schools, Marietta, Ga.
Explore several simple strategies to help teach and formatively assess students using fun, nontraditional methods. Take home a CD with materials, resources, and sample assessments.

SESSION 10
Join an NSTA Journal Review Panel (Gen)
(General) *Union Square 14, Hilton*
Ken Roberts *(kroberts@nsta.org),* Assistant Executive Director, Journals, NSTA, Arlington, Va.
Learn how to apply to serve on an NSTA Journal review panel and to navigate Manuscript Central, NSTA's online submission and review system.

SESSION 11
ASTE Session: Enhancing Technological Literacy Through Engineering Design in the Elementary Science Classroom (Gen)
(Elementary) *Union Square 17/18, Hilton*
Nancy Tyrie *(ntyrie@lsc.k12.in.us),* Vinton Elementary School, Lafayette, Ind.
Brenda M. Capobianco *(bcapo@purdue.edu),* Purdue University, West Lafayette, Ind.
Discover innovative ways to integrate standards-based, interdisciplinary engineering learning activities in grades 3–5 science classrooms. Handouts provided.

SESSION 12
NSELA Session: It's All About the "Right" Questions, Not the "Right" Answers (Gen)
(General) *Union Square 21, Hilton*
Gail G. Hall, Vermont Dept. of Education, Montpelier
Trudy Fadden, Blue Mountain Union School, Wells River, Vt.
How can students make deep cognitive connections with science content? This workshop provides examples of questioning that engage students in meaningful reflection, discourse, and discussion.

SESSION 13
This Workshop Is So Gay! (Gen)
(General) *Union Square 22, Hilton*
Rochelle L. Lofstrand *(rlofstrand@gmail.com),* Decatur High School, Decatur, Ga.
Andrew M. Milbauer, Conserve School, Land O' Lakes, Wis.
Presider: Kim Loomis, Kennesaw State University, Kennesaw, Ga.
What does science have to say about homosexuality in wild animals and in humans? What does all this mean for science teachers? How do we teach effectively in diverse classrooms?

SESSION 14
NMLSTA Session: Rube Goldberg: The Ultimate STEM Assessment (Phys)
(Elementary–High School) *Union Square 25, Hilton*
Steve Fielman *(sfielman@verizon.net),* Ichabod Crane Middle School, Valatie, N.Y.
Presider: Fred Pidgeon *(caste5@aol.com),* STANYS Vice President, Rensselaer, N.Y.
Challenge your students to the ultimate STEM project. The world of Project Based Learning is the key to exploring the highest levels of Bloom's taxonomy!

SESSION 15

Beyond the pH Meter: Using Technology to Overcome Student Misconceptions in Acid-Base Chemistry (Chem)

(High School–College) *Yosemite A, Hilton*

Cara L. Hale-Hanes *(chemexplorer@aol.com),* Long Beach Polytechnic High School, Long Beach, Calif.

Teaching chemistry using new technology allows students to visualize the atoms in the reaction. This approach is used in an acid base unit that incorporates virtual and conventional labs as well as technology to enhance analysis of conventional labs.

SESSION 16

Twelve Years of Change in the Science Classroom—From Lecture to Moodleoogleikiogcasting (Gen)

(High School) *Golden Gate Salon B, Marriott*

Jesse M. Craig *(jcraig@lps.k12.co.us),* **Brian Hatak** *(bhatak@lps.k12.co.us),* and **Jeff Smith** *(jsmith@lps.k12.co.us),* Arapahoe High School, Centennial, Colo.

See how Arapahoe High School changed from a teacher-centered environment to a student-centered environment using Moodle, Google, wikis, blogging, and podcasting.

SESSION 17

SYM-2 Follow-Up Session: How EPA Communicates with the Public on the Climate Change Issue (Env)

(General) *Golden Gate Salon C2, Marriott*

Karen Scott *(scott.karen@epa.gov),* U.S. Environmental Protection Agency, Washington, D.C.

EPA will demonstrate a variety of tools used to inform the public about the climate change issue.

SESSION 18

NASA Explorer Schools: Preparing the Next Generation of Explorers (Gen)

(Middle Level–High School/Supervision) *Pacific B, Marriott*

Cathy Graves, NASA Glenn Research Center, Cleveland, Ohio

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

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

SESSION 19

Activities, Labs, and Demos for Your Oceans Unit (Earth)

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

Daniall R. Poulsen *(dpoulsen@portageps.org)* and **Donna M. Hertel** *(dhertel@portageps.org),* Portage Northern High School, Portage, Mich.

These Earth system activities, labs, and demos focus on currents, density, salinity, unequal heating, upwelling, downwelling, and ocean ecology.

SESSION 20 (two presentations)

(Middle Level–College) *Pacific I, Marriott*

Using Multiple-Choice Exams to Test Much More Than Just Facts (Bio)

Jim Clark, Brian Fredin *(brianfredin@hotmail.com),* **Debbie Clark** *(dclark@slzusd.org),* and **Selina Mandel** *(smandel@slzusd.org),* Arroyo High School, San Lorenzo, Calif.

Here are some tips for designing multiple-choice exams that assess students' understanding of scientific concepts and explanations. These strategies have transformed our instruction.

Collaborative Learning with WikiSpaces and MyStuDIYo (Bio)

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

Engage all learners and enhance communication between classmates, teachers, and even beyond the classroom. Learn how easy it is to use WikiSpaces and MyStuDIYo.

SESSION 21 (two presentations)

(Middle Level–High School) *Sierra I, Marriott*

Eat It! Edible Science Labs (Gen)

John D. Vaden *(vadenj@rcs.k12.tn.us)* and **Lee Ann Richardson** *(richardsonl@rcs.k12.tn.us),* Riverdale High School, Murfreesboro, Tenn.

Discover an innovative means of presenting various science concepts such as freezing point depression, DNA, and others using food.

Measuring and Modeling Ancient and New Pollen (Gen)

James H. Wandersee, Louisiana State University, Baton Rouge

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

This tested bio-geo inquiry project starts with taking and measuring images of real pollen grains and is followed by model-making and investigative activities.

SESSION 22

PDI **BSCS Pathway Session: Can Supportive Instructional Materials Increase the Use of Best Practices in Science Teaching? (Gen)**

(Middle Level–High School) *Yerba Buena Salon 2, Marriott*

Steve Getty, BSCS, Colorado Springs, Colo.

Examine differences in best teaching practices between two groups of teachers randomly assigned to have either supportive instructional materials or not.

SESSION 23

PDI **SEPUP Pathway Session: How Media Literacy Influences Thinking About Socio-scientific Issues (Gen)**

(General) *Yerba Buena Salon 4, Marriott*

Joanie Gillispie *(drjoanie@hotmail.com),* Berkeley City College, Berkeley, Calif.

Maxine Einhorn *(meinhorn@kqed.org),* KQED Public Media, San Francisco, Calif.

Presider: Joanie Gillispie.

Join us for a discussion on media literacy and its role in helping students engage in the study of science. Attention will be paid to how Science Education for Public Understanding Program (SEPUP) uses socio-scientific issues to develop critical thinking skills necessary for understanding important 21st-century problems.

SESSION 24 (two presentations)

(Middle Level–High School) *Yerba Buena 8/Group 2, Marriott*

Teacher Researcher Day Session: Our Process of Letting Go: The Impact of Student Inquiries with a Model of the Cell Membrane (Bio)

Liesl M. Hohenshell *(hohenshl@uww.edu),* **Andrea A. Kornowski,** and **Lynn A. Smith,** University of Wisconsin, Whitewater

Learn how we implemented an inquiry approach on molecular movement and the impact this had on students' learning and scientific habits of mind.

Teacher Researcher Day Session: Translating Evolutionary Biology Research into Inquiry-based Learning Experiences in High School Science Classrooms (Bio)

Lauren K. Lucas *(llucas5@uwyo.edu)* and **Zach Gompert** *(zgompert@uwyo.edu),* University of Wyoming, Laramie

William Medina-Jerez *(wmedinaj@hotmail.com),* The University of Texas at El Paso

Learn how to translate scientific research in evolutionary biology, genomics, and computational biology into inquiry-based experiences for the high school biology classroom.

SESSION 25 (two presentations)

(General) *Yerba Buena Salon 8/Group 3, Marriott*

Teacher Researcher Day Session: Enhancing Student Talk in Science Through Blended Professional Development (Gen)

Lauren M. Shea *(lshea@uci.edu)* and **Terry B. Shanahan,** University of California, Irvine

Successfully combining science and language learning strategies is an ongoing process for teachers. Hear how teachers continue their learning through a blogging forum.

Teacher Researcher Day Session: Using Blogs to Motivate Students and Improve Their Critical-thinking Skills (Gen)

Arpa Ghazarian, The Mirman School, Los Angeles, Calif.

Find out how using a scientific literacy blog in your middle school science classroom can improve students' critical-thinking skills and motivation.

SESSION 26

Teacher Researcher Day Session: Action Research as Advanced Professional Development for Experienced Middle School Science Teachers (Gen)

(General) *Yerba Buena Salon 8/Group 4, Marriott*

Carole P. Mitchener *(cmitchen@uic.edu),* University of Illinois, Chicago

Wendy M. Jackson *(wjackso7@depaul.edu),* DePaul University, Chicago, Ill.

Misty J. Richmond *(mjrichmond@cps.edu),* Agustin Lara Academy, Chicago, Ill.

Chris Layton *(calayton@cps.edu),* Madero Middle School, Chicago, Ill.

See how we designed, facilitated, and carried out a yearlong action research project as a third level of professional development in a large urban school district.

SESSION 27

Informal Science Day Session: Hooking Kids with Haunted Physics (Phys)

(General) *Yerba Buena Salon 9/Group 1, Marriott*

Patricia Sievert *(psievert@niu.edu),* Northern Illinois University, DeKalb

Use a Halloween-themed event to entice young people to campus to explore science through interactive displays of physics concepts created by you and your students.

SESSION 28 (two presentations)
(General) *Yerba Buena Salon 9/Group 2, Marriott*

Informal Science Day Session: School Field Trips—What Do the Kids Experience? (Gen)

Rita Bell *(rbell@mbayaq.org),* Monterey Bay Aquarium, Monterey, Calif.

Chris Parsons *(cp@word-craft.com),* Word Craft, Monterey, Calif.

In 2009, Monterey Bay Aquarium launched an extensive cross-comparative evaluation of our three different school field trip programs: classroom, auditorium, and self-guided. Find out what we learned!

Informal Science Day Session: Science Museums and Teacher Professional Development: A Unique Program Integrating Science and Sustainability (Env)

Meg Burke, California Academy of Sciences, San Francisco

Learn about design, implementation, and evaluation of an innovative teacher professional development program, which integrates concepts of science and sustainability for third- and fifth-grade teachers.

SESSION 29

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

(Middle Level–High School) *Yerba Buena Salon 15, Marriott*

Sherri Conn Rukes *(scrukes@comcast.net),* Libertyville High School, Libertyville, Ill.

Learn how to make various cosmetics as well as the polymer science behind them. Handouts and samples.

SESSION 30

NSTA Avenue Session: Online Professional Development: Research on Teacher Perceptions, Learning Preferences, and Learning Outcomes for Self-directed NSTA Web Courses (Gen)

(General) *113, Moscone Center*

Al S. Byers *(abyers@nsta.org),* Assistant Executive Director, e-Learning and Government Partnerships, NSTA, Arlington, Va.

Greg Sherman *(gsherman2@radford.edu),* Assistant Professor of Educational Technology, Radford University, Radford, Va.

Kristine Chadwick *(krisine.chadwick@edvantia.org),* Executive Director, Center for Research & Evaluation Services, Edvantia, Inc., Charleston, W.Va.

Learn which features of on-demand, self-directed online PD are of greatest import, satisfaction, and learning value from a sample of elementary science teachers (grades 3–6).

SESSION 31

Teaching Techniques Kids Don't Want You to Know (Gen)

(General) *200, Moscone Center*

Judy Weber *(weber_judy@yahoo.com),* Time to Teach, Laguna Niguel, Calif.

These common sense, research-based techniques enable teachers to control the classroom environment and ensure more time for teaching.

SESSION 32

What Difference Do All of These Questions Make Anyway? (Gen)

(General) *208/210, Moscone Center*

Gisell Bacerra, Rhonda Newton, Andrea L. Valdovinos, and **Kathryn LeRoy** *(leroyk@duvalschools.org),* Duval County Public Schools, Jacksonville, Fla.

Presider: Kathryn LeRoy

Learn how to achieve successful science inquiry by using scaffolded questions to bridge an investigation to its content. Sample lesson included.

SESSION 33

Making the Water Cycle Real: A Journey from the School Yard to the Ocean (Earth)

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

Joshua D. Roberts *(joshua.roberts@dpsnc.net)* and **Sam I. Fuerst** *(sam.fuerst@dpsnc.net),* Northern High School, Durham, N.C.

Presider: Sherrod L. Basnight, Northern High School, Durham, N.C.

Do a detailed analysis of the drainage basin that is your school yard, then use internet resources to follow the water's path to the ocean.

SESSION 34

Developing a Community of Young Scientists (Gen)

(General) *224/226, Moscone Center*

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

Hear how an elementary school with a large English language learner population uses science as a vehicle for language development.

SESSION 35

Creating Scientific Drawings and Recordings with Kindergartners (Gen)

(Preschool–Middle Level/Informal) 228/230, Moscone Center

Andrea Z. Andretta *(aandretta5@optonline.net),* Jefferson Science Magnet School, Norwalk, Conn.

Zackery Zdinak *(wildlife@lifedraw.com),* Life Drawing & Education, Flagstaff, Ariz.

Learn how to guide kindergarteners in drawing animals, plants, and even a nature scene.

SESSION 36

ISTE: Bringing Together STEM, Language Arts, and Global Awareness (Gen)

(General) 232/234, Moscone Center

Sara Armstrong *(saarmst@telis.org),* Sara Armstrong Consulting, Berkeley, Calif.

Presider: Ben Smith *(ben@edtechinnovators.com),* ISTE/Red Lion (Pa.) Area School District

Come learn about the MY HERO Project, in which you and your students can find stories and short films about STEM heroes. This free extensive resource includes lesson ideas about what it means to be heroic—making small and large differences in our lives.

SESSION 37

Okay, You Have Laptops…Now What? (Gen)

(Supervision/Administration) 250, Moscone Center

Ann C. Mulvihill *(amulvihill@irvingisd.net),* Irving (Tex.) Independent School District

Explore an interactive and engaging technology resource for science teachers and students. Gizmos are a research-based tool that presents science concepts in a graphic/nonlinguistic format.

SESSION 38

Reading, 'Riting, and Reasoning—A Student-centered Approach to Developing Science Literacy (Gen)

(High School) 252/254, Moscone Center

Kenna L. Heitman *(kennaheitman@elsberry.k12.mo.us),* Elsberry High School, Elsberry, Mo.

Minimize teaching and maximize learning with this high-interest, low-cost approach. Students actively explore, discuss, and report their own research. Compatible with any science curriculum.

SESSION 39

Teaching Without Points or Percentages: A Look at Alternative Grading (Gen)

(High School) 258/260, Moscone Center

Kathleen R. Markiewicz *(kmarkiewicz@gmail.com),* Boston Latin School, Boston, Mass.

I have reworked my grading system to focus on student understanding, behavior, and collaboration. We'll look at the pros and cons.

SESSION 40

Improving Literacy and Science Process Skills Through the Effective Use of Lab Notebooks (Gen)

(Elementary–High School) 262, Moscone Center

Katie L. Anderson, Nicole Keegan, Jannette Moehlman, and **Tara Knowlton,** Dakota Middle School, Rapid City, S.Dak.

Help students create their own resources. Creating lab notebooks encourages literacy and promotes inquiry in the science classroom.

11:00 AM–12 Noon Workshops

Frontiers in Genomics (Bio)

(High School–College) Continental 1, Hilton

Bruce Nash *(nash@cshl.edu)* and **Jason Williams** *(williams@cshl.edu),* Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.

Expand your biology instruction from teaching DNA basics and recombinant technology in prokaryotes to include the exciting world of eukaryotic genomics.

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

(Elementary) Continental 7, Hilton

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

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

Light-Ups and Sound-Offs! Controlling Light and Sound with Hidden Switches (Phys)
(Elementary) *Golden Gate 3, Hilton*
Gary Benenson *(benenson@ccny.cuny.edu),* City College of New York, N.Y.
Cherubim Cannon *(cherubimcannon@aol.com),* P.S. 005 Dr. Ronald McNair, Brooklyn, N.Y.
Alberto Camacho, P.S. 42, Claremont Community School, Bronx, N.Y.
Presider: Alberto Camacho
Make a simple pop-up card or box that can operate a switch—then add a circuit that makes a light or buzzer come on unexpectedly!

ACS Middle School Chemistry: Big Ideas About the Very Small (Chem)
(Middle Level) *Golden Gate 4, Hilton*
James H. Kessler *(jhkessler@acs.org),* American Chemical Society, Washington, D.C.
Try hands-on activities from the American Chemical Society's (ACS) new free middle school chemistry resource *(http://middleschoolchemistry.com).* Use simple, inexpensive materials and molecular animations to explore and explain different aspects of physical and chemical change. Take home a handout of all activities.

The Gardening Cure for Nature Deficit Disorder (Env)
(Preschool–Elementary) *Golden Gate 6, Hilton*
Mary K. Leveron *(mleveron@brazosportisd.net),* Velasco Elementary School, Freeport, Tex.
Katherine A. Eckermann *(keckermann@wallerisd.net),* Fields Store Elementary School, Waller, Tex.
David Martinez *(davidemartinez@katyisd.org),* McRoberts Elementary School, Katy, Tex.
Learn to garden without breaking the ground and fund your project by selling stepping stones made by children. Take home your own seeds to get started.

Building Strong Roots for Family STEM Supports (Gen)
(General) *Union Square 15/16, Hilton*
Katie A. McDilda *(katie.mcdilda@marshall.edu)* and **Jenny Nash** *(jennynash7@gmail.com),* Marshall University, Huntington, W.Va.
STEM experiences root children in the joy of science and exploration. Learn how to create inviting, informative, and interesting Family Science Nights.

Make It, Move It, and Take It Home (Gen)
(Elementary–High School) *Union Square 19/20, Hilton*
Shauneen Giudice *(sgiudice@comcast.net),* Delmar Middle School, Delmar, Del.
Make manipulative graphic organizers and dice games that build language and literacy skills, foster critical thinking, and support science learning at all levels.

Using Vocabulary Strategies to Maximize Students' Learning in Science (Gen)
(General) *Union Square 23/24, Hilton*
Sandra Yellenberg *(sandra_yellenberg@sccoe.org)* and **Yee Wan** *(yee_wan@sccoe.org),* Santa Clara County Office of Education, San Jose, Calif.
Here are some easily transferable strategies for teaching all students to successfully learn both science concepts and academic language.

Building Your Science Program with Robots (Phys)
(General) *Golden Gate Salon A, Marriott*
David C. White, Pasadena Memorial High School, Pasadena, Tex.
Raise interest in your science classroom by building robots. We'll show you how to use them in your teaching.

Your School's FlexCam Belongs in the Physics Lab (Phys)
(Middle Level–High School) *Nob Hill C, Marriott*
David P. Beier *(dbeier@barstowschool.org),* The Barstow School, Kansas City, Mo.
Discover dozens of uses for your school's FlexCam in your physical science and physics classroom. Your biology department will never even miss it. FREE discs of 75 video clips.

Engineering Design Challenge: Feel the Heat (Gen)
(Middle Level–High School) *Nob Hill D, Marriott*
Brandon M. Hargis *(brandon.hargis@nasa.gov),* NASA Langley Research Center, Hampton, Va.
Anthony Leavitt *(anthony.d.leavitt@nasa.gov),* NASA Ames Research Center, Moffett Field, Calif.
Lester Morales *(lester.morales@nasa.gov),* NASA Education Aerospace Education Service Project, Kennedy Space Center, Fla.
Presider: Brandon M. Hargis
Using common materials, design and build a solar water heater to increase the temperature of water by the largest amount.

DuPont Presents—The Science of Packaging (Gen)
(Middle Level–High School) *Pacific A, Marriott*
Tim D. Dalby *(tdalby@wilmingtonfriends.org),* Wilmington Friends School, Wilmington, Del.
Mike Fitzgerald *(mfitzgerald@doe.k12.de.us),* Delaware Dept. of Education, Dover
Presider: Peggy Vavalla, DuPont, Wilmington, Del.
This workshop will introduce participants to polymers and how they impact our lives. We will investigate and test properties of various polymers to determine the best ones for various packaging needs.

Chemical Nomenclature Rummy (Chem)
(Middle Level–High School) *Pacific J, Marriott*
Mark D. Greenman *(mgreenman2@verizon.net),* National Science Foundation, Arlington, Va.
Harriet T. Page, Marblehead (Mass.) Public Schools
Students use a fun rummy-like card game to learn about formation of ionic compounds, rules for ion combinations, and naming ionic compounds.

Classroom Connections to Our Sun, Our Atmosphere, and Satellites: Why Space Weather Matters (Earth)
(Middle Level–High School) *Walnut, Marriott*
Mary L. Urquhart *(urquhart@utdallas.edu)* and **Marc R. Hairston** *(hairston@utdallas.edu),* The University of Texas at Dallas, Richardson
Presider: Greg Earle, The University of Texas at Dallas, Richardson
The layers of our atmosphere, where space begins, and our dynamic Sun are all connected to weather that affects us here on Earth.

Outstanding Science Trade Books: Connections to Reality by Presidential Awardees (Gen)
(General) *Yerba Buena Salon 7, Marriott*
Kathleen B. Horstmeyer, Chester, Conn.
Peggy Carlisle *(pjcarl@aol.com),* Pecan Park Elementary School, Jackson, Miss.
Helen Chang *(helenchang47@gmail.com),* Millstone River School, Plainsboro, N.J.
Conni Crittenden, Williamston Explorer Elementary School, Williamston, Mich.
Linda Froschauer *(crittec@gmail.com),* 2006–2007 NSTA President, Westport, Conn.
Tina M. King *(tinakingtn@gmail.com),* Einstein Fellow, National Science Foundation, Arlington, Va.
Karon Massado *(karon.massado@redclay.k12.de.us),* Red Clay Consolidated School District, Wilmington, Del.
Alma S. Miller, Langdon Education Campus, Washington, D.C.
Ruth Ruud *(ruth.ruud@yahoo.com),* Fairview, Pa.
Martha Short *(mshort@ldd.net),* Show-Me Professional Development, Jackson, Mo.
Presidential Awardees will present the outstanding science trade books selected by the CBC/NSTA committee and demonstrate connections to the real world through inquiry and hands-on and standards-based activities.

Informal Science Day Session: Teaching Astronomy with Small Telescopes in Informal Settings (Earth)
(General) *Yerba Buena Salon 9/Group 4, Marriott*
Robert T. Sparks *(rsparks@noao.edu)* and **Stephen M. Pompea** *(spompea@noao.edu),* National Optical Astronomy Observatory, Tucson, Ariz.
Learn how to assemble and use a small telescope to recreate Galileo's historic observations. All attendees receive a free Galileoscope and other teaching materials.

PDI

ELL Pathway Session: Science for ELL: Modifications to SIOP for Inquiry Instruction (Gen)
(General) *Yerba Buena Salon 10, Marriott*
David T. Crowther *(crowther@unr.edu),* **Bernadette Leonis** *(boscoblast@yahoo.com),* and **Elisa Stocke** *(elisa@unr.edu),* University of Nevada, Reno
Erin Tibbs, Bailey Charter School, Sparks, Nev.
The Sheltered Instruction Observation Protocol (SIOP) Model was developed to facilitate high-quality instruction for ELL students. Modifications to SIOP for inquiry instruction in science include tiered/blended vocabulary, background building, and scaffolding inquiry.

STEM in Action: The Bridge to the Real World (Earth)
(Elementary–High School) *Yerba Buena Salon 11, Marriott*
Barry Fried *(bfried@schools.nyc.gov)* and **Honora Dash** *(hdash@schools.nyc.gov),* John Dewey High School, Brooklyn, N.Y.
Engage students in the learning process by providing authentic science experiences through design projects, competitions, and live-data analysis.

STEM, Alternative Energy, and Urban Middle School Learners (Env)

(Middle Level–College/Inf) Yerba Buena Salon 12/13, Marriott

Herbert D. Thier *(thier@berkeley.edu),* University of California, Berkeley

Presider: Kevin Cuff, Lawrence Hall of Science, University of California, Berkeley

Learn how to reconstruct middle school science for urban learners. Experience the NSF-sponsored Community Oriented Science Project (COSE).

Going Beyond 1-2-3: Successful Grouping Strategies (Gen)

(Middle Level–High School) 111, Moscone Center

Angela B. Caylor *(angela.caylor@cobbk12.org),* McEachern High School, Powder Springs, Ga.

Do you want to form collaborative groups that actually function? These differentiated grouping strategies can be used easily and effectively in any classroom.

Using Technology in Field Experiences in Science (Gen)

(Elementary–High School) 112, Moscone Center

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

We'll look at the use of technology to collect and analyze data during field experiences in wetlands, estuaries, and scrub habitat and how to "transport" from the classroom to the field.

Get Wired Using the Simple Circuit Board (Gen)

(Elementary–High School) 212, Moscone Center

Michael H. Suckley *(dr.suckley@sciencescene.com),* Macomb Community College, Warren, Mich.

Paul A. Klozik, MAPs Co., Fraser, Mich.

Construct a circuit board while exploring series and parallel circuits. Use your board to learn about conductors, insulators, circuits, fuses, diodes, and everyday applications.

NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (Earth)

(Elementary–High School) Meeting Rm. 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.

Lynn S. Blaney and **Robert J. Myers,** IGES, Arlington, Va.

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

Todd Ellis *(ellistd@oneonta.edu),* SUNY College at Oneonta, N.Y.

Ron Fabich *(rwfabich@gmail.com),* NESTA, Medina, Ohio

Peter Falcon *(pcfalcon@jpl.nasa.gov),* Jet Propulsion Laboratory, Pasadena, Calif.

Pamela Harman, SETI Institute, Mountain View, Calif.

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

Liesl Hotaling, Centers for Ocean Sciences Education Excellence, Highlands, N.J.

Leesa Hubbard *(leesa@sallyridescience.com),* Sally Ride Science, San Diego, Calif.

Heather Hyre *(hhyre@ametsoc.org)* and **Kira Nugnes** *(knugnes@ametsoc.org),* American Meteorological Society, Washington, D.C.

Teresa Kennedy and **Nan McClurg,** The GLOBE Program, Tyler, Tex.

Bob King *(bobkingnesta@gmail.com),* Arlington, Va.

Eric Muller *(emuller@exploratorium.edu),* Exploratorium, San Francisco, Calif.

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

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

Carole Reesink *(creesink@bemidjistate.edu),* Bemidji State University, Bemidji, Minn.

Deanna Tebockhorst *(deanna@atmos.colostate.edu),* Colorado State University, Loveland

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

Presider: Michelle C. Harris

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

11:00 AM–12 Noon Exhibitor Workshops

Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Chemistry Classroom (Chem)

(Grades 9–12) *110, Moscone Center*

Sponsor: Texas Instruments

Todd D. Morstein *(morsteint@sd5.k12.mt.us),* Glacier High School, Kalispell, Mont.

Take data collection to a new level with the latest Texas Instruments/Vernier data collection solution for TI-Nspire technology. Learn how TI-Nspire technology can enhance inquiry learning using data collection, assessment, and simulation. Observe student progress through chemistry lessons and labs in real-time with the TI-Nspire Navigator™ system.

Improving Standardized Test Scores with Engaging Learning Systems for Middle and High School Students (Gen)

(Grades 7–12) *236/238, Moscone Center*

Sponsor: Fisher Science Education

Kurt Gelke, New Path Learning, LLC, Victor, N.Y.

Experience how game-based learning reinforces key concepts and helps middle and high school students prepare for standards-based tests. Multifaceted games are perfect for individual or group learning—the digital version allows the entire class to participate and is ideal for differentiated instruction, after-school programs, and parental involvement programs. These game-based learning systems won a 2009 Teachers' Choice Award in *Learning* Magazine. Take home samples of the Curriculum Mastery Games for use in your classroom.

Coordinated Science: Physical, Earth, and Space Sciences (Earth)

(Grades 9–12) *307, Moscone Center*

Sponsor: It's About Time

Glenda Pepin, Clemson University, Clemson, S.C.

This curriculum challenges students and introduces them to the scientific concepts and processes in Active Physics, Active Chemistry, and EarthComm in a student-friendly approach. Find out what makes this curriculum unique and how it works. Leave with a practical hands-on activity that your students will find engaging, meaningful, and relevant to their lives.

11:00 AM–2:00 PM Exhibitor Workshop

Lunch and Learn: Discover a New Inquiry Program for Secondary Schools (Gen)

(Grades 6–10) *122, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Be the first to see what's new. Explore the new STC PROGRAM for Secondary Schools from the National Science Resources Center and the Smithsonian Institution. Participants will lunch with the program developers and explore the new materials through hands-on activities for dessert. Tickets available at the Carolina Biological booth.

12 Noon–12:30 PM Presentation

SESSION 1

Teacher Researcher Day Session: The Science Inquiry Group Network (Gen)

(General) *Yerba Buena Salon 8, Marriott*

Emily H. van Zee, Oregon State University, Corvallis

Join the conversation about ways to inquire into science learning and teaching.

12 Noon–12:50 PM Exhibitor Workshop

Future of STEM Education (Gen)

(Grades K–12) *310, Moscone Center*

Sponsor: NASA Education

Dennis Bushnell *(dennis.m.bushnell@nasa.gov),* NASA Langley Research Center, Hampton, Va.

A way to affordably make the difference in STEM education that this administration rightly perceives is necessary is to shift from technology in the classroom to technology IS THE CLASSROOM, which is enabled by rapidly developing IT technology and driven by a quest for excellence.

12 Noon–1:15 PM Exhibitor Workshops

FOSS and DSM Kit Refurbishment/Material Management (Gen)
(Supervision/Administration) *123, Moscone Center*
Sponsor: Delta Education/School Specialty Science
Kyle Gibson, Delta Education/School Specialty Science, Nashua, N.H.
Science kit materials management is a significant challenge for many districts. Our Delta Science Resource Service (DSRS) is a cost-effective way to manage your science kit program. A teacher's valuable time is better spent teaching science versus chasing science materials. So join us to learn how DSRS can benefit your science program.

Educational Science Lab Design and Implementation for the 21st Century Made Easy (Gen)
(Grades K–12) *124, Moscone Center*
Sponsor: Frey Scientific/School Specialty Science
John Flockenzier and **Gordon Strohminger,** Frey Scientific/School Specialty Science, Mansfield, Ohio
Explore the process of designing and implementing educational science labs. See how technology and room design can push conventional boundaries to help students better understand science concepts. Open discussions will include the lab design process, furniture and equipment basics, safety and accessibility, integration of technology, and 21st-century trends.

12 Noon–1:30 PM Exhibitor Workshops

Genetics with *Drosophila* (Bio)
(Grades 9–12) *120, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
This workshop covers the basics of working with *Drosophila* through hands-on activities. Gain experience in anesthetizing fruit flies, identifying male and female flies, recognizing commonly used mutants and comparing them to wild-type flies, setting up new cultures of flies, and making crosses using Carolina's Easy Fly™*Drosophila.*

Carolina's Young Scientist's Dissection Series (Bio)
(Grades 5–8) *121, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Carolina's Young Scientist's Dissection Kits provide introductory-level activities for earthworm, crayfish, grasshopper, starfish, perch, and frog. Using instructions provided, participants locate and identify external and internal features and gain understanding of the animals, as well as the relationship of structure to function. Kits address National Standards, Grades 5–8, Life Science.

Teaching About Gene Expression (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 genetics unit, participants use model chromosomes to explore how genes are "turned off and on" by transcription factors.

Charles's and Boyle's Laws Uncovered with CPO's Gas Laws Kit (Phys)
(Grades 5–12) *131, Moscone Center*
Sponsor: CPO Science/School Specialty Science
Patsy Eldridge, CPO Science/School Specialty Science, Nashua, N.H.
Are pressure, volume, and temperature related? Use CPO Science's DataCollector, temperature probes, pressure sensors, and reliable lab equipment from our Gas Laws Kit to take real-time measurements and digitally log data while viewing on-screen graphs to uncover how Charles's and Boyle's laws explain gas laws through hands-on discovery activities.

Tough Topics in Physics and Physical Science: Motion (Phys)
(Grades 9–12) *132, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Explore the differences between speed and velocity in this hands-on, probeware-based workshop featuring PASCO carts and the new PAStrack. We'll use one of PASCO's standards-based SPARKlabs to improve student understanding of motion, a foundation topic in the study of physics and physical science. Additional activities will be demonstrated.

Get LEGO® Smart™!

Find out how to bring creativity and Innovation to the classroom in Booth 1929!

Learn how to inspire students to explore simple and motorized machines and the world of robotics. See engaging ways to meet science standards with LEGO Education:

- Participate in one or more of our in-booth, hands-on workshops: LEGO Education **We**Do™ Robotics, Going Green with Simple and Motorized Mechanisms, and Getting Started with Robotics.
- Experience a motivating approach to teaching with LEGO® SERIOUS PLAY™.
- Attend the Hands-On Elementary Science with LEGO Education session March 12, 12:00 - 1:30.
- Stop by the NSTA District Meet and Greet in Honor of Wendell G. Mohling, Friday, March 11, 2:00 p.m. - 3:30 p.m. in the Exhibit Hall. Light refreshments will be provided.

LEGO education

Visit us at booth 1929

www.LEGOeducation.us

Tough Topics in Earth Science: Greenhouse Gases (Env)

(Grades 9–12) *133, Moscone Center*

Sponsor: PASCO Scientific

Presenter to be announced

Tackle one of the toughest Earth science investigations—the greenhouse effect. In this standards-based SPARKlab from PASCO, you will collect and analyze data from a model atmospheric "greenhouse" and explore the role played by human-made gases (chlorofluorocarbons), all while experiencing how SPARKscience can enhance your teaching practice and improve student understanding.

Teaching Viruses, Disease, and Immunology 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

Enhance your classroom instruction of cellular biology, viruses, immunology, HIV/AIDS, and other infectious diseases with teacher-ready curriculum ideas using free HHMI resources, including DVDs and the *BioInteractive.org* website. Participants will receive free DVDs, teacher-generated curriculum guides, and classroom-ready activities.

Using Math and Science as the "New Literacy" to Enhance Achievement for At-Risk Students (Gen)

(Grades 4–9) *202/204, Moscone Center*

Sponsor: The JASON Project/Immersion Learning/Nautilus Live

Peter Haydock *(info@jason.org),* The JASON Project, Ashburn, Va.

The JASON Project, Immersion Learning, and Nautilus Live use multimedia science curricula to teach problem-solving, communication, and critical-thinking skills—all essential areas for student learning and achievement. Learn how to use these technology-rich programs to engage struggling learners and inspire them to pursue careers in science, technology, engineering, and math.

Siemens STEM Academy: Top 10 STEM Resources (Gen)

(Grades K–12) *206, Moscone Center*

Sponsor: Discovery Education

DEN Team Member

How can you better integrate STEM in your curriculum? Explore 10 great websites that will help you get started in making STEM a part of your classroom every day. Walk away with all the tools and resources you need to spark your students' interest in science, technology, engineering, and math.

The Magnetic Attraction of Inquiry: Transforming Science Instruction (Gen)

(Grades K–5) *256, Moscone Center*

Sponsor: National Geographic School Publishing

Kathy Cabe Trundle, The Ohio State University, Columbus

Discover an innovative, new K–5 science curriculum that features inquiry investigations and nonfiction trade books with National Geographic's nature photography. Using magnets, we'll highlight key science misconceptions and learn how to effectively address them in the elementary classroom.

Paint It RED! Using Technology to Teach Physical Science (Phys)

(Grades 6–11) *270/272, Moscone Center*

Sponsor: Science Kit

Matt Benware *(mbenware@sciencekit.com),* Science Kit, Tonawanda, N.Y.

Are you looking for new and innovative ways to use technology to help teach physical science? Learn how to better engage the iPod generation by integrating technology that looks and feels familiar to your students so that you can spend more time on real science concepts.

Who Are You? Blood Typing (Bio)

(Grades 6–12) *274/276, Moscone Center*

Sponsor: WARD'S Natural Science

Kelly P. Cannon, Washoe County School District, Reno, Nev.

Use simulated blood to conduct basic blood typing tests such as blood smearing, ABO and Rh blood typing, and testing familial relationships. This hands-on workshop offers participants real-world experience using a safe and easy-to-use nonbiological blood substitute.

Reflections on Teaching Introductory Physics (Phys)

(Grades 9–12) *300, Moscone Center*

Sponsor: Houghton Mifflin Harcourt

Raymond Serway, Houghton Milffin Harcourt, Austin, Tex.

Houghton Mifflin Harcourt author Raymond Serway will present an overview of the *Holt Physics* program and discuss various techniques that can be used to improve student understanding of basic concepts in introductory physics. The

primary focus will be on the principle of introducing students to everyday phenomena using classroom demonstrations and assigned home activities before dealing with abstract ideas and mathematical models.

Chemistry with Vernier **(Chem)**
(Grades 9–College) *301, Moscone Center*
Sponsor: Vernier Software & Technology
Jack Randall *(info@vernier.com)* and **Don Volz** *(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!

Video Analysis with Vernier **(Gen)**
(Grades 7–College) *302, Moscone Center*
Sponsor: Vernier Software & Technology
Rick Sorensen *(info@vernier.com)* and **Matt Anthes-Washburn** *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.
Interested in learning about creating and analyzing your own videos in your science classroom? Come see how you can use the Logger *Pro* software from Vernier along with a digital video camera or still digital camera to enhance your data-collection experiments. Ideas from the new book, *Physics with Video Analysis,* written by the Live Photo Physics Project, will be demonstrated. Topics will include video-synchronized data collection, video analysis, and still digital photo analysis.

3-2-1 Blast Off! **(Gen)**
(Grades 1–8) *303, Moscone Center*
Sponsor: Educational Innovations, Inc.
Tami O'Connor *(info@teachersource.com),* Educational Innovations, Inc., Norwalk, Conn.
What student doesn't like a little burst of energy? Join Tami O'Connor of Educational Innovations in this exploration of things that go bump in the day! This workshop is designed for elementary and middle school teachers responsible for teaching energy or Newton's laws. Lesson ideas, giveaways, and door prizes!

How to Design a Safe and Efficient Science Laboratory **(Gen)**
(Grades 6–12) *304, Moscone Center*
Sponsor: Flinn Scientific, Inc.
Greg Chyson, Flinn Scientific, Inc., Batavia, Ill.
Get answers to all your laboratory design questions. We will share design priority tips and safety information gathered from years of experience helping science teachers plan their laboratory construction and remodeling projects. You'll learn what features to include in your laboratory and what common mistakes to avoid.

The Next Generation of Virtual Labs for the Entire Science Curriculum! No Cleanup Required (Gen)
(Grades 9–12) *305, Moscone Center*
Sponsor: Pearson
Brian Woodfield, Brigham Young University, Provo, Utah
See a demo of science virtual labs by the program's creator, Brian Woodfield. Virtual labs meet your students where they are in the digital world and give them the opportunity to experiment numerous times with various materials and, of course, no cleanup is required. Take home handouts and a sample CD.

12 Noon–2:00 PM NSELA/ASTE Luncheon

Reforming a Science Curriculum PK–12: A Case Study from The Blake School (M-6)
(Tickets Required: $65) *Yosemite C, Hilton*

Randal Harrington *(rharrington@blakeschool.org),* PK–12 Science Department Chair and Curriculum Coordinator, The Blake School, and Visiting Assistant Professor, University of Minnesota, Hopkins

In 2003, Randal Harrington was responsible for identifying and addressing issues involving the science curriculum at a large independent school in Minneapolis. He will discuss the process through which problems were identified, how changes were made, the tools that were used to track these changes, and the work that still needs to be done.

Randal Harrington is the PK–12 Science Department chair and science curriculum coordinator for The Blake School in Minneapolis, Minnesota, and is a visiting assistant professor at the University of Minnesota. Harrington received his PhD in physics from the University of Washington. He has traveled to India to teach physics to Tibetan monks and to Kenya to work with science teachers at the Light of Hope Children's Home.

Until 1999, Harrington was a faculty member at the University of Maine where he examined best practices in science teaching and adaptations to an introductory physics course for nonscience majors. He also founded their Physics Education Research Group and worked with the Maine Mathematics and Science Alliance.

In 1999, he helped start a Physics First high school science program at the Harker School in California, with an emphasis on modeling, physics tutorials, and physics by inquiry. He has served on committees for the ETS Physics SAT II and the American Association of Physics Teachers.

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

Find the Answers on the NSTA Avenue (#2401)

Pick up your "NSTA Navigator" to guide you through member benefits, products, services, programs, and partners—free gifts, too!

Share with Others

- ***NSTA Membership.*** Learn about your NSTA member benefits, pick up a sample journal and test our newest social networking platform, NSTA Communities. If you're a student, ask about our student chapters and other ways we support young professionals.

Enhance Your Skills

- ***NSTA Learning Center.*** Select high-quality, online learning opportunities to build content knowledge. Use our suite of tools for self-assessment and to document your progress.
- ***Web Seminars.*** Update your content knowledge with these free, 90-minute, live, online presentations. Voice questions and share in rich conversations with the presenters and other educators.
- ***SciGuides.*** Use these online resources, aligned with the national Standards, to locate lessons organized by grade level and specific content themes.

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 fields studies with planetary scientists.

NSTA National Science Teachers Association

12 Noon–2:00 PM NSTA/NMLSTA Middle Level Luncheon

Alternative Teaching Strategies to Engage Middle School Students (M-7)

(Tickets Required: $65) *Continental 8, Hilton*

Tory Brady

Sandra Robins

Tory Brady *(tbrady@exploratorium.edu),* Science Educator, Exploratorium Teacher Institute, San Francisco, Calif.
Sandra Robins *(srobins@exploratorium.edu),* New Teacher Coach and Science Educator, Exploratorium Teacher Institute, San Francisco, Calif.

We can give students an opportunity to take control of science concepts and unleash their creative talents and humor at the same time. Our presentation will look at the arts—skits, TV interviews, songs and chants, posters, cartoons, drawings, and games—as a way of helping middle-schoolers shape (and retain) their learning. For teachers, there's the additional bonus of alternative assessments. Audience participation is encouraged.

Tory Brady is a California native and University of California at Berkeley alum. She initially began her career as a registered nurse before switching to teaching. For 12 years, she taught science to elementary and middle school students before joining the Exploratorium as part of their Teacher Institute. At the institute, Brady works with middle and high school teachers as they incorporate more hands-on science into their curricula. She also helps manage the Leadership Program, which trains and supports mentor coaches as they work with new science teachers.

Sandra Robins is on staff at the Exploratorium as part of their Teacher Institute Leadership Program. She is a new teacher coach and science educator. Robins goes to new science teachers' classrooms to help model lessons and provide one-on-one support during inquiry-based activities and lessons. Her background also includes professional development in math for a K–8 district and teaching college-level sociology.

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

12 Noon–2:00 PM Luncheon

SEPA Luncheon

(By Invitation Only) *Golden Gate Salon C3, Marriott*

12 Noon–2:00 PM Exhibitor Workshop

Taking Science Outdoors with FOSS K–8 (Gen)

(Grades K–8) *130, Moscone Center*

Sponsor: Delta Education/School Specialty Science–FOSS
Joanna Snyder and **Erica Beck Spencer,** Lawrence Hall of Science, University of California, Berkeley
Learn about the groundbreaking work done by the Boston Schoolyard Initiative (BSI) and about new Lawrence Hall of Science environmental education initiatives. Explore how to use effective strategies to engage children in powerful science learning experiences in their own school yards and local outdoor environments. Participants will go outside, so dress accordingly.

12:30–1:20 PM Exhibitor Workshop

NASA Math & Science @ Work—From Launch to Landing (Gen)

(Grades 9–12) *309, Moscone Center*

Sponsor: NASA Education
Natalee D. Lloyd *(natalee.d.lloyd@nasa.gov)*, NASA Johnson Space Center, Houston, Tex.
Inspire advanced math and science students to explore STEM careers by introducing them to the work performed by NASA scientists, engineers, and doctors.

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12:30–1:30 PM Robert H. Carleton Lecture

Four Essential Questions **(Gen)**
(General) *104, Moscone Center*

Arthur Eisenkraft *(arthur.eisenkraft@umb.edu),* 2000–2001 NSTA President, Distinguished Professor of Science Education, and Director, Center of Science and Math in Context, University of Massachusetts, Boston

Presider: Yvonne Chong *(chongy@sfusd.edu),* Volunteers Manager, NSTA San Francisco National Conference, and Yick Wo Elementary School, San Francisco, Calif.

Using a teaching guide that focuses on a few elements, I will show how to make all sciences more relevant and interesting for students. The questions—(1) What does it mean? (2) How do we know? (3) Why do we believe?, and (4) Why should I care?—provide a means by which you can teach better, assess better, and help your students perform better.

Arthur Eisenkraft is a distinguished professor of science education and director of the Center of Science and Math in Context (COSMIC) at the University of Massachusetts Boston.

For 25 years, he taught high school physics. His accomplishments include being NSTA past president. He is project director for the NSF-supported Active Physics Curriculum Project, aimed at introducing physics to all students. He is chair and co-creator of the Toshiba/NSTA ExploraVision Awards, involving 15,000 students annually. In 1993, he was executive director for the XXIV International Physics Olympiad after initiating the U.S. involvement and serving as the U.S. team's academic director.

His publication Quantoons *is an outgrowth of work done in* Quantum, *a physics magazine for high school students and a collaboration of U.S. and Russia. He serves as a consultant for ESPN* SportsFigures.

He is currently investigating the efficacy of a second-generation model of distance learning for professional development.

12:30–1:30 PM Featured Presentation

Bridging Scientific Research and Education Through Research Learning Centers **(Earth)**
(General) *103, Moscone Center*

Susan Teel *(susan_teel@nps.gov),* Director, Southern California Research Learning Center, National Park Service, Thousand Oaks

Presider: Gary Nakagiri *(gnakagiri@gmail.com),* Accessing Language Through Science and Mathematics Strand Leader, NSTA San Francisco National Conference, and Education Consultant, El Cerrito, Calif.

In this presentation, Susan Teel will discuss Research Learning Centers and how they specialize in service learning, citizen science, and innovative and interactive distance education programming. There are multiple avenues available to science teachers to work with Research Learning Centers to enhance classroom-learning experiences. The National Park Service welcomes and encourages student involvement in ongoing research and monitoring occurring in the parks.

Susan Teel currently serves the National Park Service as director of the Southern California Research Learning Center (SCRLC) and is responsible for conducting research and education programs, as well as recruiting and maintaining a network of key scientific, educational, and community partners to assist with research and educational activities in three parks: Channel Islands National Park, Cabrillo National Monument, and Santa Monica Mountains National Recreation Area. Recently, she accepted a position as adjunct faculty at California State University, Channel Islands.

A native of Miami, Teel attended Florida International University and studied biology and chemistry. Coral disease and bleaching episodes sparked her interest and led her to study marine biology and coastal zone management at the Oceanographic Center in Dania Beach, Florida. Following graduate work, she taught environmental science at Miami-Dade College and worked as a wildlife biologist on the Everglades Restoration for the Environmental Protection Agency (EPA) and the Fish and Wildlife service. Susan has also taught environmental science at Florida International University, Florida Atlantic University, and Santa Monica College.

Several of her current projects are focused on innovative experiential learning, environmental science via distance education, and programs to involve students in ongoing research at national parks such as the Sea to Shining Sea LIVE, Applied Field Methods, and the Climate Change Ambassador project.

12:30–1:30 PM Edu-tainment General Session Featuring Banana Slug String Band (Informal Science Day)

(Informal Education) *Yerba Buena Salon 9, Marriott*

The Banana Slug String Band dedicates itself to making great music for kids that teaches science and a love of this green Earth. Started in 1985 by four naturalists working for San Mateo Outdoor Education and Exploring New Horizons, the Banana Slugs are probably best known for their songs "Dirt Made My Lunch" and "Water Cycle Boogie." With vocals, guitars, mandolin, bass, harmonica, banjo, and percussion, Slug songs range from rockin' boogies to country, bluegrass to reggae to rap. Today, teachers and outdoor educators across the U.S. and Canada use Banana Slugs' music in conjunction with their science curricula.

12:30–1:30 PM SCST Marjorie Gardner Lecture

SCALE-UP: A Student-centered Active Learning Environment for Undergraduate Programs (Gen)

(College) *Union Square 17/18, Hilton*

Robert J. Beichner *(beichner@ncsu.edu),* Alumni Distinguished Undergraduate Professor, STEM, North Carolina State University, Raleigh

Presider: Brian Shmaefsky *(brian.r.shmaefsky@lonestar.edu),* Lone Star College–Kingwood, Tex.

Dr. Beichner and his students have written a series of tests aimed at diagnosing students' misconceptions about a variety of introductory physics topics. These tests are used by teachers and researchers in high schools and colleges around the world.

12:30–1:30 PM Presentations

SESSION 1

It's Their World, Too! Helping Young Learners Discover Nature and Science (Gen)

(Preschool–Middle Level/Informal Ed) *Continental 2, Hilton*

Carl J. Carranza *(carl.carranza@lacity.org),* Cabrillo Marine Aquarium, San Pedro, Calif.

Keep young learners interested and wanting to know more about the world around them using these activities and programs.

SESSION 2

NSTA Press Session: Explicitly Teaching Students How to Take Collective Action During a Whole-Class Inquiry (Phys)

(General) *Continental 9, Hilton*

Dennis W. Smithenry *(dsmithenry@gmail.com),* Elmhurst College, Elmhurst, Ill.

Joan A. Gallagher-Bolos *(katiramom@gmail.com),* Glenbrook North High School, Northbrook, Ill.

We'll share the results of a research project that dramatically demonstrates how students can be taught to take collective action during a whole-class inquiry.

SESSION 3

21st-Century Skills: Connecting Science, Art, and Literacy (Gen)

(Preschool–Elementary) *Golden Gate 2, Hilton*

Helena L. Carmena *(hcarmena@calacademy.org),* California Academy of Sciences, San Francisco

Maureen E. Sullivan, San Francisco (Calif.) Unified School District

We'll look at how 21st-century skills span art, science, and literacy and provide a foundation for content integration.

SESSION 4

Make the Study of Science "Cool" with SSSNOW (Earth)

(Middle Level/College) *Golden Gate 5, Hilton*

Kenneth L. Huff *(khuff@williamsvillek12.org),* Mill Middle School, Williamsville, N.Y.

Catherine L. Lange *(langecl@buffalostate.edu),* SUNY College at Buffalo, N.Y.

Presider: Catherine L. Lange

Discover "cool" ways to engage students in the study of the properties of snow, including temperature gradient, density, strata, and snowflake collection.

SESSION 5

Linking Learning Through Science and Technology (Gen)

(Elementary) *Golden Gate 7, Hilton*

Christina A.M. Guasto *(cguasto@interact.ccsd.net)* and **Amy Bentel,** Jay W. Jeffers Elementary School, Las Vegas, Nev.

Hear how we integrated technology into our classrooms to teach science to a large English language learner population.

SESSION 6

NSTA Press Session: Blick on Flicks: Popular Media in the Classroom (Gen)

(Elementary–High School) *Golden Gate 8, Hilton*

Jacob Clark Blickenstaff *(jclarkblickenstaff@gmail.com),* University of Southern Mississippi, Hattiesburg

The author of the *NSTA Reports* feature "Blick on Flicks" returns to the national meeting with examples from recent columns and his upcoming book.

SESSION 7

Make Clickers Work for You: A Powerful Tool for Instruction and Formative Assessment (Gen)

(High School–College) *Union Square 3/4, Hilton*

Stephanie V. Chasteen *(stephanie.chasteen@colorado.edu),* University of Colorado at Boulder

Learn to use classroom-response systems (clickers) effectively to increase student engagement and conceptual understanding through peer instruction and to provide valuable formative assessment.

SESSION 8

Getting to "Accepted": Publishing in NSTA's *Journal of College Science Teaching* (Gen)

(College) *Union Square 14, Hilton*

Ann Cutler *(acutler@uindy.edu),* Field Editor, *Journal of College Science Teaching,* and University of Indianapolis, Ind.

Learn about the process of getting published in this publication and other peer-reviewed journals in science education. *Journal of College Science Teaching* editors will offer suggestions on writing and effectively editing your manuscript.

SESSION 9

CESI Session: Science on Board (Gen)

(General) *Union Square 21, Hilton*

Hans Persson *(hans.persson@mnd.su.se),* University of Stockholm, Sweden

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

Roger Carter, Rösjöskolan, Sollentuna, Sweden

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

Anne Vestlund, Carlssons Skola, Stockholm, Sweden

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

Join Hans Persson from the University of Stockholm along with other Swedish educators as they share ideas on how the interactive whiteboard can bring new life to science teaching.

SESSION 10

Beyond Introductory Circuits (Phys)

(High School–College) *Union Square 22, Hilton*

Aaron R. Osowiecki *(aosowiecki@gmail.com),* Boston Latin School, Boston, Mass.

Presider: Elizabeth Niehaus *(niehaus_p@msn.com),* Niehaus and Associates, Inc., South Lyon, Mich.

Teach students about semiconductor devices by investigating an AC to DC converter and a simple audio amplifier.

SESSION 11

How Do You Get University Faculty and Students into Your Classroom? (Phys)

(Elementary–Middle Level/Supv) *Union Square 25, Hilton*

Vanessa C. Garza *(vanessa@iridescentlearning.org),* Iridescent, Los Angeles, Calif.

Learn how to replicate our "Engineers as Teachers" model to suit your classroom or school. We will share how to expand this partnership to include funding for your classroom/school to support science education.

SESSION 12

Laboratory Report Templates (LRT): A New and Effective Way to Promote Student Inquiry in the Laboratory (Chem)

(High School–College/Supervision) *Yosemite A, Hilton*

Kristen L. Cacciatore *(kcacciatore@boston.k12.ma.us),* East Boston High School, East Boston, Mass.

This easy-to-implement, classroom-tested method promotes genuine student inquiry in the laboratory. Research shows LRT helps students learn difficult science content and develop experimental skills.

SESSION 13

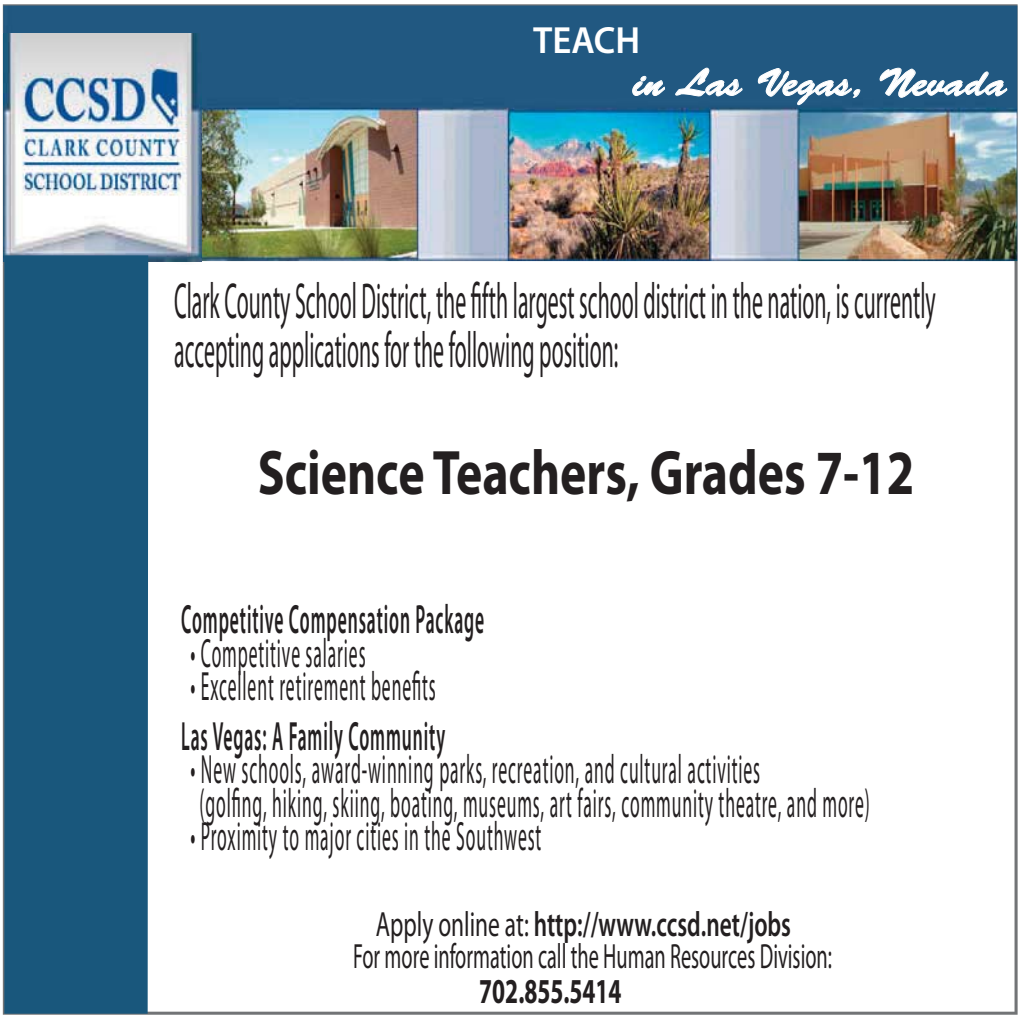
A Demo a Week Makes Science Class the Peak (Chem)

(General) *Golden Gate Salon A, Marriott*

Vinay Dulip *(vdulip@yahoo.com),* **Jalyn Lara, Ariana Quiroz, Jupiel Rabanzo, Jennelle Rincones,** and **Aaron Suarez,** Foy H. Moody High School, Corpus Christi, Tex.

Presider: Cheryl Heitzman, Perspectives Charter School/Illinois Institute of Technology, Chicago

Here are more than 25 easy-to-do demonstrations that use locally available fun materials, such as bubbles, slime, balloons, and invisible glue.



SESSION 14

DuPont Presents—Safety in the Science Classroom and Lab (Gen)

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

Peggy Vavalla *(marguerite.e.vavalla@usa.dupont.com),* DuPont, Wilmington, Del.

We'll share a template for writing a safety plan for your school district and engaging your colleagues to create a safe science classroom environment.

SESSION 15

Student Misconceptions in Astronomy: How Do We Address Them? (Earth)

(General) *Pacific B, Marriott*

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

Presider: Carol L. Jones, Macomb Independent School District, Clinton Township, Mich.

We'll look at student misconceptions regarding the solar system, galaxies, and the universe. DVD and handouts provided at the end of the session.

SESSION 16

STEM Inquiry Using SWAC (Satellites Weather and Climate) Modules (Earth)

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

Mark Powers *(mpowers@anwsu.org),* Vergennes High School, Vergennes, Vt.

See how we use university-developed modules about weather data collection and analysis in the classroom to foster inquiry skills.

SESSION 17

AMSE Session: Achieving Academic Excellence, One Case at a Time (Bio)

(High School) *Pacific F, Marriott*

Chelia R. McCoo Dogan *(chelia.mccoo@aliefisd.net),* Elsik High School, Houston, Tex.

Chandra J. Donald *(chandra.donal@aliefisd.net),* Taylor High School, Houston, Tex.

Enhance your science teaching by using case studies. This powerful tool allows students to think as scientists and become a part of the scientific process.

SESSION 18

Sparking Biological Curiosity (Bio)

(High School) *Sierra A, Marriott*

Jay Phelan *(jay@ucla.edu),* University of California, Los Angeles

Teach ways of thinking rather than pages of content and use photos and illustrations to engage and inspire students.

SESSION 19

Inspiring Inquiry Through Field Science Investigations (Env)

(Middle Level–High School) *Sierra I, Marriott*

Christine Kola, M.S. 45 Thomas C. Giordano School, Bronx, N.Y.

See how urban students use the scientific method and the natural setting of their environment to design and complete long-term field science investigations.

SESSION 20

NSTA High School Physics Share Session (Phys)

(High School) *Willow, Marriott*

Paul Doherty *(pauld@exploratorium.edu),* Exploratorium, San Francisco, Calif.

Peter Hopkinson *(phopkinson@shaw.ca),* Vancouver Community College, Vancouver, B.C., Canada

Presider: Michael J. Lowry, NSTA Director, High School Science Teaching, and The McCallie School, Chattanooga, Tenn.

The NSTA High School Committee highlights excellent presenters sharing best practice activities, assessments, and teaching tips. Join us for some great ideas!

SESSION 21 (two presentations)

(General) *Yerba Buena Salon 8/Group 1, Marriott*

Teacher Researcher Day Session: What Did I Learn? Conclusions, Reflections, and Self-Assessments in Science Notebooks (Gen)

Isabelle K. McDaniel, Creative Arts Charter School, San Francisco, Calif.

Learn how to prepare students to draw meaningful conclusions in inquiry-based science.

Teacher Researcher Day Session: Developing Pedagogical Content Knowledge: Learning to Teach Scientific Concepts (Bio)

Shelley A. Grant *(grant.shelley@gmail.com),* Bancroft Middle School, San Leandro, Calif.

Through six years of teacher inquiry using classroom video, I have developed the pedagogical content knowledge to improve my teaching of natural selection, balancing chemical equations, and motion.

SESSION 22 (two presentations)
(General) *Yerba Buena Salon 8/Group 2, Marriott*

Teacher Researcher Day Session: Connecting Science Learning Across Contexts: New Instructional Methods (Bio)
Jim Clark, Arroyo High School, San Lorenzo, Calif.
Xenia S. Meyer *(xenia.meyer@berkeley.edu),* University of California, Berkeley
Promote students' use of what they have learned by framing learning as extending across time, places, people, topics, and communities.

Teacher Researcher Day Session: Teacher Researcher Poster Session (Gen)
John Graves *(graves@montana.edu),* Montana State University, Bozeman
Teacher researchers will present a physical and virtual poster session of classroom projects.

SESSION 23 (two presentations)
(General) *Yerba Buena Salon 8/Group 3, Marriott*
Presider: Michael Jabot, SUNY Fredonia, N.Y.

Teacher Researcher Day Session: Demystifying the Axes: Teaching Middle School Students to Understand What Graphs Are Really Saying (Phys)
Samantha M. Johnson, Bancroft Middle School, San Leandro, Calif.
Let's look at the sequence of comprehending, interpreting, and creating motion graphs—an essential science skill for a wide range of urban middle school students.

Teacher Researcher Day Session: Video Says More Than a Million Words (Phys)
Greg Lauer, Fredonia (N.Y.) Central Schools
We'll look at the impact of the use of technology in analyzing real-world experiences in physics/physical science.

Outstanding Science Trade Books

What are they? How do you pick them? How do you use them in the classroom? Meet members of the Outstanding Science Trade Book selection committee – they'll help you open a new chapter in your teaching! Integrating science literacy keeps students interested and makes for an efficient classroom!

Book Raffle!
Meet Authors!

Friday, March 11, 2011
3:30–5:30pm
Hilton San Francisco
Union Square, Continental 4

NSTA press
National Science Teachers Association

SESSION 24

Teacher Researcher Day Session: Building a Cadre of Professional Development Leaders for Implementing a Research-based Inquiry Science Program (Gen)

(Middle Level/Supv) *Yerba Buena Salon 8/Group 4, Marriott*

Wendy M. Jackson *(wjackso7@depaul.edu),* DePaul University, Chicago, Ill.

Carole P. Mitchener *(cmitchener@gmail.com),* University of Illinois, Chicago

Misty J. Richmond *(mjrichmond@cps.edu),* Agustin Lara Academy, Chicago, Ill.

Hethyr Tregerman *(hander3@luc.edu),* Loyola University, Chicago, Ill.

Kathryn L. Eggert, Prescott School, Chicago, Ill.

Teachers from Chicago Public Schools will discuss the development and evolution of a cadre of teachers as professional development leaders.

SESSION 25

Begin with Great Literature—Don't Tack It On! (Phys)

(Elementary–High School) *Yerba Buena Salon 15, Marriott*

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

Building inquiry around a core of great literature provides a new model for integration. Here's an example of a unit for any level that starts by capturing the imagination with award-winning text, then provides easy labs and art, music, social studies, mathematics, and language arts activities.

SESSION 26

NSTA Avenue Session: The Shell Science Teaching Award—Learn More, Be Successful (Gen)

(Elementary–High School) *113, Moscone Center*

Lovelle Ruggiero *(lovelleruggiero@me.com),* New Rochelle, N.Y.

Join Shell awardees, finalists, and members of the NSTA/Shell judging panel to learn what it takes to apply for and win this prestigious and enriching $10,000 national award from Shell Oil Company.

SESSION 27 (two presentations)

(General) *200, Moscone Center*

Understanding STEM Education and STEM Schools (Gen)

Ann F. Wright-Mockler *(ann.wrightmockler@pnl.gov),* Pacific Northwest National Laboratory, Richland, Wash.

Is STEM just Science 2.0? Explore what is meant by STEM education and see examples of STEM schools from across the nation.

Fostering Innovative Teaching Practice Through Science Teacher and STEM Undergraduate Partnerships (Gen)

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

I'll share the successes, challenges, and future directions of a university-based program that pairs science undergraduate students and practicing teachers.

SESSION 28

Increase Student Achievement with Virtual Science Notebooks (Gen)

(General) *224/226, Moscone Center*

Teresa A. Le Sage *(lesaget@uhv.edu),* University of Houston–Victoria, Tex.

Learn how to combine technology and inquiry with the Virtual Science Notebook. A Virtual Science Notebook will be demonstrated online.

SESSION 29

ISTE: Learning on the Holodeck: Theaters Without Audiences (Gen)

(General) *232/234, Moscone Center*

David D. Thornburg *(dthornburg@aol.com),* Thornburg Center for Space Exploration, Lake Barrington, Ill.

Presider: Ben Smith *(ben@edtechinnovators.com),* ISTE/Red Lion (Pa.) Area School District

Lecture-based instruction provides tremendous challenges to students and teachers alike. A flexible virtual environment, the holodeck, was first proposed in the science fiction series, *Star Trek: The Next Generation.* While a "true" holodeck exceeds current technological capacity, a functional model can be constructed within normal school budgets using available technology.

SESSION 30

Make Science Learning Attractive Using Interactive Technology (Gen)

(General) *250, Moscone Center*

Tahsin Khalid *(tahsinkhalid@hotmail.com),* Southeast Missouri State University, Cape Girardeau

Presider: Paul J. Niehaus *(niehaus_p@msn.com),* Washtenaw Community College, Ann Arbor, Mich.

Learn some strategies for making science learning fun and interesting using interactive technologies. I'll share a list of videos and websites.

SESSION 31

***Science Times:* A Resource Created by Science Teachers for Science Teachers (Gen)**

(Middle Level–High School/Informal) 252/254, Moscone Center

Susan M. Teed, David B. Zandvliet *(dbz@sfu.ca),* and **Carlos Gustavo A. Ormond** *(cormond@sfu.ca),* Simon Fraser University, Burnaby, B.C., Canada

Science Times provides current, controversial news stories that challenge students' attitudes about science while promoting scientific literacy (at three reading levels).

SESSION 32

Standards-based Assessment Items (Gen)

(Middle Level–High School) 258/260, Moscone Center

Ted Willard, AAAS Project 2061, Washington, D.C.

Project 2061 has developed standards-based assessment items that can be accessed on the web for free. Come learn how.

SESSION 33

Project Based Learning: Preparing Students to Solve Real-World Problems in STEM Disciplines (Gen)

(Middle Level–College) 262, Moscone Center

Martha M. Day *(martha.day@wku.edu),* Western Kentucky University, Bowling Green

Join us for an exciting journey into the world of Problem Based Learning, where students learn science and mathematics content through situated inquiry to solve real-world problems.

12:30–1:30 PM Workshops

Using the Hardy-Weinberg Equilibrium to Illustrate Evolutionary Change (Bio)

(High School–College) Continental 1, Hilton

William H. Leonard *(leonard@clemson.edu),* Clemson University, Clemson, S.C.

Presider: John Penick *(john.penick@sangariglobaled.com),* 2003–2004 NSTA President, and Sangari Global Education, Miami, Fla

Engage in a mathematical and calculator population genetics activity using a single trait among the participants that shows evolutionary change through founder effect and natural selection.

Point, Game, Set, Match: Science Wins with Tennis Ball Containers (Gen)

(Supervision/Administration) Continental 3, Hilton

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

Free, "green," transparent, unbreakable, and infinitely adaptable, used tennis ball containers offer hands-on activities making density, porosity, permeability, capillarity, core-sampling, and other elusive ideas visible.

Science Super Heroes (Gen)

(Elementary) Golden Gate 3, Hilton

Jane M. Kemp *(jane.kemp@sdhc.k12.fl.us)* and **Sharon Cutler,** Chiles Elementary School, Tampa, Fla.

Sarah J. Kemp *(sarah.kemp@sdhc.k12.fl.us),* West Tampa Elementary School, Tampa, Fla.

Incorporate a super hero theme into standards-based problem-solving experiences using Capstone Press's *Max Axiom Super Scientist* comic book series.

Polar Fun Share-a-Thon (Env)

(Elementary–Middle Level) Golden Gate 4, Hilton

Jean Pennycook *(jean.pennycook@gmail.com),* Fresno (Calif.) Unified School District

Dena Rosenberger *(drosenberger@guhsd.net),* El Capitan High School, Lakeside, Calif.

Penguins, polar bears, and more. Cross the curricular areas with classroom resources about the polar regions.

Sowing the Seeds of Wonder (Env)

(Preschool) Golden Gate 6, Hilton

Joyce Hill *(science@lifelab.org),* Life Lab Science Program, Santa Cruz, Calif.

Try a selection of hands-on activities that engage preschool children in garden explorations. Take home tips for launching an educational garden.

NARST Session: Profile of a Successful Science Fair Coach: How Theory and Research Translate Into Classroom Practice (Gen)

(General) Union Square 5/6, Hilton

Julie Angle *(julie.angle@okstate.edu),* Oklahoma State University, Stillwater

Through collaborative discussions and interactive games, participants will learn how to mentor students in science fair competitions based on profiles of successful science fair coaches.

CSSS Session: iPhones in the STEM Science Classroom (Gen)
(General) *Union Square 15/16, Hilton*
Mozell P. Lang, Detroit (Mich.) Public Schools
iGIS is a mobile geographic information system (GIS) software that is built into iPhones. It extends mobile GIS functions for conducting a wide array of scientific explorations in the science classroom. These include remote-sensing images; GIS maps such as rivers, land uses, forests, and migratory bird routes; hotlinking video images; locator design; and much more.

Heads and Tails or Tales? Enhance Science Activities Using Literature Connections (Gen)
(Elementary–Middle Level) *Union Square 19/20, Hilton*
Nancy K. Byrd *(nbyrd@nps.k12.va.us),* Blair Middle School, Norfolk, Va.
CANCELED
Janne Walker, Retired Educator, Norfolk, Va.
Dawn Lock, Norfolk (Va.) Public Schools
Science comes alive through great stories filled with engaging characters and twisting plots. Grab your students' interest with our innovative approach.

FOSS California Leadership Academy: Developing Science-centered Elementary Schools (Gen)
(General) *Union Square 23/24, Hilton*
Kim Stokely and **Cathy Klinesteker** *(cklinest@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Kathy DiRanna, WestEd, Santa Ana, Calif.
Natalie Yakushiji *(natalie_yakushiji@berkeley.edu),* Program Coordinator, NSTA San Francisco National Conference, and Lawrence Hall of Science, University of California, Berkeley
Jennifer Boone *(jboone@conejo.k12.ca.us)* and **Yolanda Fitzgerald** *(yfitzgerald@conejo.k12.ca.us),* EARTHS Magnet School, Newbury Park, Calif.
Tyler Graff *(tyler.graff@gmail.com),* Fammatre Elementary School, San Jose, Calif.
Kathy Kimpel *(kimpelk@cambrian.k12.ca.us),* Bagby Elementary School, San Jose, Calif.
Lani Potts *(pottsl@cambrian.k12.ca.us),* Cambrian School District, San Jose, Calif.
Gerardo Guzman Rico *(gguzmanrico@stockton.k12.ca.us),* Richard Pittman School, Stockton, Calif.
Experience the FOSS California Leadership Academy model, a three-year science leadership development program where leaders develop science-centered elementary schools.

Exploring Sea Floor Spreading with Data from the Integrated Ocean Drilling Program (IODP) (Earth)
(Middle Level–High School) *Nob Hill C, Marriott*
Barbara J. Simon-Waters, East Carteret High School, Beaufort, N.C.
Explore real-time science in the classroom with The Race Is On…with Sea Floor Spreading, an activity developed during the Deep Earth Academy workshop.

NASA: Graphing, Gravity, and Laws of Planetary Motion (Earth)
(Middle Level–High School) *Nob Hill D, Marriott*
Alan D. Gould *(agould@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Edna K. DeVore *(edevore@seti.org)* and **Pamela K. Harman** *(pharman@seti.org),* SETI Institute, Mountain View, Calif.
Use Kepler Mission exoplanet discovery data to teach graphing, gravity, modeling planetary motion, and Kepler's Laws. NASA materials and a raffle for a light sensor.

Synergy: Bringing Biology, Ecology, and Technology Together (Bio)
(High School) *Pacific H, Marriott*
Gary M. Holliday *(ghollida@iit.edu),* Illinois Institute of Technology, Chicago
Brittany P. Kinser *(bkinser@perspectivescs.org)* and **Kerry Maxwell** *(kmaxwell@perspectivescs.org),* Perspectives/IIT Math & Science Academy, Chicago, Ill.
Johno Pappas *(pappasj@dls.org),* De La Salle Institute, Chicago, Ill.
Use these lessons to expand students' knowledge of math, science, technology, humanities, and the arts as they solve problems that integrate many disciplines.

Promoting Earthquake Literacy: Comparing Intra-plate and Plate Boundary Earthquakes (Earth)
(Middle Level–College) *Pacific J, Marriott*
Lloyd H. Barrow and **Dane L. Schaffer** *(dlszh3@mail.missouri.edu),* University of Missouri, Columbia
Explore concepts about earthquakes and plate tectonics, including intra-plate earthquakes. We'll model an inquiry approach.

They May Learn Differently, but They Can Learn, Can't They? (Earth)
(Elementary–High School) *Walnut, Marriott*
Barry Fried *(bfried@schools.nyc.gov)* and **Honora Dash** *(hdash@schools.nyc.gov),* John Dewey High School, Brooklyn, N.Y.
Create a community of science learners. Learn how to differentiate instruction and effectively address the needs of all students through technology and inquiry-based projects and investigations.

PDI **BSCS Pathway Session: Using Rare Diseases to Teach About Scientific Inquiry (Bio)**
(Middle Level) *Yerba Buena Salon 2, Marriott*
Mark V. Bloom *(info@bscs.org),* BSCS, Colorado Springs, Colo.
Take part in an inquiry-based activity that uses the study of a rare disease to engage students in medicine and scientific inquiry.

PDI **SEPUP Pathway Session: Assessing 21st-Century Skills in an Issue-oriented Science Classroom (Gen)**
(Middle Level–High School) *Yerba Buena Salon 4, Marriott*
John Howarth *(john_howarth@berkeley.edu)* and **Janet Bellantoni** *(janetb@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Participants will examine ways to assess and grade inquiry activities that incorporate 21st-century skills in the context of issue-based science.

PDI **ELL Pathway Session: From Magic to Misconceptions: Developing Academic Language Through Science for English Language Learners (Gen)**
(Elementary–Middle Level) *Yerba Buena Salon 10, Marriott*
Suzanne Nakashima *(msdpnabash@hotmail.com),* Lincrest Elementary School, Yuba City, Calif.
This hands-on workshop includes activities from the classroom that integrate observations and science investigations with the development of academic language and vocabulary for English language learners.

Tools and Strategies for Engaging Students in Inquiry-based Earth System Science Field Studies (Earth)
(Middle Level–High School/Inf) *Yerba Buena Salon 11, Marriott*
Martos Hoffman *(mhoffman@globe.gov),* University Corporation for Atmospheric Research, Boulder, Colo.
Enhance your comfort and skill—and your students' interest—in conducting outdoor investigations of the local environment through the use of proven inquiry-based investigation strategies.

Slick Ways to Teach Students About Oil (Env)
(Informal Education) *Yerba Buena Salon 12/13, Marriott*
Kristine Bybee-Finley *(kfinley@access.k12.wv.us),* Hurricane High School, Hurricane, W.Va.
Here are easy-to-do quick labs that illustrate the difficulty of retrieving oil and making it go away.

Building Scientific Minds: Science Through the Arts (Gen)
(Middle Level–High School) *111, Moscone Center*
Elizabeth A. Smallwood and **Elizabeth M. Schoellkopf** *(beth@tapestryschool.org),* Tapestry Charter School, Buffalo, N.Y.
Put the arts into STEM and create some STEAM in your classroom.

Using Word Walls in Inquiry-based Preservice Science Education (Gen)
(General) *112, Moscone Center*
Marsha Bednarski *(bednarskim@ccsu.edu),* Central Connecticut State University, New Britain
Engage in guided inquiry science activities that incorporate the use of student notebooks/journals and create a classroom word wall that includes not only words but pictures and graphs to enhance reading and writing literacy skills for all learners.

The Math Infusion into Science Project (Gen)
(General) *212, Moscone Center*
Scott McMullen *(jsmcmull@gmail.com)* and **Beverly Clendening** *(beverly.clendening@hofstra.edu),* Hofstra University, Hempstead, N.Y.
The Math Infusion into Science Project (MiSP) develops eighth-grade science lessons that are designed to enhance students' learning in both math and science.

Under Pressure! (Earth)
(General) *220/222, Moscone Center*
Teresa A. Eastburn *(eastburn@ucar.edu),* National Center for Atmospheric Research, Boulder, Colo.
Presider: Susan Foster, University Corporation for Atmospheric Research, Boulder, Colo.
When students understand the concept of atmospheric pressure, weather starts to make a lot more sense. Watch your class come to life—and to learning—as you crush cans using nothing but air and vacuum-pack the school principal who's usually full of the stuff. Watch what happens to people and things under no pressure at all…YIKES!

✔ **Let Loose! Lecture-free Teaching in the Middle School Classroom (Gen)**
(Middle Level) *228/230, Moscone Center*
M. Lynn Tushaus *(tushaul@mail.savannah.k12.mo.us)* and **Lori A. Worthington** *(worthil@mail.savannah.k12.mo.us),* Savannah Middle School, Savannah, Mo.
Create a classroom of student-led learners. Explore best strategies to revitalize your classroom and shift learning responsibility from teacher to students.

NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (Earth)
(Elementary–High School) *Meeting Rm. 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.
Todd Ellis *(ellistd@oneonta.edu),* SUNY College at Oneonta, N.Y.
Ron Fabich *(rwfabich@gmail.com),* NESTA, Medina, Ohio
Peter Falcon *(pcfalcon@jpl.nasa.gov),* Jet Propulsion Laboratory, Pasadena, Calif.
Pamela Harman, SETI Institute, Mountain View, Calif.
Steele Hill *(steele.w.hill@nasa.gov)* and **Carolyn Ng** *(carolyn.y.ng@nasa.gov),* NASA Goddard Space Flight Center, Greenbelt, Md.
Margaret A. Holzer *(mholzer@monmouth.com),* Chatham High School, Chatham, N.J.
Karen E. Johnson *(karen.johnson@adams12.org),* STEM Magnet Lab School, Northglenn, Colo.
Teresa Kennedy and **Nan McClurg,** The GLOBE Program, Tyler, Tex.
Brian Kruse and **Greg Schultz** *(gschultz@astrosociety.org),* Astronomical Society of the Pacific, San Francisco, Calif.
Robert T. Sparks *(rsparks@noao.edu),* National Optical Astronomy Observatory, Tucson, Ariz.
Deanna Tebockhorst *(deanna@atmos.colostate.edu),* Colorado State University, Loveland
Pamela Whiffen *(pwpwr@aol.com),* NASA Educator Ambassador, Phoenix, Ariz.
Erin Wood *(erin.wood@lasp.colorado.edu),* University of Colorado at Boulder
Presider: Michelle C. Harris
Join more than 20 NESTA members and other education specialists as they share their favorite classroom activities. Lots of free handouts!

12:30–1:30 PM Meeting

National Lab Network Pep Rally
Union Square 1/2, Hilton
Join us as we celebrate year two of the National Lab Network (formerly known as National Lab Day) and learn more about this exciting campaign to bring hands-on science to your school! Visit *www.nationallabnetwork.org* for more information.

12:30–1:30 PM Exhibitor Workshops

Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Biology Classroom (Bio)

(Grades 9–12) *110, Moscone Center*

Sponsor: Texas Instruments

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

Take data collection to a new level with the latest Texas Instruments/Vernier data collection solution for TI-Nspire technology. Learn how TI-Nspire technology can enhance inquiry learning using data collection, assessment, and simulation. Observe student progress through biology lessons and labs in real-time with the TI-Nspire Navigator™ system.

***InterActions in Physical Science*—Newly Revised (Chem)**

(Grades 7–9) *307, Moscone Center*

Sponsor: It's About Time

Robert H. Poel, Professor Emeritus, Kalamazoo, Mich.

Build your students' content knowledge with a structured program that provides motivating, relevant activities; expository readings; and computer simulations. At the same time, you will be building students' skills in scientific thinking, cooperative learning, and problem solving. High school science teachers tell *InterActions* teachers, "Whatever you're doing in *InterActions*, please keep doing it. Your students come excited and prepared to learn more science!"

You're invited...

to the NSTA New Member Orientation

Your Total Membership Experience starts with this conference but continues all year long as you share your thoughts, lend your voice, and become a true partner in science education with your professional membership association! Join us for an introduction to your membership experience and possibly a visit from the GEICO Gecko! An exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments!

Friday, March 11 • 4:00–5:00 PM

Hilton San Francisco Union Square • Yosemite B

Courtesy of GEICO Insurance

Open to NSTA members who joined after 5/31/2010.

NSTA GEICO geico.com

12:30–2:30 PM Workshops

PDI **TERC Pathway Session: Making Science Spatial** **(Gen)**

(Elementary–High School) *Yerba Buena Salon 1, Marriott*

Bob Coulter *(bob.coulter@mobot.org),* Missouri Botanical Garden, St. Louis

Make science more interesting by adding a geographic lens. Learn how to include geospatial data in investigations and a range of data tools.

PDI **EDC Pathway Session: Yes, Little Ones Can Argue!** **(Gen)**

(Preschool–Elementary) *Yerba Buena Salon 3, Marriott*

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

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

Early elementary science learning based in argumentation and language is a powerful tool. The Science Writing Heuristic (SWH) approach uses negotiation, reading, and writing.

PDI **WestEd Pathway Session: Developing Rubrics and Appropriate Feedback** **(Gen)**

(General) *Yerba Buena Salon 5, Marriott*

Gloria Rodriguez Bañuelos, REAP, Santa Ana, Calif.

Jo Topps *(jtopps@wested.org),* K–12 Alliance/WestEd, Santa Ana, Calif.

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

PDI **LHS Pathway Session: Using Online Tools to Support Assessment for Learning** **(Gen)**

(Middle Level–High School) *Yerba Buena Salon 6, Marriott*

Jim Minstrell *(jimminstrell@facetinnovations.com),* FACET Innovations, LLC, Seattle, Wash.

Support assessment with the tools available at *www.diagnoser.com.* What assumptions about learning are built into the tools? How are teachers using the tools? How can these tools be used more effectively? What are the effects on student learning? How might these tools be used for professional development? Join us as we address these questions and more.

1:00–2:00 PM Exhibitor Workshops

Bio-Rad Genes in a Bottle™Kit **(Bio)**

(Grades 7–College) *308, 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!

NASA Education Overview **(Gen)**

(Grades K–12) *310, Moscone Center*

Sponsor: NASA Education

James Stofan *(james.l.stofan@nasa.gov),* NASA Headquarters, Washington, D.C.

Come to this overview of NASA's education programs and their intended outcomes from NASA's associate administrator for education.

1:00–2:30 PM 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 them control every stage of the wine-making process. Learn how contemporary winemakers use biology, chemistry, and physical science to help them 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.

1:00–3:30 PM Exhibitor Workshop

Bio-Rad Forensic DNA Fingerprinting Kit (Bio)
(Grades 9–College) *306, Moscone Center*
Sponsor: Bio-Rad Laboratories
Kirk Brown *(biotechnology_explorer@bio-rad.com),* Tracy High School, Tracy, Calif.
Use molecular scissors to create a DNA fingerprint. Restriction enzyme digestion and DNA gel electrophoresis are used to help determine which suspect committed the crime. Extend this kit with a plasmid mapping activity using the plasmid DNA restriction patterns from the experiment. Learn how to capture your gel digitally using Vernier Software & Technology's Logger *Pro*® and White Digital Bioimaging System AP Biology Lab 6.

1:00–4:00 PM Short Course

Science Notebooking and Academic Language Development for Upper Elementary Students (SC-14)
(Grades 3–5) *Union Square, Grand Hyatt*
Tickets Required: $33 SOLD OUT
Joanna Totino, Lawrence Hall of Science, University of California, Berkeley
For description, see Volume 1, page 68.

1:30–2:00 PM Exhibitor Workshop

The Puerto Rico SUN-EARTH Program: A Successful Educational Venture (Gen)
(Grades K–12) *309, Moscone Center*
Sponsor: NASA Education
Yasmin Detres *(yasmin.detres@upr.edu),* Puerto Rico ERC, Mayaguez, P.R.
The NASA Our Star the Sun Center for Educational Excellence (OSSCEE) is an educational program designed to promote effective teaching and learning activities with an emphasis on strengthening core subject areas in science, mathematics, engineering, and technology among teachers and students in Puerto Rico.

1:30–3:00 PM Shell Science Seminar

From the Inside Out: What Research Says About Teaching and Learning in STEM (Gen)
(General) *102, Moscone Center*

Celeste H. Pea *(cpea@nsf.gov),* Program Director, Research on Learning in Formal and Informal Settings, National Science Foundation, Arlington, Va.

Presider: Ana Lopez *(aglopez@comcast.net),* Science Specialist, Central Valley Science Project, Fresno, Calif.

Now that we are a decade into the 21st century, increasingly there are calls to rely on evidence-based research conducted by teams of educators, scientists, and psychologists to help develop practices, models, and modes of thinking that are relevant to science education. This presentation provides an overview of the types of research that promote innovation and discovery and are critical to advancing STEM education preK–20. The presentation also highlights examples of newly developed approaches and strategies shown to be effective with all students and suggests ways some can easily be transferred and/or integrated into classroom instruction.

Celeste H. Pea is a program director in the Education Directorate at the National Science Foundation (NSF). In the Division of Research on Learning in Formal and Informal Settings, she works primarily with the Research and Evaluation on Education in Science and Engineering program where she manages a portfolio of awards that conduct interdisciplinary research about STEM in current and emerging contexts. She also works with the Innovative Technology Experiences for Students and Teachers program, the CAREER program, the Innovation through Institutional Integration program, the Albert Einstein Distinguished Educator Program, and she serves on the GK–12 Advisory Committee.

A co-author of several publications in science, Dr. Pea has served as an adjunct professor at George Mason University.

Prior to NSF, she was the science coordinator for a Louisiana statewide reform initiative and a middle school science teacher for East Baton Rouge Parish Schools. Her service extends to involvement with the Council of Chief State School Officers, the National Research Council, Quality Education for Minorities Network, the National Association of Biology Teachers, the American Physical Society, and the National Science Teachers Association.

NSTA is grateful to Shell for sponsoring this session.

1:30–6:00 PM NSTA Symposium

Clues to the Cryosphere: Lessons from the Ice (SYM-4)

(Grades 7–12) *Golden Gate C2, Marriott*

Tickets Required: $54

Ed Brook *(brooke@geo.oregonstate.edu),* Oregon State University, Corvallis

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

Ross Powell *(ross@geol.niu.edu),* Northern Illinois University, DeKalb

Louise Huffman *(lhuffman@andrill.org),* University of Nebraska–Lincoln

Linda M. Morris *(linda.m.morris@dartmouth.edu),* Dartmouth College, Hanover, N.H.

Cristina Takas-Vesbach *(cvesbach@unm.edu),* The University of New Mexico, Albuquerque

Slawek Tulaczyk *(tulaczyk@pmc.ucsc.edu),* University of California, Santa Cruz

Michael Gooseff *(mgooseff@ungr.psu.edu),* The Penn State University, University Park

For description, see Volume 1, page 64.

2:00–3:00 PM Social

ExploraVision Ice Cream Social and Information Session

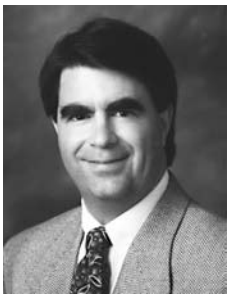
Golden Gate Salon B, Marriott

Discover elements of winning ExploraVision projects and succeeding in this leading K–12 science competition while enjoying an afternoon treat and a chance to win a Toshiba product door prize. Gain insight into the rules, developing innovative project ideas, and getting students involved and recognized. Visit *www.exploravision.org* for more information.

2:00–3:00 PM American Geophysical Union (AGU) Lecture

Our Eye on the Sun: The Latest from SDO (Solar Dynamics Observatory) (Earth)

(General) *104, Moscone Center*



J. Todd Hoeksema *(jthoeksema@solar.stanford.edu),* Senior Scientist, W.W. Hansen Experimental Physics Laboratory, Stanford University, Stanford, Calif.

The Sun is constantly changing in dramatic ways———from sunspots to solar flares. The Solar Dynamics Observatory observes our star continuously, revealing mysteries of the deep interior and the incredibly hot atmosphere. How can we peer inside a star? What causes the solar cycle? How does the Sun store and release energy? How does the energy reach our planet and affect our lives? Spectacular movies are just the beginning.

J. Todd Hoeksema is a member of the Solar Observatories Group at the W.W. Hansen Experimental Physics Laboratory, which is associated with the Physics and Applied Physics departments at Stanford University. He has been at Stanford since 1978 where he earned his PhD. In 2006, Dr. Hoeksema was awarded a NASA Distinguished Public Service Medal for his leadership in Sun-solar system connection science and of NASA's committee to create a 30-year road map for heliophysics research.

Hoeksema is currently a co-investigator on the Helioseismic and Magnetic Imager for the Solar Dynamics Observatory mission that was launched in 2010. Mission experiments include measurements of the interior of the Sun, the Sun's magnetic field, the hot plasma of the solar corona, and the irradiance that creates the ionospheres of the planets.

He has also assisted Lockheed-Martin with designing, building, and testing the Michelson Doppler Imager on the SOHO spacecraft. He recently chaired the Solar Physics Division of the American Astronomical Society and currently heads the Solar Observatory Council that oversees the activities of the National Solar Observatory. His solar career began as a resident observer at the Wilcox Solar Observatory of which he is now a co-director.

NSTA is grateful to American Geophysical Union for sponsoring this session.

2:00–3:00 PM Presentations

SESSION 1

NSTA Press Session: Spotlighting Books Co-Published by NSTA and NSELA and How to Use Them to Build Stronger Science Programs, K–16 (Gen)

(General) *Continental 9, Hilton*

Jack Rhoton *(rhotonj@etsu.edu),* East Tennessee State University, Johnson City

Pat Shane *(pshane@email.unc.edu),* NSTA Retiring President, and The University of North Carolina at Chapel Hill

We will examine the six books that have been co-published by NSTA and NSELA, focusing on how these resources can be used to build stronger K–16 science education programs. Plus—a special spotlight on the newest books.

SESSION 2

Professional Learning, Instructional Improvement, and Student Learning: Lessons Learned from an Elementary Science Education District Reform Model (Gen)

(General) *Golden Gate 1, Hilton*

Vanessa Lujan *(vlujan@berkeley.edu)* and **Rena Dorph** *(rdorph@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley

Pam Tambe *(ptambe@iverness-research.org),* Iverness Research, Inc., Iverness, Calif.

Explore the outcomes of one district science reform model and insights into improving science support and instruction at your school site and district.

SESSION 3

Science Poetry in Two Voices: Action Research Findings (Gen)

(Elementary) *Golden Gate 2, Hilton*

Wendy M. Frazier *(wfrazier@gmu.edu),* George Mason University, Fairfax, Va.

Learn how "poetry in two voices" can be used to support elementary students' science investigations. We'll share action research findings.

SESSION 4

Using NOAA and NASA Data to Teach About Weather and Climate (Earth)

(Middle Level) *Golden Gate 5, Hilton*

Ted Willard, AAAS Project 2061, Washington, D.C.

Presider: Patrick McQuillan *(mcquillan@iris.edu),* IRIS, Washington, D.C.

These web tools developed by Project 2061 let middle school students analyze data from NOAA and NASA to learn about weather and climate.

SESSION 5

Strengthening Collaborations Among Presidential Awardees (Gen)

(General) *Golden Gate 7, Hilton*

Kenneth L. Huff *(khuff@williamsvillek12.org),* Williamsville (N.Y.) Central School District

David Pagni *(dpagni@fullerton.edu),* California State University, Fullerton

Learn about new methods being explored to mentor nominees for the Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST).

SESSION 6

NSTA Press Session: Uncovering Student Ideas in Physical Science: Electricity and Magnetism (Phys)

(Supervision/Administration) *Golden Gate 8, Hilton*

Rand Harrington *(rharrington@blakeschool.org),* The Blake School, Hopkins, Minn.

Presider: Page Keeley *(pagekeeley@gmail.com),* 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta

Learn how formative assessment probes can be used to reveal K–16 students' and teachers' commonly held ideas about electricity and magnetism while enhancing teaching and learning.

SESSION 7

CSSS Session: Implications and Uses of Resources from the National Research Council (Gen)

(General) *Union Square 13, Hilton*

Thomas E. Keller *(tkeller@nas.edu)* and **Michael A. Feder** *(mfeder@nas.edu),* National Research Council, Washington, D.C.

Explore some NRC resources and discuss their use in K–12 and college classrooms, their implications for policy today, and their direction for setting tomorrow's policies.

SESSION 8 (two presentations)

(High School–College) *Union Square 17/18, Hilton*

SCST Session: Meeting the Challenges of Teaching Inquiry in Introductory Biology Courses at Two- and Four-Year Colleges (Bio)

Donald P. French *(dfrench@okstate.edu),* Oklahoma State University, Stillwater

Linda Crow *(lcrow@lonestar.edu),* Lone Star College–Montgomery, Conroe, Tex.

Discuss barriers to implementing inquiry into introductory college biology courses. Both two-year and four-year perspectives will be presented.

SCST Session: NSF Funding Opportunities and the Evolving Face of STEM Education (Gen)

V. Celeste Carter *(vccarter@nsf.gov),* National Science Foundation, Arlington, Va.

Discuss recommendations for effective STEM education strategies and receive an overview of funding opportunities in NSF's education and human resources directorate.

SESSION 9

Teaching Physics and Related STEM Subjects Using Electric Guitars (Phys)

(High School–College) *Union Square 22, Hilton*

Debbie A. French *(frenchd@npschools.org),* New Philadelphia High School, New Philadelphia, Ohio

Tom Singer, Sinclair Community College, Dayton, Ohio

These inquiry-based activities and labs use the electric guitar to teach physics and related STEM content.

SESSION 10

Pittsburgh Science and Technology Academy: Lessons Learned While Designing a New School (Gen)

(Middle Level–College/Supervision) *Union Square 25, Hilton*

Judith R. Hallinen *(jh4p@andrew.cmu.edu),* Carnegie Mellon University, Pittsburgh, Pa.

At Pittsburgh SciTech, students dream, discover, and design. Learn about the three-year research/design process that led to a new program for grades 6–12.

SESSION 11

How to Make Sense with Unit Conversion and Dimensional Analysis (Chem)

(High School–College) *Yosemite A, Hilton*

Wai S. Chan *(waisum.chan@yahoo.com),* W.P. Clements High School, Sugar Land, Tex.

Why do students always think dimensional analysis is so difficult? I'll help you fill the gap for student success!

SESSION 12

Fantastic Demos! (Chem)

(Middle Level–College) *Golden Gate Salon A, Marriott*

Glenn F. Brooks *(brooksg@lmsd.org)* and **Lawrence McAfoos** *(mcafoosl@lmsd.org),* Lower Merion High School, Ardmore, Pa.

Take home a CD with instructions for preparing and performing fascinating, exciting, and unusual chemistry demonstrations.

SESSION 13

FDA Follow-Up Session: The Science of Food Safety (Bio)

(General) *Golden Gate Salon C1, Marriott*

Alan Tart *(alan.tart@fda.hhs.gov),* U.S. Food and Drug Administration, Atlanta, Ga.

Learn about the scientific basis for bacterial growth in food, how it is monitored, and steps taken to reduce it. Handouts provided.

SESSION 14

NOAA Follow-Up Session: Global Climate Change Impacts in the United States (Earth)

(Informal Education) *Pacific B, Marriott*

Katharine Hayhoe, Texas Tech University, Lubbock

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

Join us to discuss the latest findings on the impacts of climate change and receive ideas and resources for the classroom. The U.S. Global Change Research Program's report *Global Climate Change Impacts in the United States* provides the foundation for this session.

SESSION 15

AMSE Session: Engaging Middle School Students in STEM Through 21st-Century Skills (Gen)

(Middle Level) *Pacific F, Marriott*

Bobby J. Jeanpierre *(bjeanpie@mail.ucf.edu),* University of Central Florida, Orlando

Nirmala Ramlakhan *(nramlakhan@wcfla.com),* Workforce Central Florida, Orlando

Learn how to get students excited about STEM careers and discover practical ways to get industry partners to support STEM awareness among diverse student populations. Data from STEM summer camps will be presented.

SESSION 16

ASM Presents: Microbiology—A Flavor of San Francisco (Bio)

(General) *Pacific I, Marriott*

Steve Wagner *(swagner@sfasu.edu),* Stephen F. Austin State University, Nacogdoches, Tex.

David Mills *(damills@ucdavis.edu),* University of California, Davis

Presider: David J. Westenberg *(djwesten@mst.edu),* Missouri University of Science and Technology, Rolla

Microorganisms produce many of the foods and beverages that make San Francisco famous. Explore the microbiology of sourdough bread, wine, cheese, and other microbial delights.

SESSION 17

Using Dialogue and Art to Enhance Science Inquiry and Make Student Thinking Visible (Bio)

(Middle Level–High School) *Sierra A, Marriott*

Claire Hemingway *(chemingway@botany.org),* Botanical Society of America, St. Louis, Mo.

Carol Packard *(carolpackard@msn.com),* Sisters Middle School, Sisters, Ore.

Jeanne Debons *(jeannedebons@msn.com),* Central Oregon Community College, Bend

Allison Landry *(alandry@lsmsa.edu),* Louisiana School for Math, Science, and the Arts, Natchitoches

Learn how to use online dialogues with scientists and botanical illustrations of plants in the field and under the microscope as teaching and learning tools (*www.plantingscience.org).*

SESSION 18

Innovations in Green Design (Env)

(General) *Sierra I, Marriott*

Genevieve Nelson *(genn@gfsnet.org),* Germantown Friends School, Philadelphia, Pa.

David Ade *(dma@smparchitects.com),* SMP Architects, Philadelphia, Pa.

Considering building a new science facility? Learn about innovations in green design, including sustainable materials, geo-exhange heating, and cooling and storm water management systems.

SESSION 19

Teacher Researcher Day Session: School Yard Notebooks Go Public Across Grade Levels (Env)

(Elementary) *Yerba Buena Salon 8/Group 1, Marriott*

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

We structured school yard observations and scaffolded writing skills with science concepts, enabling elementary students to make their thinking public through discourse and podcasts.

SESSION 20

Teacher Researcher Day Session: Teacher Researchers in the Science Classroom (Gen)

(General) *Yerba Buena Salon 8/Group 2, Marriott*

John Graves *(graves@montana.edu),* Montana State University, Bozeman

I'll present research projects, discussing purpose, methodology, analysis, and results as well as how our research has affected both teacher and student performance in the science classroom.

SESSION 21

Teacher Researcher Day Session: Multimodality and Learning: Exploring Concept Development and Student Engagement in a Physics Classroom (Phys)

(High School–College) *Yerba Buena Salon 8/Group 3, Marriott*

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

Let's examine the potential benefits and limitations that engagement within different modes of communication had on the teaching and learning of physics.

SESSION 22

Teacher Researcher Day Session: Using Action Research for Professional Development in a Math Science Partnership (MSP) Cohort (Gen)

(High School) *Yerba Buena Salon 8/Group 4, Marriott*

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

Through an MSP grant for professional development, a group of urban high school science teachers chose to do action research for the first time. I'll describe the process, successes, and problems.

SESSION 23 (two presentations)

(High School) *Yerba Buena Salon 15, Marriott*

Using POGIL Activities in a Conceptual Physics First Curriculum (Phys)

Thomas Cork *(tcork@spenceschool.org),* The Spence School, New York, N.Y.

Find out how we used Process-Oriented Guided Inquiry Learning (POGIL) activities in a conceptually based Physics First course. Activities provided.

Physics First: A Story of Adoption, Implementation, and Evaluation from 2007 to 2010 (Phys)

Karalyn Ramon *(kramon@loyolahs.edu),* **Craig Bouma** *(cbouma@loyolahs.edu),* and **Michael Lew,** Loyola High School of Los Angeles, Calif.

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

SESSION 24

NSTA Avenue Session: Using the Online Quiz Manager Tool (Gen)

(General) *113, Moscone Center*

Tyson Brown *(tbrown@nsta.org),* Director, SciLinks, NSTA, Arlington, Va.

Virginie L. Chokouanga, Customer Service and Database Administrator, SciLinks, NSTA, Arlington, Va.

The SciLinks Quiz Manager Tool allows your students to show what they have learned from the web resources SciLinks provides. Learn to create and distribute assignments.

SESSION 25

Using the 5Es to Improve Understanding of Science in Students with Special Needs (Gen)

(General) *200, Moscone Center*

Gregory J. Borman *(gborman@ccny.cuny.edu),* The City College of New York, N.Y.

Derek Ramdass *(dramdas@schools.nyc.gov),* New York City Dept. of Education/District 75, Brooklyn, N.Y.

Lionel Callender *(lionel387@aol.com),* P.S. Q993, Queens, N.Y.

Presider: Compton Mahase, Fieldston High School, Bronx, N.Y.

The 5Es model has been proven to develop learning, essential living skills, social interaction, and independence in students with special needs.

SESSION 26

An Arctic Connection: A Teacher Exchange Program Between U.S. and Swedish Educators (Gen)

(General) *208/210, Moscone Center*

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

A chance meeting at an NSTA conference developed into a successful exchange program between Swedish and U.S. teachers. Our focus: sustainable development and environmental education.

SESSION 27

Science Notebooking for the Early Grades (Gen)

(Elementary/Supervision) *224/226, Moscone Center*

Jenny H. Gammill *(jenny.gammill@fayar.net),* Fayetteville (Ark.) Public Schools

Christye Hudson *(christye.hudson@fayar.net),* Vandergriff Elementary School, Fayetteville, Ark.

Learn how to inspire your K–2 students to be scientists through science notebooks. Leave with strategies for immediate use.

SESSION 28

Engaging Your Grades 3–8 Students in the Digital Age with a Great Teaching Strategy and a Digital Suitcase (Gen)

(Elementary–Middle Level) *232/234, Moscone Center*

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

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

Technology doesn't make a teacher great. A great teacher uses engaging curricula and technology as tools. Get a digital suitcase and awesome strategy.

SESSION 29

Interactive Whiteboards, Datalogging Equipment, Computers…How to Integrate All the Technology into Your Classroom (Gen)

(General) *250, Moscone Center*

Lara L. Sharp *(larasharp2002@yahoo.com),* Lake Wales High School, Lake Wales, Fla.

Learn how to truly incorporate technology in your classroom to improve your teaching and student achievement.

SESSION 30

Building Literacy in Secondary Science (Gen)

(Middle Level–High School) *258/260, Moscone Center*

Elizabeth M. McDonald, Prince William County Schools, Manassas, Va.

Presider: Sarah Reeves Young *(sarahyoung@rowlandhall.org),* Rowland Hall Middle School, Salt Lake City, Utah

Active learning strategies for literacy development include scaffolded opportunities to read, write, and talk about science.

SESSION 31 (two presentations)
(General) *262, Moscone Center*

Assessment 2.0: Rethinking How We Assess Science Inquiry with Technology-based Assessments (Gen)

Jody Clarke-Midura *(jec294@mail.harvard.edu)* and **Jillianne Code** *(jillianne_code@gse.harvard.edu),* Harvard University, Cambridge, Mass.

We will demonstrate our technology-based assessments for measuring science inquiry. Our immersive assessments document inquiry processes as students develop hypotheses, conduct experiments, and analyze data.

Teaching Strategies to Support Reading and Descriptive Writing Skills on Open-Response Questions (Gen)

Timothy R. Gay, Brighton High School, Boston, Mass.

Here is a reading and descriptive writing skills intervention plan designed to improve student success on open response items on standardized tests. The plan consists of several key units that have been implemented across all content areas and courses within our high school science department.

2:00–3:00 PM Workshops

Take Two: A Molecular Story of Reprogrammed Stem Cells (Bio)
(High School–College) *Continental 1, Hilton*

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

Learn how proteins are used to reprogram adult cells into pluripotent stem cells—the theme for a Science Olympiad protein modeling event.

NSTA Press Session: *Picture-Perfect Science, Grades 3–6* (Gen)
(Elementary) *Continental 2, Hilton*

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

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

Making Flexbooks with *CK12.org Software* (Phys)
(General) *Continental 3, Hilton*

James H. Dann *(jamdann@gmail.com),* Menlo School, Menlo Park, Calif.

James J. Dann *(dannja22@hotmail.com),* Natomas Unified School District, Sacramento, Calif.

Make your own textbook to fit your students, or use our freely available online textbooks. The free software is easy to use. Bring your laptop.

Clear Skies Ahead: Clearing Up Confusion on Clouds (Earth)
(Elementary–Middle Level) *Continental 7, Hilton*

Tina J. Cartwright and **Katie A. McDilda** *(katie.mcdilda@marshall.edu),* Marshall University, Huntington, W.Va.

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

Compost: The Rot Thing for Our Earth (Earth)
(Preschool–Elementary) *Golden Gate 3, Hilton*

Fred Estes and **Carolee Fucigna** *(cfucigna@nuevaschool.org),* The Nueva School, Hillsborough, Calif.

Build Earth awareness and activism in young students through the use of classroom composting and gardening to integrate science, math, and social studies.

Cotton with a Twist (Env)
(Elementary–Middle Level) *Golden Gate 4, Hilton*

John W. Fedors *(jfedors@wavecable.com),* Science Activities, Lincoln, Calif.

Dissect a cotton boll, examine a fabric's microscopic composition, explore the interdisciplinary curriculum potential, and imagine a day without cotton.

Shades of Green (Gen)
(Preschool–Elementary) *Golden Gate 6, Hilton*

Glenda M. McCarty *(glendamccarty@gmail.com)* and **Jennifer Hope,** University of Missouri, St. Louis

You and your students will be amazed by the shades of green that surround your school yard. This multidisciplinary investigation incorporates science, art, journals, and literacy.

Students' Continuous Self-Assessment Powers Learning of Inquiry-based Science (Gen)
(Elementary–Middle Level) *Union Square 3/4, Hilton*
Rebecca E. Dyasi, Long Island University, Brooklyn, N.Y.
Hubert M. Dyasi, Retired Educator, Yonkers, N.Y.
Students' progressive self-assessment of their own work empowers them in successfully learning inquiry-based science. Learn about a teacher professional development model and evidence supporting the claim.

NARST Session: Drawing Your Way from Research to the Classroom (Gen)
(General) *Union Square 5/6, Hilton*
J. Randy McGinnis *(jmcginni@umd.edu)* and **Kelly Riedinger** *(krieding@umd.edu),* University of Maryland, College Park
Phyllis Katz *(pkatz15@gmail.com),* Retired Educator, Silver Spring, Md.
Pick up a pencil or crayon and try out an engaging method of gathering data. This workshop will use drawings as a self or student assessment tool.

Developing Critical Thinkers Through Inquiry Explorations and Quality Children's Literature (Gen)
(Elementary–Middle Level) *Union Square 19/20, Hilton*
Martha M. Day *(martha.day@wku.edu)* and **Tadayuki Suzuki** *(tadayuki.suzuki@wku.edu),* Western Kentucky University, Bowling Green
Participate in 5E inquiry explorations that incorporate children's science-based literature and skill-based activities.

Using Smart Meter Technologies to Spark Student-led Citizen Science Projects (Gen)
(Middle Level) *Union Square 23/24, Hilton*
Lynn C. Farrin, Maine Mathematics and Science Alliance, Augusta
Alan D. Lishness *(alan@gmri.org),* Gulf of Maine Research Institute, Portland
Using data from utility smart meters and energy monitoring devices, students investigate electrical energy use and ways to reduce consumption in school and at home.

Creative Circuitry (Phys)
(Elementary–Middle Level/Informal) *Nob Hill B, Marriott*
Lisa Regalla *(lregalla@tpt.org),* Twin Cities Public Television, St. Paul, Minn.
Looking for fun ways to teach circuits? Play with conductive and insulating dough to sculpt circuits and explore activities that add a twist to teaching.

Seeing the Invisible (Gen)
(Middle Level–High School) *Nob Hill C, Marriott*
Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.
How do we "see" something that exists but is not visible? We'll explore the properties of light waves—from radio to ultraviolet—in an effort to answer this question.

Engineering Design Challenge: The Search for Life (Gen)
(Middle Level–High School) *Nob Hill D, Marriott*
Edna DeVore and **Pamela Harman,** SETI Institute, Mountain View, Calif.
Explore the cross-curricular nature of astrobiology and how to incorporate astrobiology into your lessons. NASA materials provided.

DuPont Presents—Soil Erosion and Fertilizer Testing in Runoff (Gen)
(Middle Level–High School) *Pacific A, Marriott*
Donna Parker *(dcall@zoomnet.net),* Coffman High School, Dublin, Ohio
Melissa Bonifas *(mbonifas@esu9.org),* Blue Hill High School, Blue Hill, Neb.
Presider: Peggy Vavalla *(marguerite.e.vavalla@usa.dupont.com),* DuPont, Wilmington, Del.
How will we feed the world? How will we maintain a sustainable environment for increased food production in the U.S. and other countries? Investigate what happens when excess rainwater flows over a field that has been recently fertilized.

Immunology…It's Child's Play! (Bio)
(High School) *Pacific H, Marriott*
Peggy Deichstetter *(pdeichstetter@yahoo.com),* St. Edward High School, Elgin, Ill.
These fun, inexpensive activities and games explain the difficult concepts of the immune system. Handouts.

Using Metacognition and Formative Assessment to Improve Student Learning in Chemistry (Chem)
(Middle Level–College) *Pacific J, Marriott*
Angela R. Powers, Metropolitan State College of Denver, Colo.
Cece Schwennsen *(cece_schwennsen@cate.org),* Cate School, Carpinteria, Calif.
Learn how to incorporate metacognitive strategies and formative assessment in introductory chemistry.

Rockets: Launching a Cross-Curriculum Program for Your School (Earth)
(Middle Level–High School) Walnut, Marriott
Kelly A. Jolley, La Academia de Esperanza, Albuquerque, N.Mex.
Learn how to create a cross-curriculum program at your school that explores the principles of rocketry and mathematics and incorporates technology, engineering, English, history, and art.

PDI **SEPUP Pathway Session: Integrating World Health Issues into High School Cell Biology (Bio)**
(High School) Yerba Buena Salon 4, Marriott
Laura Lenz and **Maia Willcox** *(mwillcox@berkeley.edu),* Lawrence Hall of Science, University of California, Berkeley
Participate in activities that integrate issues related to world health and cell biology into a standards-based biology unit.

JetStream: An Online School for Weather (Earth)
(Informal Education) Yerba Buena Salon 11, Marriott
Dennis R. Cain *(dennis.cain@noaa.gov),* National Weather Service, Fort Worth, Tex.
Discover a National Weather Service online resource for learning the basic how's and why's of weather. JetStream includes lesson plans/activities for the classroom.

Using Scientific Argumentation to Foster Science Learning in the Classroom! (Env)
(Middle Level–High School) Yerba Buena Salon 12/13, Marriott
Barry W. Golden and **Beth Kostka** *(bkostka@bio.fsu.edu),* Florida State University, Tallahassee
Get some hands-on experience with two examples of argument-driven inquiry. Examples include lessons on climate change and on deep time.

How Do You Know What They Know? Using Technology in Formative Assessments (Gen)
(Middle Level–High School) 111, Moscone Center
Karen LaFever and **Elegan Lee** *(elee@pkwy.k12.mo.us),* Parkway North High School, Creve Coeur, Mo.
Formative assessments are imperative if the teacher is to truly leave no child behind. Technology can help instructors quickly ascertain student understanding.

Hearing Voices: Increasing Academic Language and Science Content Through Accountable Conversation (Gen)
(General) 112, Moscone Center
Alana Morris *(alana.morris@springbranchisd.com),* Spring Branch Independent School District, Houston, Tex.
Explore engaging classroom-tested strategies for helping students build an ear for academic language through intentional planned dialogue.

Wet and Wild World of Inquiry (Gen)
(General) 212, Moscone Center
April A. Chancellor *(april.chancellor@msichicago.org),* Museum of Science and Industry, Chicago, Ill.
Explore inquiry through hands-on water-related activities with the Museum of Science and Industry. Free lessons and resources!

Radiation Storm *vs.* the Magnetic Shield: Superheroes of Magnetism and Space Weather Education (Earth)
(Informal Education) 220/222, Moscone Center
Roberta Johnson *(rmjohnsn@nestanet.org),* National Earth Science Teachers Association, Boulder, Colo.
David Mastie *(mastie@umich.edu),* Retired Educator, Chelsea, Mich.
Explore the basics of magnetism, Earth's magnetic field and poles, and space weather with these tested hands-on activities and resources. Handouts provided.

✔ **Simple Machines Made Simple! (Phys)**
(Elementary–Middle Level) 228/230, Moscone Center
Jennifer M. Edginton *(jennifer.edginton@msichicago.org)* and **Laura Rico-Beck** *(laura.rico-beck@msichicago.org),* Museum of Science and Industry, Chicago, Ill.
Learn how to teach simple machines using everyday classroom objects. Free lesson plans and prizes.

2:00–3:00 PM Exhibitor Workshops

Learning AP* Science Concepts with NASA and Texas Instruments (Gen)

(Grades 9–12) *110, Moscone Center*

Sponsor: Texas Instruments

Todd D. Morstein *(morsteint@sd5.k12.mt.us),* Glacier High School, Kalispell, Mont.

Natalee D. Lloyd, NASA Johnson Space Center, Houston, Tex.

Give real out-of-this-world context to your AP science lessons with actual data from several NASA space shuttle missions. Students explore cause-and-effect relationships with interactive virtual space shuttle simulations and analyze real NASA data while learning AP science concepts right on their TI-Nspire™ handheld! This novel way of learning challenging science topics is sure to engage, excite, and encourage your students to solve actual NASA challenges in physics, chemistry, and biology AP courses.

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Physics for Everyday Thinking (PET) and Physical Science for Everyday Thinking (PSET) (Phys)

(College) *307, Moscone Center*

Sponsor: It's About Time

Robert H. Poel, Professor Emeritus, Kalamazoo, Mich.

PET and PSET are one-semester guided inquiry courses for prospective and practicing elementary and middle school teachers and general education college students. These courses focus on the themes of interactions, conservation of energy, Newton's Law, and (for PSET) atomic-molecular theory. They include Learning About Learning activities where students either reflect on their own learning, the learning of younger children (using elementary videos), or the learning of scientists (the history and nature of science).

2:00–3:15 PM Exhibitor Workshops

Technological Design Using STEM Initiatives (Gen)

(Grades K–8) *123, Moscone Center*

Sponsor: Delta Education/School Specialty Science

Johanna Strange, Consultant, Richmond, Ky.

Tom Graika, Consultant, Lemont, Ill.

Students learn best when both their minds and hands are engaged in classroom activities. A problem-solving approach to teaching promotes this kind of learning. Delta Science Modules and technological activities that support STEM initiatives illustrate strategies that lead to learning. Participants will receive a resource packet.

Inquiry Investigations™ Forensics Science Curriculum Module and Kits (Gen)

(Grades 7–12) *124, Moscone Center*

Sponsor: Frey Scientific/School Specialty Science

Lou Loftin, Consultant, Reno, Nev.

Using our new Inquiry Investigations forensic series with more than 55 activities, students learn foundational analysis skills that help them solve multifaceted cases. See how program software allows the preparation of web-based content, along with individualized assessment. Participants will perform skill-based investigative techniques and case investigations and receive a program resource CD and correlations.

2:00–3:30 PM Reception

NSTA District Meet and Greet in Honor of Wendell G. Mohling

Exhibit Hall, Moscone Center

Join us in the exhibit hall for light refreshments, networking, and your chance to get to know your NSTA leadership! Discover ways to get and stay involved in all the workings of NSTA at the local, regional, and national levels. This event is graciously sponsored by LEGO Education.

2:00–3:30 PM Featured Panel

Improving STEM Teaching and Education: A Superintendents' Symposium (Gen)
(General) *103, Moscone Center*

Moderator
Elizabeth K. Stage
Director
Lawrence Hall of Science
University of California
Berkeley, Calif.
stage@berkeley.edu

An expert panel of school superintendents will discuss and recommend how to improve STEM teaching and learning, as well as associated challenges.

Panelists:
Carlos Garcia, Superintendent, San Francisco (Calif.) Unified School District

William M. Habermehl *(bhabermehl@ocde.us),* Superintendent, Orange County Dept. of Education, Costa Mesa, Calif.

Kevin Harrigan *(kharrigan@nusd.k12.ca.us),* Superintendent, Newark (Calif.) Unified School District

Steve Stavis *(sstavis@scusd.net),* Superintendent, Santa Clara (Calif.) Unified School District

Elizabeth K. Stage is director of the Lawrence Hall of Science at the University of California, Berkeley. Before earning a doctorate in science education from Harvard University, she taught middle school science and mathematics. Prior to becoming its director in 2003, Stage did research and evaluation and led professional development and public programs in mathematics and computer education primarily at the Hall. In addition, she has worked on state, national, and international standards and assessments in mathematics and science and was director of critique and consensus at the National Research Council when the National Science Education Standards were being developed.

Carlos A. Garcia began his tenure in 2007 as superintendent of the San Francisco Unified School District (SFUSD). Under his leadership, the district has seen consistent improvement in achievement for all students, including increased academic gains for Latino and African-American students. Prior to SFUSD, he was vice president of Urban Advisory Resources for McGraw-Hill Education. His career in education spans more than 35 years, with positions as high school teacher and principal for several schools. He also has led several large urban school districts, including the Clark County School District in Nevada, which was the fifth largest and fastest-growing school district in the nation during his tenure, averaging one new school opening per month.

William M. Habermehl has been elected for three terms as superintendent of schools for the Orange County Department of Education, leading a group of 3,000 employees in their efforts to provide world-class education for more than 500,000 children. He began his career in education more than four decades ago as a science teacher and football coach. His television show Spotlight on Education *demonstrates his sleight of hand at magic and promotes innovative teaching. Habermehl also serves on the boards of the Orange County Business Council, the Discovery Science Center, United Way, and Drug Abuse is Life Abuse.*

Kevin E. Harrigan was appointed superintendent for the Newark Unified School District in July 2008. Prior to that, he was the associate superintendent of Educational Services where he was responsible for curriculum and instruction, assessment, student services, special education programs, and principal supervision. Harrigan has taught students at every level, from prekindergarten through graduate level, and he holds teaching certificates in early childhood education as well as elementary and secondary instruction. He currently serves as faculty for the National Science Resource Council's Professional Development Institute at the Smithsonian Institute.

Steve Stavis began his career in 1965 as a middle school teacher in White Plains, New York. Since 2008, he has been superintendent for the Santa Clara Unified School District. Santa Clara Unified School District serves more than 13,000 K–12 students, and an additional 18,000 students in preschool through adult education. Stavis has held various positions within the school district since 1991, beginning as principal at Bowers Elementary School, then principal at Cabrillo Middle School, and continuing to assistant superintendent. Prior to that, Stavis was a teacher, principal, assistant superintendent, and interim superintendent at the Union School District in San Jose, California.

2:00–3:30 PM Exhibitor Workshops

Fast Gels for Fast Times **(Bio)**
(Grades 9–12) *120, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Run DNA fingerprinting gels in as little as 15–18 minutes! Gain hands-on experience with Carolina's new Fast Gels Kit, which includes both environmental forensic and genetic screening scenarios.

Need "Energy" in Your Environmental Classes? Learn About Carolina's New Inquiries in Science® (Env)
(Grades 9–12) *121, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Looking for relevant, exciting lab activities for environmental science? Investigate climate change and explore alternative energy sources in this inquiry-based workshop. Carolina's Inquiries in Science Environmental Series provides hands-on activities to make teaching challenging topics effortless. Free teacher materials and door prizes!

What Is a Species? **(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 inquiry activity from the evolution unit, participants explore the biological species concept and factors that can lead to speciation.

Harmonic Motion and Hooke's Law with CPO's Springs and Swings **(Phys)**
(Grades 5–12) *131, Moscone Center*
Sponsor: CPO Science/School Specialty Science
Erik Benton, CPO Science/School Specialty Science, Nashua, N.H.
Explore the concepts of harmonic motion, oscillation, natural frequency, resonance, and Hooke's law with CPO Science's Springs and Swings. This equipment uses a swinging pendulum, two different extension springs, and one compression spring to make observations, measurements, and predictions in a hands-on investigation activity.

Voltaic Cells (Guided Inquiry Lab) **(Chem)**
(Grades 9–12) *132, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Get hands-on experience determining which combination of metals produces the "best" battery when you run a new lab from the Carolina™ Chemistry SPARKlabs collection. Developed jointly by PASCO and Carolina, this collection of 10 guided inquiry labs provides a standards-based, state-of-the-art science teaching solution to support your high school chemistry program. Additional labs from the collection will be demonstrated.

Middle School Earth Science: Learn Key Concepts Through Hands-On, Probeware-based Activities (Earth)
(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 Earth science standards when you conduct an activity from the Sally Ride Science™ SPARKlabs series. These activities from Sally Ride Science and PASCO cover the content you already teach through integrated, probeware-based guided inquiry lessons. The hands-on activity and related demonstrations will cover key concepts, including the Sun as the source of Earth's energy, and the related water cycle.

Free Classroom Resources from the Howard Hughes Medical Institute (HHMI) for Teaching Evolution (Bio)
(Grades 9–College) *134, Moscone Center*
Sponsor: Howard Hughes Medical Institute
Dennis Liu and **Jennifer Bricken** *(brickenj@hhmi.org),* Howard Hughes Medical Institute, Chevy Chase, Md.
Discover classroom-ready lessons, hands-on activities, animations, and video clips to help you teach central and difficult biological concepts such as molecular genetics and the evolution topics of selection, phylogenetic trees, and biodiversity. These resources engage students in guided inquiry, encouraging them to formulate questions that can be answered through scientific investigation, data collection, and pattern recognition.

Practical Reading Strategies for the Science Classroom **(Gen)**

(Grades 4–9) *202/204, Moscone Center*

Sponsor: The JASON Project/Immersion Learning/Nautilus Live

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

How can we teach science when our students can't read? This session addresses strategies to make the text "hands on," supporting students with reading challenges, such as students with special education needs and ESOL students. Whole-group reading, setting students up for independent success, and test-taking strategies will be discussed.

Layers of Learning with Google Earth: A Free Round-Trip Ticket to Anywhere in the World **(Gen)**

(Grades 5–12) *206, Moscone Center*

Sponsor: Discovery Education

DEN Team Member

Google Earth has many layers, literally! Come explore the layers within Google Earth and see how you can use them in your instruction. Take students on virtual field trips that provide powerful geographic visualization—ruler tools, embedded videos, overlays of images that make the actual terrain of Earth a part of the learning experience, and more. We'll investigate up-to-date seismic activity, weather data, sea surface temperatures, and 3-D buildings…and learn how to add our own customized content.

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

(Grades 9–12) *256, Moscone Center*

Sponsor: Key Curriculum Press

Angy Stacy *(astacy@calmail.berkeley.edu)* 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 molecular structure and other core chemistry concepts through a smell context. Sample lessons from Living By Chemistry provided.

ScholAR's Got a Brand-new Bag and It's RED! **(Chem)**

(Grades 9–12) *270/272, Moscone Center*

Sponsor: ScholAR Chemistry

Paul Schneeberger *(pschneeberger@vwreducation.com),* ScholAR Chemistry, Tonawanda, N.Y.

Learn how to incorporate fun and exciting inquiry activities easily into your classroom using ScholAR's new In-the-Bag Inquiry Activity series. These easy-to-perform demonstrations are designed to engage students and then incorporate guided inquiry exercises so students can further explore and understand concepts. Learn how to perform a variety of In-the-Bag inquiry demonstrations and learning activities.

Jumpin' Protein Flash: Protein Spectrophotometry in Biotech **(Bio)**

(Grades 9–12) *274/276, Moscone Center*

Sponsor: Sargent-Welch

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

As a product of biotechnology, proteins are the workhorses of cells. But how can these submicroscopic parts be measured in a solution? Using lab activities from the new edition of *Biotechnology: Science for the New Millennium* ©2011 by Ellyn Daugherty of the San Mateo Biotechnology Career Pathway, participants will use spectrophotometers to measure the amount of protein using indicators and graphing absorbance data. Copies of the PowerPoint presentation and details on how to receive free copies of the new edition provided.

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

(Grades K–8) *300, Moscone Center*

Sponsor: Houghton Mifflin Harcourt

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

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

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.

Earth Science with Vernier **(Earth)**
(Grades 7–12) *302, Moscone Center*
Sponsor: Vernier Software & Technology
Robyn Johnson *(info@vernier.com)* and **Matt Anthes-Washburn** *(info@vernier.com),* Vernier Software & Technology, Beaverton, Ore.
Experiments such as exploring magnetism, acid rain, and comparing UV protection of sunglasses from our popular *Earth Science with Vernier* lab book will be performed in this hands-on workshop. You will be able to try these experiments using LabQuest.

3-2-1 Blast Off! **(Gen)**
(Grades 1–8) *303, Moscone Center*
Sponsor: Educational Innovations, Inc.
Tami O'Connor *(info@teachersource.com),* Educational Innovations, Inc., Norwalk, Conn.
What student doesn't like a little burst of energy? Join Tami O'Connor of Educational Innovations in this exploration of things that go bump in the day! This workshop is designed for elementary and middle school teachers responsible for teaching energy or Newton's laws. Lesson ideas, giveaways, and door prizes!

Teaching AP Chemistry: Optimize Your Students' Laboratory Experiences **(Chem)**
(Grades 9–12) *304, Moscone Center*
Sponsor: Flinn Scientific, Inc.
Scott Stahler, Flinn Scientific, Inc., Batavia, Ill.
What makes a good AP chemistry lab experiment? It's one that stimulates students to think about principles conceptually so that they can explain and predict the behavior of matter at any level, from the microscopic to the macroscopic. Perform an experiment from *Laboratory Experiments for Advanced Placement Chemistry*, available from Flinn Scientific, and view interactive demonstrations based on the AP Chemistry Review. Handouts.

Practical and Effective Inquiry in *Pearson Chemistry* ©2012 **(Chem)**
(Grades 9–12) *305, Moscone Center*
Sponsor: Pearson
Ed Waterman, Retired Educator, Fort Collins, Colo.
The most successful chemistry text just got better! Besides the best text in both digital and print form, we use a small-scale and virtual chemistry laboratory to promote effective inquiry and help students learn to design and carry out experiments to solve problems.

2:00–4:00 PM Workshop

PDI **BSCS Pathway Session: Using Science Notebooks to Develop Conceptual Understanding in Science** **(Gen)**
(General) *Yerba Buena Salon 2, Marriott*
Connie Hvidsten, BSCS, Colorado Springs, Colo.
Looking for ways to help your students construct a coherent understanding of science content? In this hands-on session, learn how science notebooks can be used as an effective sense-making and assessment tool in the science classroom.

2:00–5:00 PM Presentation

SESSION 1
Informal Science Day Share-a-Thon **(Gen)**
(General) *Yerba Buena Salon 9, Marriott*
Elizabeth Mulkerrin, NSTA Director, Informal Science, and Omaha's Henry Doorly Zoo, Omaha, Neb.
Kelly V. Beck *(kbeck@stanford.edu),* Stanford University, Stanford, Calif.
Marcelo Caplan *(mcaplan@colum.edu),* Columbia College Chicago, Ill.
Steven L. Compton *(steve.compton@westtown.edu),* Westtown School, West Chester, Pa.
Deborah Franklin and **Patricia K. Freitag** *(director@hosprograms.org),* Hands On Science, Germantown, Md.
Maurice Godfrey *(mgodfrey@unmc.edu),* University of Nebraska Medical Center, Omaha
Eric Hamilton *(ehamilton@amnh.org),* American Museum of Natural History, New York, N.Y.
Janice Harvey *(jharvey@gemini.edu),* Gemini Observatory, Hilo, Hawaii
William Katzman *(wkatzman@ligo-la.caltech.edu),* California Institute of Technology, Livingston, La.
Cora Lee-Palmer *(cpalmer@mmsd.com),* Milwaukee Metropolitan Sewerage District, Milwaukee, Wis.
Katie Levedahl *(klevedahl@sciencenter.org),* Sciencenter, Ithaca, N.Y.
Lauren Lindskog *(lindskog@exploratorium.edu),* Exploratorium, San Francisco, Calif.
Jessica Neely *(scienceed@kqed.org),* KQED Public Media, San Francisco, Calif.
Rebecca Nellis *(becky.nellis@columbuszoo.org),* Columbus Zoo and Aquarium, Powell, Ohio
Lisa Regalla *(lregalla@tpt.org),* Twin Cities Public Television, St. Paul, Minn.
Maura Thompson, Thirteen/WNET, New York, N.Y.
Rick Worch *(eworch@bgsu.edu),* Bowling Green State University, Bowling Green, Ohio

Julie Yu *(jyu@exploratorium.edu),* Exploratorium, San Francisco, Calif.
Presider: Elizabeth Mulkerrin
Come to the lively Informal Science Share-a-Thon, where informal science educators will showcase their programs and resources, and share ideas with the science education community.

2:10–3:30 PM Exhibitor Workshop

21st-Century Explorer (Earth)
(Grades 3–5) *309, Moscone Center*
Sponsor: NASA Education
Nubia Carvajal *(nubia.a.carvajal@nasa.gov),* NASA Johnson Space Center, Houston, Tex.
Learn about 12 informal hands-on STEM activities designed to answer questions about space exploration. Each includes PowerPoint images and video designed to capture the excitement of NASA exploration.

2:30–3:00 PM Presentation

SESSION 1
Practical Strategies to Improve Science Literacy (Gen)
(Middle Level–High School) *252/254, Moscone Center*
Lillian L. Sims *(simslil@cps-k12.org),* Cincinnati (Ohio) Public Schools
An urban high school uses these practical reading and writing strategies to improve science literacy and student achievement.

2:30–4:00 PM Exhibitor Workshop

Science Notebooking: Integrating Writing and Science Through Catastrophic Events (Gen)
(Grades 6–8) *122, Moscone Center*
Sponsor: Carolina Biological Supply Co.
Carolina Teaching Partner
Enhance students' language and math by incorporating notebooks in the classroom. Research shows students who record their classroom experiences take more responsibility for their learning while increasing scores in reading, writing, mathematics, and communication. Walk away with material from the STC Program™ that will help promote notebooking in your classroom.

3:00–4:00 PM Meeting

CESI President's Roundtable
(By Invitation Ony) *Union Square 14, Hilton*

3:00–4:30 PM Social

NMLSTA Ice Cream Social
Continental 6, Hilton
An invitation to all middle level educators interested in promoting innovative science education. Come meet, network, share ideas, get involved! Best of all, enjoy the ice cream!

3:00–4:30 PM Exhibitor Workshop

Finding Funds for Biotech: Grant-writing Workshop (Bio)
(Grades 7–College) *308, Moscone Center*
Sponsor: Bio-Rad Laboratories
Stan Hitomi *(biotechnology_explorer@bio-rad.com),* San Ramon Valley Unified School District, Danville, Calif.
Whether you are looking to introduce a few hands-on labs or build an entire biotechnology program at your school, this session will prepare you to get started immediately to turn your dreams into a reality. Take home grant-writing tools, including samples of proposals, letters of support, and budgets. For a practical application of the new tools, participants are encouraged to submit proposals for a competitive grant from Bio-Rad for $500 in materials.

3:00–5:00 PM Reception

GEMS Network Reception
Club Room, Marriott
Mingle with GEMS educators from around the country and explore new GEMS curricula, including the Ocean Science Sequence and GEMS for After School. All are welcome. Visit *www.lhsgems.org* for more information.

3:00–5:00 PM Meeting

International Advisory Board Meeting
Seacliff, Hilton

3:00–5:00 PM Exhibitor Workshop

FOSS Planetary Science for Middle School (Earth)
(Grades 5–8) *130, Moscone Center*
Sponsor: Delta Education/School Specialty Science–FOSS
Larry Malone, Alan D. Gould, and **Jessica Penchos,** Lawrence Hall of Science, University of California, Berkeley
How have we come to understand the solar system? How many other planetary systems are there and how do we find and explore them? These are some of the questions students engage in with the FOSS Planetary Science Course. This introduction will highlight new features, strategies, and content incorporated into the course.

3:30–4:00 PM Presentation

SESSION 1
Chloe's Personal Nutrition Guidebook: Discover Science, Literacy, and Technological Processes (Bio)
(Elementary/College) *Golden Gate 7, Hilton*
Coralee Smith *(smithcs@buffalostate.edu),* **Jennifer K. Grant** *(granjk81@mail.buffalostate.edu),* **Alicia J. Tripi** *(tripaj14@mail.buffalostate.edu),* and **Christopher R. Guidarelli** *(guidcr58@mail.buffalostate.edu),* Buffalo State College, Buffalo, N.Y.
Presider: Christopher R. Guidarelli
See the science, literacy, and technological processes used by Chloe, a second-grade student, to create a nutrition guidebook. Handouts.

3:30–4:30 PM Presentations

SESSION 1 (two presentations)
(Preschool–Elementary) *Golden Gate 2, Hilton*
Presider: Alice Horiba, El Marino Language School, Culver City, Calif.
Science for the Little Ones (Gen)
Nori Nagumo *(norikonagumo@ccusd.org),* El Marino Language School, Culver City, Calif.
Get children excited with these fun, simple preK–1 science activities.

Learning, Teaching, and Science Curricula in Preschool Contexts (Phys)
Reizelie Barreto-Espino, Towson University, Towson, Md.
We'll examine concepts of sound science curriculum and a pilot study's findings from preschool children, two and four years old.

SESSION 2
ITEAMS (Innovative Technology-Enabled Astronomy for Middle Schools) (Earth)
(Middle Level) *Golden Gate 5, Hilton*
R. Bruce Ward *(bward@cfa.harvard.edu),* Harvard College Observatory, Cambridge, Mass.
Jaimie Miller *(jlmiller@cfa.harvard.edu),* Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.
Use your laptop to operate robotic telescopes to acquire images of deep-space objects and then process the images. Learn how to assess students using this technology. Please bring your laptop.

SESSION 3
NSTA Press Session: Uncovering Student Ideas in Life Science (Bio)
(General) *Golden Gate 8, Hilton*
Page Keeley *(pagekeeley@gmail.com),* 2008–2009 NSTA President, and Maine Mathematics and Science Alliance, Augusta
This session will feature formative assessment strategies to promote learning and inform instruction in K–12 life sciences using the newest book in the *Uncovering Student Ideas* series.

SESSION 4
ASTE Session: Information, Networking, and Support for Preservice and New Teachers (Gen)
(General) *Union Square 13, Hilton*
Jon Pedersen *(jep@unl.edu),* University of Nebraska, Lincoln
David A. Wiley *(dwiley@lr.edu),* NSTA Director, Preservice Teacher Preparation, and Lenoir-Rhyne University, Hickory, N.C.
Come network with preservice teachers, new teachers, and science teacher educators as we talk about issues of importance to you.

SESSION 5

NSELA Session: Publishing in *Science Educator*, the NSELA Journal (Gen)

(General) *Union Square 21, Hilton*

Brenda Wojnowski *(bwojnowski@gmail.com)* and **David Wojnowski** *(david.wojnowski@unt.edu),* University of North Texas, Denton

Learn about publishing in *Science Educator*, Journal of the National Science Education Leadership Association. We will show examples of accepted articles and answer questions.

SESSION 6

Lessons from *Science and Children* Articles (Gen)

(General) *Union Square 22, Hilton*

Melissa Sleeper *(melissa.sleeper@indianriverschools.org),* Gifford Middle School, Vero Beach, Fla.

Linda Froschauer *(fro22@mac.com),* Field Editor, *Science and Children,* and 2006–2007 NSTA President, Westport, Conn.

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

Erica Napoleoni, Storm Grove Middle School, Vero Beach, Fla.

Megan Rademacher *(rademacher_m@summitcds.org),* The Summit Country Day School, Cincinnati, Ohio

Presider: Melissa Sleeper

Don't have time to develop lessons from the articles featured in *Science and Children*? Come to this share-a-thon of lessons developed from our magazine. Take home engaging lessons that are ready to use in your inquiry classroom. Door prizes will be awarded.

SESSION 7

Differentiating Instruction in the Science Classroom for All Learners (Gen)

(Elementary–High School) *Union Square 25, Hilton*

Nichole R. Thomas *(vvjrnthomas@mdeca.org),* Valley View Local Schools, Germantown, Ohio

Michele Hodson *(vvjrmhodson@mdeca.org),* Valley View Local Schools, Germantown, Ohio

Amanda Phillips *(vvjraphillips@mdeca.org),* Valley View Middle School, Germantown, Ohio

Looking for ways to engage students with disabilities in your science classroom? Here are some easy ways to differentiate lessons and activities. Resources to use Monday morning!

SESSION 8

The Science and Mathematics Teacher Imperative (Gen)

(General) *Yosemite A, Hilton*

Charles R. Coble and **Howard Gobstein** *(hgobstein@aplu.org),* Association for Public and Land-grant Universities, Washington, D.C.

Join us as we discuss a national strategy to increase the quantity, quality, and diversity of science and math teachers produced by America's public research universities.

SESSION 9

Inquiry-based Chemistry Labs on a Budget (Chem)

(High School) *Golden Gate Salon A, Marriott*

Jesse D. Bernstein *(bernsteinj@miamicountryday.org),* Miami Country Day School, Miami Shores, Fla.

These experiments require very little in the way of chemicals and equipment and are very effective tools for learning. Further, the experiments can be performed in a 50-minute class.

SESSION 10

Bring the "Magic of Hubble" into Your Classroom (Earth)

(Middle Level–High School/Inf) *Golden Gate Salon B, Marriott*

Caroline Goode *(good783@comcast.net),* Christa McAuliffe Center, Framingham, Mass.

Foster interest and build knowledge of space science, astronomy, and STEM careers with this slideshow and hands-on activity involving the imagery of Hubble.

SESSION 11

FDA Follow-Up Session: Science and Our Food Supply (Supplementary Curriculum) (Bio)

(Informal Education) *Golden Gate Salon C1, Marriott*

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

Learn about food safety and nutrition education material from FDA, and receive free copies of these resources. Content linked to the NSES.

SESSION 12

NOAA Follow-Up Session: Highlights from Ongoing Climate and Wetland Research in San Francisco Bay and at Other National Estuarine Research Reserves (Gen)

(General) *Pacific B, Marriott*

Sarah Ferner *(daviess@sfsu.edu),* San Francisco Bay National Estuarine Research Reserve, Tiburon, Calif.

Atziri O. Ibanez, NOAA National Estuarine Research Reserve System, Silver Spring, Md.

How will climate change impact oysters, marsh plants, and other inhabitants of estuaries? Get the scoop on research happening in San Francisco Bay right now!

SESSION 13

Field Trips: How to Get the Most Bang for Your Buck (Gen)

(General) *Pacific C, Marriott*

Patricia L. Pierce *(sciencelady@earthlink.net),* South Carolina Virtual Charter School, Myrtle Beach

Jaime C. Coomes Thom *(thom@scaquarium.org),* South Carolina Aquarium, Charleston

Presider: Patricia L. Pierce

Learn about the research that supports learning in informal environments and strategies for planning field trips that correlate to national and state standards.

SESSION 14

AMSE Session: Teachers and Scientists Working Together (Gen)

(Elementary–Middle Level) *Pacific F, Marriott*

Gloria Rodriguez Bañuelos *(grb@edreap.org),* REAP, Santa Ana, Calif.

Discuss results from a study describing how scientist-teacher teams integrated science and language for elementary-aged English language learner students. Instructional practices are applicable to all grade levels.

SESSION 15

Nourishing the Planet in the 21st Century (Bio)

(Elementary–High School) *Sierra A, Marriott*

Nancy Bridge *(nancy.bridge@ocps.net),* Olympia High School, Orlando, Fla.

Food, glorious food! Explore properties of soil, soil plant interactions, plant mineral nutrition, and fertilizer usage. Engage in ready-to-use hands-on lab activities and receive the Nutrients for Life curriculum for elementary, middle, and high school.

SESSION 16

Merging Local Resources and Cutting-Edge Technology (Env)

(Elementary–High School) *Sierra I, Marriott*

Hal A. Jenkins *(jenkinsh@district65.net),* Evanston/Skokie School District 65, Evanston, Ill.

Megan McDermott *(mcdermottmeg@district65.net),* Nichols Middle School, Evanston, Ill.

Jennifer Tobey *(tobeyj@district65.net),* King Lab School, Evanston, Ill.

Discover an award-winning interdisciplinary action-research curriculum that is easily replicable and technology infused. This middle school curriculum is centered around local environmental issues.

SESSION 17

Bring the Ocean into Your Classroom with Digital Media (Bio)

(Middle Level) *Willow, Marriott*

Andrea Aust *(scienceed@kqed.org),* KQED Public Media, San Francisco, Calif.

Incorporate media and marine science in your curriculum to teach science content standards, including the concepts of ecosystems, adaptations, and human impact on the environment.

SESSION 18

PDI **LHS Pathway Session: Affordances of Technology in Formative Assessment (Gen)**

(Elementary–Middle Level) *Yerba Buena Salon 6, Marriott*

Edys Quellmalz and **Mike Timms** *(mtimms@wested.org),* WestEd, Oakland, Calif.

Explore how SimScientists simulation-based science assessments support formative assessment through a series of embedded assessments that provide feedback to students and teachers. They can also make recommendations for you on the next instructional steps with your classroom.

SESSION 19 (two presentations)

(General) *Yerba Buena Salon 8/Group 1, Marriott*

Teacher Researcher Day Session: Using Technology to Reflect on Teaching Practices (Gen)

Janell N. Catlin *(jcatlin@tc.edu),* Teachers College, Columbia University, New York, N.Y.

Explore new ways to conduct reflective teaching practices in order to improve student learning and engagement in science.

Teacher Researcher Day Session: Science Futures: Building Science Education Leadership Capacity (Gen)

Eric S. Brunsell *(brunsele@uwosh.edu)* and **Michelle Fleming** *(flemingm@uwosh.edu),* University of Wisconsin, Oshkosh

Kevin J. Niemi *(kjniemi@wisc.edu),* University of Wisconsin–Madison

Pat Arndt *(parndt@berlin.k12.wi.us),* Berlin High School, Berlin, Wis.

Science Futures is a year-round professional experience for K–12 teachers. We'll describe the experience and present outcomes of the school-year action research process.

SESSION 20

Teacher Researcher Day Session: Formative Assessment in the High School Science Classroom: Teacher Inquiries About Supporting Student Learning (Gen)

(High School) *Yerba Buena Salon 8/Group 2, Marriott*

Jennifer Kersten *(jennifer.kersten@richfield.k12.mn.us),* Richfield High School, Richfield, Minn.

Urban high school teachers will share results of their action research on using formative assessment to support student learning.

SESSION 21 (two presentations)

(General) *Yerba Buena Salon 8/Group 3, Marriott*

Teacher Researcher Day Session: Impact of Competitive Collaborative Game Play on AP Physics (Phys)

Scott A. Holloway, California State University–Northridge, Westlake Village

This action research project studied the impact of competitive collaborative game play on AP physics students' academic achievement and attitude toward physics.

Teacher Researcher Day Session: Engaging Prospective Teachers in Physics and Literacy Learning (Phys)

Emily H. van Zee, Oregon State University, Corvallis

What does it mean to integrate physics and literacy learning? Take home handouts with example strategies and activities.

SESSION 22

Teacher Researcher Day Session: Action Research Using CSCS in a Summer School Secondary Classroom (Gen)

(General) *Yerba Buena Salon 8/Group 4, Marriott*

Mike G. Rivas *(mike.rivas@csun.edu),* California State University, Northridge

In this roundtable discussion, secondary teachers will share practical strategies for conducting action research.

SESSION 23 (two presentations)

(General) *Yerba Buena Salon 15, Marriott*

Publishing Science on YouTube (Phys)

Christine G. Hunt *(huntch@si.edu),* Washington International School, Potomac, Md.

Energize students! Publish their work on YouTube. Learn how to upload PowerPoint presentations—there are more steps than you would imagine. Students love it!

The Art and Science of Glass (Phys)

Deb A. Novak *(dnovak@manzanodayschool.org),* Manzano Day School, Albuquerque, N.Mex.

See how science intersects with the art of glassmaking—a unique school project made possible through the creative use of a Toyota Physics TAPESTRY Grant.

SESSION 24

NSTA Avenue Session: The NSTA Learning Center: Free Professional Development Resources and Opportunities for Educators (Gen)

(General) *113, Moscone Center*

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

Al S. Byers *(abyers@nsta.org),* Assistant Executive Director, e-Learning and Government Partnerships, NSTA, Arlington, Va.

Lost when it comes to finding online professional development resources? With more than 4,400 resources (25% of which are free) and quality professional development opportunities, the NSTA Learning Center has the answers! Attend and receive free access to some of the fee-based resources. (Ice cream treats provided.)

SESSION 25 (two presentations)
(General) *200, Moscone Center*
Presiders: Minoo Srivastava, W.A. Perry Middle School, Columbia, S.C., and Steve Canipe *(steve.canipe@waldenu.edu),* Walden University, Tucson, Ariz.

Teaching Strategies to Promote Real-World Thinking Skills (Gen)
Lucy Sennett, NBCT *(lucy.sennett@waldenu.edu),* Walden University, Brandon, Miss.
We'll look at hands-on teaching strategies to promote high-level, real-world thinking skills.

A SMARTer Way of Teaching Science (Gen)
Nathan Yon, W.A. Perry Middle School, Columbia, S.C.
Work SMARTer, not harder, to effectively and efficiently integrate technology in the classroom to provide students with engaging learning opportunities.

SESSION 26
Examining Effective Instructional Practices in Challenging Classroom Settings (Gen)
(General) *208/210, Moscone Center*
Ken Koga-Moriuchi, AUSSIE, Manhattan, N.Y.
We will examine effective instructional practices in challenging classroom settings such as creating relevancy, developing critical-thinking/communication skills, differentiation, and infusing pleasure into daily practices.

SESSION 27
Photosynthesis Strategies: The Foundation for Ecological Food Webs (Bio)
(Elementary–Middle Level) *220/222, Moscone Center*
Kerrie McDaniel, Joe Beth Spinks *(joye.spinks@gmail.com),* and **Kathryn Crawford** *(kathryn.crawford292@wku.edu),* Western Kentucky University, Bowling Green
Photosynthesis can be hard to teach. Here are some strategies for teaching essential photosynthesis concepts in exciting ways.

SESSION 28
Using Math and Science Notebooks to Improve Literacy Skills and Scientific Discourse (Gen)
(Elementary–Middle Level) *224/226, Moscone Center*
Gregory J. Borman *(gborman@ccny.cuny.edu),* The City College of New York, N.Y.
Sandra C. Jenoure *(sjenoure@schools.nyc.gov),* New York City (N.Y.) Dept. of Education
Examine the use of math and science notebooks to strengthen literacy skills and promote scientific discourse.

SESSION 29
Science Teaching in Second Life (Gen)
(General) *232/234, Moscone Center*
Linda S. Shore and **Paul Doherty** *(pauld@exploratorium.edu),* Exploratorium, San Francisco, Calif.
The Exploratorium is in Second Life. See what we've learned about virtual learning and take an online tour of the facilities and science education programs.

SESSION 30 (two presentations)
(General) *250, Moscone Center*

Technology Issues: Helping Students Critically Examine the Technology That Pervades Our Culture (Gen)
Jerrid W. Kruse *(jerridkruse@gmail.com),* Drake University, Des Moines, Iowa
Students, and even teachers, rarely consider the negative side effects of technology. Learn some of the issues and how to engage students with these ideas.

Technology Integration Tools to Enhance Learning (Gen)
Liz M. Castillo *(elcastil@ksbe.edu),* Kamehameha Middle School, Honolulu, Hawaii
See how technology is used in a 1:1 laptop middle school science classroom. I'll share projects, software applications, tools, and student examples.

SESSION 31 (two presentations)
(Middle Level–High School/Supv) *252/254, Moscone Center*
Presider: Lee Ann Nickerson *(lee.nickerson@jefferson.kyschools.us),* Jefferson County Public Schools, Louisville, Ky.

Equitable Assessment in Secondary Science Classrooms (Gen)
Edward R. Geaney *(egeaney@ucsc.edu),* University of California, Santa Cruz
We'll look at a framework and specific practices for equitably assessing student learning (with a focus on English learners) in secondary science classrooms.

Overcoming Entropy: One District's Path to a Cohesive Science Vision (Gen)
Scott Schneider *(scott.schneider@jefferson.kyschools.us),* **Miranda Messer** *(miranda.messer@jefferson.kyschools.us),* and **Tracy Ising** *(tracy.ising@jefferson.kyschools.us),* Jefferson County Public Schools, Louisville, Ky.
A large urban district developed a secondary science sequence for all students that allows access to an inquiry-based Physics First, chemistry, and biology experience.

SESSION 32
NSTA Avenue Session: Project-Based Learning Through Disney's Planet Challenge (Env)
(Elementary–Middle Level) *262, Moscone Center*
Sylvia Rodriguez, Alice Birney Waldorf Inspired School, Sacramento, Calif.
Julie Schnedler *(jschnedler@meposchools.org),* Mediapolis Community School, Mediapolis, Iowa
Learn about Project-Based Learning (PBL) opportunities from previous Disney's Planet Challenge (DPC) Grand Prize–winning teachers as they discuss their winning projects, provide tips for successfully engaging students, and offer advice on how to secure grants and funding for your own classroom projects. Presenters will share how they have independently raised thousands of dollars in classroom funding and give insight into their experience in creating engaging and successful PBL and environmental service lessons. Join the discussion and learn what you can do to help your classroom!

3:30–4:30 PM Workshops

Insulin: A Molecular Story About the Gene, the Protein, the Physiology, and Diabetes (Bio)
(High School–College) *Continental 1, Hilton*
Tim Herman *(herman@msoe.edu)* and **Margaret Franzen** *(franzen@msoe.edu),* Milwaukee School of Engineering, Milwaukee, Wis.
See how physical models and other visualizations can be used to tell a molecular story focused on insulin and glucose uptake.

Science Inquiry Using PhET: A Suite of Free Interactive Simulations (Chem)
(Middle Level–High School/Supv.) *Continental 3, Hilton*
Patricia Loeblein *(ploeblei@jeffco.k12.co.us)* and **Stephanie Chasteen** *(stephanie.chasteen@colorado.edu),* University of Colorado at Boulder
PhET's FREE interactive sims *(http://phet.colorado.edu)* help students understand science. Learn how the sims are designed and how to use them.

New Horizons: The Little Spacecraft That Could (Earth)
(Elementary–Middle Level) *Continental 7, Hilton*
Julie E. Taylor *(julie_taylor@eee.org),* NASA Educational Consultant, Victorville, Calif.
NASA's New Horizons mission is designed to help us understand the worlds at the edge of our solar system. Come join in the fun.

Stellar Bar Codes (Earth)
(High School–College/Informal) *Golden Gate 3, Hilton*
Donna L. Young *(donna.young@tufts.edu),* Chandra E/PO Office, Medford, Mass.
Pamela Perry *(pperry@lewistonpublicschools.org),* Lewiston High School, Lewiston, Maine
Doug Lombardi *(lombardi.doug@gmail.com),* Southern Nevada Regional Professional Development Program, North Las Vegas
Study spectra from different types of stars to learn about stellar temperatures and evolutionary history.

EarthKAM: Looking at Our Earth from Space (Env)
(Middle Level) *Golden Gate 4, Hilton*
Julie Miller *(jmillerirc@olatheschools.com),* Olathe District Schools/Sally Ride Science, Olathe, Kans.
Karen Flammer *(flammer@ece.ucsd.edu),* University of California–San Diego, La Jolla
Explore our changing Earth through inquiry-based activities that use digital images from NASA's ISS EarthKAM.

Sharing a Small World: Activities on People, Resources, and the Environment (Env)
(Elementary) Golden Gate 6, Hilton
Carol Bliese *(cbliese@popconnect.org),* Population Connection, Washington, D.C.
Discover interdisciplinary activities that help elementary students appreciate the importance of sharing finite resources. Participate in games, simulations, role-playing, and simple labs. Free materials!

Integrating Simulation-based Science Instructional Modules in the Classroom (Gen)
(Middle Level) Union Square 3/4, Hilton
Mark T. Loveland *(mlovela@wested.org),* WestEd, Redwood City, Calif.
Art Sussman *(asussma@wested.org),* WestEd, Richmond, Calif.
Bring your own laptop and explore cutting-edge simulation-based science instructional modules currently used in classrooms for use in formative assessment and instruction.

Teaching Science Is All Fun and Games (Gen)
(Elementary–Middle Level/Inf) Union Square 19/20, Hilton
Greg J. Mylet *(myletg@loswego.k12.or.us),* Lake Oswego Junior High School, Lake Oswego, Ore.
Card and board games are effective ways to engage students in learning abstract concepts. Play Grabbin' Granite, Ecominos, Organopoly, and Half-life.

Exploring the Power of the Sun (Gen)
(Elementary–High School) Union Square 23/24, Hilton
Greg Holman *(info@need.org)* and **Don Pruett** *(info@need.org),* The NEED Project, Manassas, Va.
Tap into your students' curiosity about solar energy through engaging hands-on activities using solar beads, balloons and ovens, thermometers, radiometers, and photovoltaic cells.

Have Einstein, Curie, and Newton Visit Your Classroom: Embedding the History of Science into Your Teaching (Phys)
(High School) Nob Hill B, Marriott
Christine V. Brown *(cvbrown@edc.org),* Education Development Center, Inc., Newton, Mass.
Address national standards, deepen students' scientific understanding, AND engage students all at once! Embed the history of science into your lessons using free web resources.

Modeling the Spectrum (Gen)
(Middle Level–High School) Nob Hill C, Marriott
Christine A. Royce *(caroyce@aol.com),* NSTA Director, Professional Development, and Shippensburg University, Shippensburg, Pa.
Explore a complete unit from pre- to post-assessment that looks at different methods of examining the electromagnetic spectrum.

Project SPECTRA! (Earth)
(Middle Level–High School) Nob Hill D, Marriott
Erin L. Wood *(erin.wood@lasp.colorado.edu)* and **Tom Mason** *(tom.mason@lasp.colorado.edu),* University of Colorado at Boulder
Bring authentic NASA data into the classroom. Project SPECTRA! is a NASA program for grades 7–10 that combines math and science in an engineering framework and emphasizes hands-on and data-based activities.

DuPont Presents—Natural Selection and Antibiotic-resistant Bacteria (Gen)
(Middle Level–High School) Pacific A, Marriott
Donna Parker *(dcall@zoomnet.net),* Coffman High School, Dublin, Ohio
Melissa Bonifas *(mbonifas@esu9.org),* Blue Hill High School, Blue Hill, Neb.
Presider: Peggy Vavalla *(marguerite.e.vavalla@usa.dupont.com),* DuPont, Wilmington, Del.
Over 40% of antibiotics manufactured in the U.S. are given to animals. Explore the effects of antibiotics on the population of disease-causing bacteria during an infection.

It's Easy to Go Digital! (Bio)
(Middle Level–College) Pacific H, Marriott
Kenneth Bateman *(ken_bateman@wellesley.k12.ma.us),* Wellesley High School, Wellesley, Mass.
Are your students technologically ahead of you? Learn how to engage your students by turning your classroom into a digital classroom.

Discovery Boxes: A Tactile Approach to Conveying Concepts in Evolution (Bio)
(General) Pacific I, Marriott
Demetrius M. Lutz *(dlutz@nysci.org),* New York Hall of Science, Corona
Explore elementary topics in evolution through the use of tactile activity-based kits. Exercises include deciphering a fossil replica, observing inherited characteristics in populations and individuals, and identifying animal traits resulting from adaptive and selective processes.

Celestial Navigation for the Novice (Earth)
(Middle Level–High School) Walnut, Marriott
Philip M. Sadler *(psadler@cfa.harvard.edu),* Harvard-Smithsonian Center for Astrophysics, Cambridge, Mass.
Construct simple tools that allow students to determine latitude and longitude by measuring the Sun's height.

PDI **SEPUP Pathway Session: Getting Kids Invested with Stories: The Car of the Future and Energy Conversions (Phys)**
(Middle Level–College) Yerba Buena Salon 4, Marriott
Charles J. Hill *(chill@wheelock.edu),* Wheelock College, Boston, Mass.
"Science, like the rest of culture, is based on the manufacture of narrative," said scientist E.O. Wilson. Explore the use of story to engage high school students.

PDI **WestEd Pathway Session: Targeted Interventions Matter: Improving Student Graphing (Gen)**
(Elementary–High School) Yerba Buena Salon 5, Marriott
Jody Sherriff *(jskidmo@wested.org),* K–12 Alliance/WestEd, Santa Ana, Calif.
Learn a process to share with colleagues for analyzing student work and determining instructional adjustments for student success in graphing data. Receive student rubrics and protocols.

Using Portfolios in Physics: Reports from the Field (Phys)
(Middle Level–College) Yerba Buena Salon 11, Marriott
Michael J. Lowry, NSTA Director, High School Science Teaching, and The McCallie School, Chattanooga, Tenn.
The use of portfolios can generate deep understanding in science courses at all levels.

Climate Change: Science, Culture, and Story (Env)
(Middle Level–High School) Yerba Buena Salon 12/13, Marriott
Leon R. Geschwind *(leon.geschwind@noaa.gov),* The Baldwin Group at NOAA Pacific Services Center, Honolulu, Hawaii
Abbey Spargo *(aspargo@oceanexplorium.org),* Ocean Explorium, New Bedford, Mass.
Tim Buckley, Barrow High School, Barrow, Alaska
Alaska, Hawaii, and Massachusetts educators will integrate science, culture, and technology through virtual globes, hands-on activities, and personal narratives to tell compelling climate change stories.

Green Building Projects for High School Engineering Education (Phys)
(Informal Education) 111, Moscone Center
Charles Xie and **Edmund Hazzard** *(ehazzard@concord.org),* The Concord Consortium, Concord, Mass.
See a village of scale model green buildings and play with a suite of advanced hands-on and computer discovery tools for engineering education.

Stretch Your Digital Dollar: Affordable Strategies for Integrating Mobile Technologies into the Classroom (Gen)
(Informal Education) 112, Moscone Center
Katy Scott *(kscott@mbayaq.org)* and **Jenny de la Hoz,** Monterey Bay Aquarium, Monterey, Calif.
Mobile devices, including netbooks and cell phones, are low-cost solutions to technology integration. When using them with various free applications, students have a more interactive learning experience.

Be Cool, Go Green (Gen)
(General) 212, Moscone Center
April A. Chancellor *(april.chancellor@msichicago.org),* Museum of Science and Industry, Chicago, Ill.
Incorporate renewable energy topics into your curriculum with these green activities from the Museum of Science and Industry. Free lessons and resources!

✔ **Get Moving Redux! More Kinesthetic Tools for Excellence in Science (Gen)**
(Middle Level–High School) 228/230, Moscone Center
Brian J. Ciuffreda *(bciuffreda@princetoncharter.org)* and **Mark F. Schlawin** *(mschlawin@princetoncharter.org),* Princeton Charter School, Princeton, N.J.
More standards-based physical activities and mnemonic devices used at one of New Jersey's top-performing middle schools. Topics drawn from physics, chemistry, and biology.

3:30–4:30 PM Exhibitor Workshops

Introducing Vernier DataQuest Data Collection for TI-Nspire™ Technology (Gen)

(Grades 9–12) *110, Moscone Center*

Sponsor: Texas Instruments

Verle Walters *(vwalters@vernier.com),* Vernier Software & Technology, Beaverton, Ore.

Join us for a demonstration of the DataQuest application for TI-Nspire technology. DataQuest brings full-featured data collection to Texas Instrument's next-generation calculator. DataQuest is an easy-to-use application with many features you have come to expect from Vernier, including multichannel data collection, expanded sensor support, and powerful data analysis features.

There Is More to Project-Based Inquiry Science (PBIS) Than Just a Project (Gen)

(Grades 6–8) *307, Moscone Center*

Sponsor: It's About Time

Mary Starr, University of Michigan, Ann Arbor

Teaching science AND addressing the English Language Arts Core Standards is easy with PBIS. Learn about the structure of PBIS and how writing and reading activities that align with the new ELA Core Standards are embedded into science learning and provide opportunities for writing to show learning and reading well-written science text. Work with us as we provide examples and analyze students' written work.

3:30–5:00 PM Meeting

SCST Business Meeting

Union Square 17/18, Hilton

3:30–5:00 PM Shell Science Seminar

Learning in the Classroom: Minds, Brains, and Science (Gen)

(General) *104, Moscone Center*

Kenneth Wesson *(kenawesson@aol.com),* Educational Consultant and Vice President, Western Division and International Divisions, Delta Education/School Specialty Science, San Jose, Calif.

Presider: Jerry Valadez *(jdvscience@yahoo.com),* Chairperson, NSTA San Francisco National Conference, and Director, Central Valley Science Project, Fresno, Calif.

Many of our classroom frustrations result from erroneous expectations grounded in how we would prefer that young brains work, rather than based on an accurate understanding of how brains do work. Student learning is dependent upon developing specific kinds and quantities of neural circuits over time (the very nature of learning), rather than on mechanically following a teacher's guide "script" or making suitable selections of work sheets. Instead, it is background knowledge represented by brain circuitry engaging with the social, emotional, and environmental properties that combine to advance human learning. Today, we can entertain integrative propositions connecting brain science with classroom learning experiences. Incredible advances and stunning discoveries in the cognitive sciences have expanded our knowledge about student learning and brain development. Recent findings about the human brain suggest that education can be better supported by including some aspects of this new knowledge base in our homes and schools on a consistent basis.

Kenneth Wesson works as an educational consultant for preschool through university institutions and organizations and is vice president of the Western Division and International Divisions for Delta Education/School Specialty Science. An expert on the neuroscience of learning and methods for creating classrooms and learning environments that are "brain-considerate," Wesson regularly addresses psychological, medical, and educational associations, as well as parenting organizations, on establishing "brain-considerate" learning environments.

In addition to his seminars on learning, Wesson also speaks on the topics of brain development, diversity in learning, the neuropsychology of prejudice, curriculum development, and how children learn.

NSTA is grateful to Shell for sponsoring this session.

3:30–5:00 PM Workshops

NSTA Press Session: A Framework and Tools to Make Tough Science Topics Approachable for Grades 3–5 (Gen)

(Elementary) *Union Square 5/6, Hilton*

Susan B. Koba *(skoba@cox.net),* Science Education Consultant, Omaha, Neb.

Carol T. Mitchell *(cmitchell@mail.unomaha.edu),* University of Nebraska, Omaha

Use our NSTA Press book, *Hard-to-Teach Science Concepts: A Framework to Support 3rd–5th Grade Learners*, to enhance lessons on tough topics and improve learning.

PDI **TERC Pathway Session: Listen to the Data (Gen)**

(Elementary–Middle Level) *Yerba Buena Salon 1, Marriott*

Monica Chrambach *(monica_chrambach@shs.org),* Shady Hill School, Cambridge, Mass.

In the nexus of art and science, there's rich ground for data representation. Use innovative alternatives to conventional graphing to explore the meaning of data.

3:30–5:00 PM Exhibitor Workshop

Art *vs.* Science: The Role of Science in the Winemaking 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 them control every stage of the winemaking process. Learn how contemporary winemakers use biology, chemistry, and physical science to help them 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.

3:30–5:30 PM Presentation

SESSION 1

NSTA/CBC 2011 Outstanding Science Trade Books (Gen)

(General) *Continental 4, Hilton*

J. Carrie Launius *(jlaunius@hazelwoodschools.org),* Hazelwood School District, Florrisant, Mo.

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

Betty Crocker, Retired Educator, Denton, Tex.

Suzanne Flynn *(suzannemflynn@earthlink.net),* Cambridge College, Cambridge, Mass.

Presider: Mike Szydlowski, Columbia (Mo.) Public Schools

Reading science trade books is the perfect way for students to build literacy skills while learning science content. But how do you pick the right books, and how do you use them in your classroom? Attend this session to find out! You'll hear about great books and innovative classroom strategies, meet authors, and get to talk to members of the selection committee that chooses the annual list of Outstanding Science Trade Books for Students K–12.

3:30–5:30 PM NSTA ESP Symposium II

NSTA Exemplary Science Programs (ESP)…Meeting the Reform Features from the National Science Education Standards **(Gen)**

(General) *Continental Salon 2, Hilton*

ESP: Science Teaching and Learning as Collaborative Experiences

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 *Susan B. Koba* (skoba@cox.net), *Science Education Consultant, Omaha, Neb.*

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.

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

Curious Scientific Investigators Solve Museum Mysteries (from ESP #5)

Rick Crosslin *(rickc@childrensmuseum.org),* Metropolitan School District of Wayne Township, Indianapolis, Ind.

Teaching Science with Pictures (from ESP #2)

Barbara Foots *(bkfoots@swbell.net),* Houston (Tex.) Independent School District

Karl Spencer *(karl.spencer@visualrealization.com),* The Visual Realization Program, Houston, Tex.

Issues-based Learning (from ESP #7)

Jason Pilot *(jason_pilot@lakeheadschools.ca),* Sir Winston Churchill Collegiate and Vocational Institute, Thunder Bay, Ont., Canada

Wayne Melville *(wmelvill@lakeheadu.ca),* Lakehead University, Thunder Bay, Ont., Canada

Collaborative Problem Solving with "Hands-On Optics" (from ESP #5)

Stephen M. Pompea *(spompea@noao.edu),* National Optical Astronomy Observatory, Tucson, Ariz.

3:40–5:30 PM Exhibitor Workshop

Robots for a Penny **(Gen)**

(Grades K–12) *309, Moscone Center*

Sponsor: NASA Education

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

We'll introduce you to a wide variety of NASA robotics education resources that you can use in your classroom. Discover robotic activities that you can teach for less than a penny, build robots, and receive a virtual tour of the NASA robotics website.

4:00–4:30 PM Presentations

SESSION 1

Creating an Online Learning Community for Teachers **(Gen)**

(General) *Golden Gate 1, Hilton*

Ann F. Wright-Mockler *(ann.wrightmockler@pnl.gov),* Pacific Northwest National Laboratory, Richland, Wash.

Learn how to develop an online community of teachers for various purposes and explore available platforms and strategies to meet the goals of your community.

SESSION 2

Simplified Approaches to Assessing Science Notebooks (Gen)

(Middle Level–High School) *258/260, Moscone Center*

Marsha S. Wallace *(marswall@hotmail.com)* and **Erica Repp** *(ericarepp@gmail.com),* Salk School of Science, New York, N.Y.

Learn simple, easy strategies for assessing science notebooks without reading through each one.

4:00–5:00 PM Meeting

GEICO/NSTA New Member Orientation

(By Invitation Only) *Yosemite B, Hilton*

Please join us for this exceptional opportunity to meet your colleagues, make new friends, and enjoy refreshments while hearing about how preservice and new teachers can save money on BOTH their NSTA membership dues as well as auto insurance! If you joined NSTA as a member after May 31, 2010, and/or received an e-mail invitation to this event from NSTA, please join us! This event is graciously sponsored by GEICO.

4:00–5:00 PM Exhibitor Workshop

Seashell Taxonomy: A Venomous Topic (Bio)

(Grades 9–College) *134, Moscone Center*

Sponsor: Howard Hughes Medical Institute

Satoshi Amagai, Howard Hughes Medical Institute, Chevy Chase, Md.

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

Learn about the latest interactive lesson from the Howard Hughes Medical Institute. This free resource introduces concepts such as evolution, phylogeny, and DNA fingerprinting. During the workshop, participants will learn how to enhance the activity with additional hands-on components and cone snail information. Take home free materials and an activity kit.

4:00–5:15 PM Exhibitor Workshop

Introducing Inquiry Investigations™ Hands-On Inquiry Activities Focusing on Technology (Gen)

(Grades 7–10) *124, Moscone Center*

Sponsor: Frey Scientific/School Specialty Science

Lou Loftin, Consultant, Reno, Nev.

Explore the new hands-on active learning science modules and kits geared for students in grades 7–10. See how technology and inquiry help students to understand essential science content. Participant teams work together to construct a working telephone and learn about new USB technology (direct to computer data recording) using Datalogger probes.

4:00–5:30 PM Exhibitor Workshops

Butterflies in Your Classroom (Bio)

(Grades K–12) *120, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Bring excitement into your classroom with the Painted Lady butterfly *(Vanessa cardui),* which is easily raised and cultured year-round. Learn how to care for the butterfly in every life stage and take home a living sample.

Rats! Inquiry-based Dissection with Carolina's Perfect Solution® Specimens (Bio)

(Grades 6–12) *121, Moscone Center*

Sponsor: Carolina Biological Supply Co.

Carolina Teaching Partner

Explore mammalian anatomy with a guided dissection of Carolina's Perfect Solution rats. Tips on inquiry-based dissection will be discussed. Carolina's Perfect Solution rats are safe, nontoxic, and convenient.

Real Chemistry for All Students—But How? (Chem)

(Grades 10–12) *125, Moscone Center*

Sponsor: LAB-AIDS, Inc.

Tom Hsu, Author, Andover, Mass.

What are the barriers to teaching real, quantitative chemistry so all students can succeed? Take part in a hands-on exploration that will touch the areas of greatest student difficulty, with solutions that can help your students learn and engage with chemistry. *A Natural Approach to Chemistry* doesn't require Bunsen burners, fume hoods, or toxic chemicals!

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.

Middle School Physical Science: Learning Key Concepts Through Hands-On, Probeware-based Activities (Phys)
(Grades 6–8) *132, 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. These activities from Sally Ride Science and PASCO cover the content you already teach through integrated, probeware-based guided inquiry lessons. The hands-on activity and related demonstrations will cover key concepts such as motion, chemical reactions, and conservation of energy.

Renewable Energy Exploration: Solar and Wind Power (Env)
(Grades 9–12) *133, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Investigate energy output from a solar cell and wind turbine under varying environmental conditions in this hands-on workshop featuring the Horizon Renewable Energy SPARKlab collection. This collection of 10 guided inquiry labs, developed by PASCO and Horizon Fuel Cell Technologies, provides a standards-based, state-of-the-art science teaching solution to support your high school Earth or environmental science program. Additional labs from the collection will be demonstrated.

Think. Do. Learn—Explore Science Fundamentals (Gen)
(Grades K–5) *202/204, Moscone Center*
Sponsor: Sangari Active Science
Sandra Damm *(sdamm@sangariglobaled.com),* Sangari Active Science, New York, N.Y.
Annette Barzal *(abarzal@sangariglobaled.com),* Science Adventures, Medina, Ohio
John E. Penick *(jpenick@sangariglobaled.com),* 2003–2004 NSTA President, and Sangari Global Education, Miami, Fla.
Explore the Big Ideas of science fundamentals with active science lab activities designed to engage students in their own learning. The Sangari Active Science methods demonstrate how to support students so they have an appreciation and understanding of how real-world questions relate to science.

Move Beyond the Textbook (Gen)
(Grades K–12) *206, Moscone Center*
Sponsor: Discovery Education
Presenter to be announced
Learn how Discovery Education Science Techbook helps engage students by reaching them with dynamic curricular resources and easy-to-implement hands-on labs and activities. *Note:* Free hands-on kits will be provided to the first 50 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.

Take Me to the River: Modeling Wetlands, Floodplains, and Risk Assessment (Env)
(Grades 7–12) *270/272, Moscone Center*
Sponsor: WARD'S Natural Science
Steve Bryson *(sbryson@wardsci.com),* WARD'S Natural Science, Tonawanda, N.Y.
Despite ongoing efforts, flood damages and risks are increasing in many areas and are often intensified by careless

development and mismanagement of critical watershed areas. Using an exciting new interactive classroom model, we'll explore the impact that wetlands, retention ponds, levees, and other variables have on a watershed drainage system in a very dramatic and visual way. Learn how to construct a simple hydrograph and explore a variety of ways to mitigate flooding issues.

Watching the Detectives: Blood Spatter (Bio)
(Grades 6–12) *274/276, Moscone Center*
Sponsor: WARD'S Natural Science
Kathy Mirakovits, Portage Northern High School, Portage, Mich.
Kelly P. Cannon, Washoe County School District, Reno, Nev.
Help your students find out whodunit! An ideal activity for beginning forensics students or as a unit in other science classes, blood spatter lets students put on their detective hats. Using simulated blood, participants will learn the basic skills needed to interpret and understand blood spatter.

Stream Assessment: An Active, Integrated Approach to Science Learning (Env)
(Grades 6–12) *300, Moscone Center*
Sponsor: Water Environment Federation/California Water Environment Association
Michael Kemp, Murray State University, Murray, Ky.
During this workshop hosted by the Water Environment Federation, you will participate in a hands-on simulation of chemical, biological, and geophysical assessment of stream water quality. Take home resources, including a World Water Monitoring Day™test kit, will be supplied.

Standards + EI = Cool & Wow (Gen)
(Grades K–8) *303, Moscone Center*
Sponsor: Educational Innovations, Inc.
Margaret Flack *(info@teachersource.com),* Educational Innovations, Inc., Norwalk, Conn.
Learn how using products from Educational Innovations can help you teach the science standards. When used to teach concepts with hands-on activities, you will find that not only does learning occur, but you will hear the words "cool" and "wow" throughout your classroom.

Knowing What! Knowing Why! Knowing How! Tools and Traits of Effective Science Teachers (Gen)
(Grades K–8) *304, Moscone Center*
Sponsor: McGraw-Hill School Education Group
Jo Anne Vasquez, 1996–1997 NSTA President, and Helios Education Foundation, Phoenix, Ariz.
Michael Comer, McGraw-Hill School Education Group, Columbus, Ohio
This workshop will model the tools and discuss the traits of highly effective science teachers. Come participate in some hands-on activities that highlight the skills and techniques that successful science instructors employ.

Is America Flunking Science? If So, Why? What Can Teachers, Standards, and Assessments Do About It? (Bio)
(Grades 9–12) *305, Moscone Center*
Sponsor: Pearson
Joseph Levine, Concord, Mass.
Science is vital to everyday life, national health and security, and policy making. Join us as we discuss challenges to the public's understanding of science, and how we as educators can counteract these challenges and provide quality science education.

4:15–5:30 PM Exhibitor Workshop

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.

4:30–5:00 PM Presentation

SESSION 1
Teacher Researcher Day Session: Fostering Teacher Researcher Collaborations (Gen)
(General) *Yerba Buena Salon 8, Marriott*
Emily H. van Zee, Oregon State University, Corvallis
What can teacher researchers do to foster their own and others' inquiries into science learning and teaching? Let's reflect on ways to collaborate.

5:00–5:30 PM Presentations

SESSION 1

Beginning Teachers in PLCs and Coaching Program (Gen)

(General) *Golden Gate 1, Hilton*

Nancy Schultz *(schultzn@tamug.edu),* The University of Texas Medical Branch, Galveston

Galveston's successful beginning teacher program used PLCs centered on "Marzano's 9," while observations and coaching sessions focused on closing gaps in pedagogy and student engagement.

SESSION 2

Science Notebooks: Assess, Reflect, Repeat (Gen)

(General) *Golden Gate 8, Hilton*

Crystal L. Marsh *(clm2003@gmail.com),* Salk School of Science, New York, N.Y.

Learn how students can assess the quality of their notebook work, reflect upon it, and set goals for improvement throughout the year.

SESSION 3

Boot Camp for Teachers: A Massachusetts Dept. of Elementary and Secondary Education Science Institute (Phys)

(Middle Level–College) *Union Square 22, Hilton*

Mark D. Greenman *(mgreenman2@verizon.net),* National Science Foundation, Arlington, Va.

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

A science content institute can make a BIG difference in teacher preparation for teaching middle and high school physical science.

SESSION 4

Using Real-Time Communication Technology to Connect Students with Real Science from the Polar Regions (Gen)

(General) *232/234, Moscone Center*

Kristin M. Timm *(kristin@arcus.org)* and **Janet Warburton** *(warburton@arcus.org),* Arctic Research Consortium of the United States, Fairbanks, Alaska

From isolated polar locations such as the Greenland ice sheet, teachers and researchers can interact with students in an unparalleled real-time science and technology experience.

5:00–6:00 PM Presentations

SESSION 1

NSTA Press Session: Using Notebooks with Earth Science Success! (Earth)

(General) *Continental 9, Hilton*

Cathy Oates-Bockenstedt *(cbockenstedt@edenpr.org),* Central Middle School, Eden Prairie, Minn.

Learn about the notebook-based, ready-to-use, lab-focused curriculum showcased in *Earth Science Success: 50 Lesson Plans for Grades 6–9.* Start using notebooks successfully and walk away with excellent lessons!

SESSION 2 (two presentations)

(Elementary/College) *Golden Gate 7, Hilton*

Finding "The Big Picture" in Curriculum (Gen)

Sarah V. Neyman, Western Washington University/Bellingham (Wash.) School District

See how one district analyzes the adopted curriculum, looking for the main learning targets through the lens of the "How People Learn" study.

Use of Learning Progressions for Improving Teacher and Student Understanding of Physical Science Concepts (Chem)

Martin L. Brock *(martin.brock@eku.edu),* Eastern Kentucky University, Richmond

See how rural K–5 teachers were equipped to use inquiry approaches, formative assessment, and scaffolding to improve science content learning in their students.

SESSION 3

ASTE Session: Investigate How K–8 Teachers Use Web-based Science Education Resources (Gen)

(General) *Union Square 13, Hilton*

Ross Perkins *(rossperkins@boisestate.edu)* and **Ted J. Singletary** *(tsingle@boisestate.edu),* Boise State University, Boise, Idaho

What do K–8 teachers value in web-based science—content resources, activities, or other qualities? After interviewing science teachers and using rubrics, we found out which science sites made the grade.

SESSION 4

NSELA Session: Digital Content, Media Mobility, and the Networked Learner: Why Technology Has Become an Essential Element of Science Education Leadership (Gen)

(General) *Union Square 21, Hilton*

Susan Van Gundy *(vangundy@ucar.edu),* The National Science Digital Library, Boulder, Colo.

Examine how the nature of science education leadership is impacted by technology innovations at multiple scales—influencing pedagogy, assessment, professional development, and education policy.

SESSION 5

Got Curriculum? How Practicing "Understanding by Design" Reinvented an Urban School System's Approach to Science (Gen)

(General) *Union Square 25, Hilton*

Keith F. Sevigny, Annie Fisher STEM Magnet School, Hartford, Conn.

Ellen Kliman *(klime001@hartfordschools.org),* Bulkeley High School, Hartford, Conn.

Sandra Inga *(ingas001@hartfordschools.org),* Hartford (Conn.) Public School System

Presider: Sandra Inga

Take part in curriculum development activities that mimic the trailblazing process by which the Hartford Public Schools' science department was reinvented. Sample unit provided.

SESSION 6

Friends in High Places: NASA's Learning Community for Teachers (Gen)

(General) *Golden Gate Salon B, Marriott*

Lisa O. Brown *(lisa.r.brown@nasa.gov),* NASA Johnson Space Center, Houston, Tex.

John F. Weis *(john.f.weis@nasa.gov),* NASA Marshall Space Flight Center, Huntsville, Ala.

Richard S. Varner *(richard.s.varner@nasa.gov),* NASA Goddard Space Flight Center, Greenbelt, Md.

Looking for new ideas? Discover a place in cyberspace where you can collaborate with colleagues around the world.

SESSION 7

FDA Follow-Up Session: Elementary-Level Food Safety and Nutrition Education (Bio)

(Preschool–Middle Level) *Golden Gate Salon C1, Marriott*

Laurie A. Hayes *(lhayes@cart.org),* Center for Advanced Research and Technology, Clovis, Calif.

Discover how to engage elementary students in learning science standards using food! Receive free educational materials from FDA and the Partnership for Food Safety Education.

SESSION 8

NOAA Follow-Up Session: Impacts of Climate Change on Fisheries and Protected Marine Resources (Gen)

(General) *Pacific B, Marriott*

Presenter to be announced

Scientists and educators from NOAA Fisheries Service will present data and examples of the effects of climate change on U.S. West Coast protected marine species.

SESSION 9

Bringing Engineering Research to Your Classroom (Gen)

(Elementary–High School) *Pacific C, Marriott*

Rebekah Hammack *(bhammack@stillwaterschools.com)* and **Carmen Gulczynski,** Stillwater Middle School, Stillwater, Okla.

Kerry S. Goode, Jenks Middle School, Jenks, Okla.

Amber Keeter *(akeeter@woodland.k12.ok.us),* Woodland High School, Fairfax, Okla.

Bring cutting-edge scientific research into your classroom through the RET program. Learn to develop interdisciplinary lessons based on today's rising technology.

SESSION 10

Investigating Estuaries with Online Monitoring Data: Activities from Estuaries 101 (Gen)

(Informal Education) *Willow, Marriott*

Atziri Ibanez, NOAA National Estuarine Research Reserve System, Silver Spring, Md.

Sarah Ferner *(daviess@sfsu.edu),* San Francisco Bay National Estuarine Research Reserve, Tiburon, Calif.

Analyze estuary data in this hands-on session showcasing data analysis activities from Estuaries 101, a new high school curriculum for Earth, life, and physical science.

SESSION 11

Forensic Science Is Fun! (Gen)

(High School) *113, Moscone Center*

Anne Cupero *(annecupero@gmail.com),* Arlington Career Center/Marymount University, Arlington, Va.

Develop a class in forensic science that will satisfy any STEM requirements your state has—your kids will love it and so will you!

SESSION 12

The Research Experience for Teachers (RET) Program: An Innovative STEM Teacher Leadership Program (Gen)

(Middle Level–College) *200, Moscone Center*

Claire J. Duggan, Northeastern University, Boston, Mass.

The RET program is evolving into a leadership development program for science teachers and community college faculty. Former RET participants and program staff will provide an overview.

SESSION 13

Realizing the Intentions of Science Education Standards (Gen)

(General) *208/210, Moscone Center*

Howard Kimmel, New Jersey Institute of Technology, Newark

Mark O'Shea *(moshea@csumb.edu),* California State University–Monterey Bay, Seaside

State science standards have failed to achieve the reforms intended by the National Science Education Standards. New protocols and considerations hold the promise of raising expectations and achievement as intended.

SESSION 14

Meteorites CSI: The Sky Has Fallen…Now What? (Gen)

(Middle Level–College) *220/222, Moscone Center*

Martin G. Horejsi, The University of Montana, Missoula

Apply the inquiry process to space science by integrating CSI themes and meteorites in the classroom.

SESSION 15

Differentiated Instruction Through Technology (Gen)

(General) *250, Moscone Center*

Elizabeth Niehaus *(niehaus_p@msn.com),* Niehaus and Associates Inc., South Lyon, Mich.

Anthony Sky, Lawrence Technological University, Southfield, Mich.

Carol L. Jones *(caroljones8710@yahoo.com),* Macomb Independent School District, Clinton Township, Mich.

Presider: Paul J. Niehaus, Washtenaw Community College, Ann Arbor, Mich.

So you have more special education students in your room than the special education teacher has. Now add the other 20 who have different levels of learning. How do you address all those needs? See what we have learned about the incorporation of technology in the classroom.

SESSION 16

Using Interactive Notebooks for Inquiry-based Science (Gen)

(Middle Level–High School) *252/254, Moscone Center*

Helena Easter *(heaster@richmond.k12.va.us),* Richmond (Va.) Public Schools

LaTonya Waller *(lwaller2@richmond.k12.va.us)* and **Leslie Hayes** *(lhayes@richmond.k12.va.us),* Lucille M. Brown Middle School, Richmond, Va.

The interactive science notebook is a perfect opportunity for students to build inquiry and questioning skills. Use notebooks to address standards, differentiate instruction, and promote literacy development.

SESSION 17

Researchers of the Future (Gen)

(High School) *258/260, Moscone Center*

Elvia Solis, Arsenal Technical High School, Indianapolis, Ind.

We will discuss the development and implementation of a science research program for urban high school students.

SESSION 18

Improving Students' Scientific Discourse Through Academic Language Learning (Gen)

(General) *262, Moscone Center*

Sharan R. Crim *(scrim@atlanta.k12.ga.us),* Atlanta (Ga.) Public Schools

Presider: Kelly Stewart, Fulton County Schools, Atlanta, Ga.

Improve English language learners' scientific discourse by connecting students' acquisition of academic language learning.

5:00–6:00 PM Workshops

Bar-coding Plants: Plant Systematics, PCR, and Bioinformatics in the Classroom (Bio)
(High School–College) *Continental 1, Hilton*
Jason Williams *(williams@cshl.edu),* Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y.
Use plant DNA to identify plants and determine their place in the plant tree of life.

Wings, Strings, and Flying Things (Earth)
(Elementary) *Continental 3, Hilton*
Angelo A. Casaburri *(angelo.casaburri-1@nasa.gov),* NASA Johnson Space Center, Houston, Tex.
Experiment with the basic principles of flight—air, gravity, lift, thrust, and drag. Conduct scientific experiments, construct aircraft models, and read selections about aviation.

Everyday Water Science—From Classroom to Home (Earth)
(Elementary–Middle Level/Informal) *Continental 7, Hilton*
Laurina I. Lyle *(laurina.lyle@projectwet.org),* Project WET Foundation, Bozeman, Mont.
Presider: Theresa Schrum *(theresa.schrum@projectwet.org),* Project WET Foundation, Bozeman, Mont.
Here are some lessons that extend from the classroom into the home. Extended classroom experience with family allows real-life application of new knowledge.

It's Simple (NOT!): Increasing Complexity Through Questioning (Gen)
(Preschool–Elementary) *Golden Gate 3, Hilton*
Scott E. Sala *(scott_sala@dpsk12.org),* Denver (Colo.) Public Schools
Engage in a series of investigations and see how the depth of the activity changes as the level of questioning increases in complexity.

Teaching Children About Scientific Inquiry, Geology, and Evolutionary Concepts by Investigating Real Fossils (Env)
(Elementary–Middle Level) *Golden Gate 4, Hilton*
Barbara A. Crawford *(bac45@cornell.edu),* Cornell University, Ithaca, N.Y.
Robert M. Ross *(rmr16@cornell.edu),* The Paleontological Research Institution, Ithaca, N.Y.
Xenia S. Meyer *(xenia.meyer@berkeley.edu),* University of California, Berkeley
In this authentic science investigation, Devonian fossils are examined to determine the environment of the past. Handouts and free fossils.

It's All in the Family: Hosting Family Science and Engineering Events (Gen)
(Elementary/Informal Education) *Golden Gate 6, Hilton*
David Heil, David Heil & Associates, Inc., Portland, Ore.
Mia Jackson, Foundation for Family Science and Engineering, Portland, Ore.
Discover the thrill of hands-on science and engineering activities designed to engage the whole family and learn how to host a successful Family Science or Family Engineering event in your community. Handouts and prizes!

What Student Talk Teaches Us (Phys)
(Preschool–Elementary) *Union Square 15/16, Hilton*
Terry B. Shanahan *(tshanaha@uci.edu)* and **Lauren M. Shea** *(lshea@uci.edu),* University of California, Irvine
We'll look at how to incorporate more student talk into science lessons using a lesson on sound as context.

Smarter Science for Middle School: Literacy and Numeracy in Action (Gen)
(Middle Level) *Union Square 19/20, Hilton*
Michael J. Newnham, Youth Science Canada, Pickering, Ont.
Smarter Science's research-based inquiry program teaches key concepts and process skills through hands-on investigations. Handouts and door prizes.

The Outdoor Class Study Area: An Integrated Learning Experience (Env)
(Elementary–Middle Level) *Union Square 23/24, Hilton*
Carol A. Brennan *(carolb@hawaii.edu)* and **Brooke M. Davis,** University of Hawaii, Honolulu
A small area of your school yard can engage students in uncovering the mysteries of nature. Handouts provided.

The Polymer Science of Sporting Spheres (aka Balls) (Chem)
(High School) *Golden Gate Salon A, Marriott*
Brian P. Wright *(ilovechem@gmail.com),* Olympia High School, Olympia, Wash.
Engage your students with the amazing chemistry of high-tech sporting goods. Discover the connections between sports and polymer chemistry, including nanotechnology and physics.

The Science of Stuff: Materials Science in the High School Classroom (Phys)
(High School) *Nob Hill B, Marriott*
Michelle McCombs *(mccombs.75@osu.edu),* The Ohio State University, Columbus
From nanotubes and buckyballs to carbon-fiber composites and semiconductors, materials scientists and engineers are revolutionizing our lives. Come see how they can revolutionize your classroom!

Hurricanes: Science and Society (Earth)
(Middle Level–College) *Nob Hill C, Marriott*
Gail A. Scowcroft, Christopher Knowlton *(cknowlton@gso.uri.edu),* and **Holly Morin** *(hmorin@gso.uri.edu),* University of Rhode Island, Narragansett
Try some new middle and high school activities related to hurricane science and advances in forecasting and observation.

A Space Weather Monitor in Your Classroom (Earth)
(Middle Level–College) *Nob Hill D, Marriott*
Deborah K. Scherrer *(dscherrer@solar.stanford.edu),* Stanford University, Stanford, Calif.
Learn how to obtain and use a space weather monitor to study changes in Earth's ionosphere caused by solar activity.

DuPont Presents—Investigating Photovoltaic Cells (Gen)
(Middle Level–High School) *Pacific A, Marriott*
Peggy Vavalla *(marguerite.e.vavalla@usa.dupont.com),* DuPont, Wilmington, Del.
Use photovoltaic cells to transform energy from sunlight into electrical energy as you investigate solar energy as an example of a renewable energy source.

It's Not All Zombies and Violence: Using Gaming to Promote Biotechnology Learning (Bio)
(High School) *Pacific H, Marriott*
Timothy M. Barko *(tim.barko@ufl.edu)* and **Troy Sadler** *(tsadler@coe.ufl.edu),* University of Florida, Gainesville
Learn how to facilitate learning through gaming using Mission Biotech, a biotechnology-themed computer game.

PDI **BSCS Pathway Session: Evaluating Instructional Materials Using Rubrics (Gen)**
(Elementary–High School) *Yerba Buena Salon 2, Marriott*
Brooke Bourdelat-Parks *(info@bscs.org),* BSCS, Colorado Springs, Colo.
Practice using rubrics to rigorously evaluate research-based science instructional materials.

PDI **SEPUP Pathway Session: Teaching Core Genetics Concepts Through Issues Related to Genetically Modified Foods (Bio)**
(High School) *Yerba Buena Salon 4, Marriott*
Maia Willcox *(mwillcox@berkeley.edu)* and **Laura Lenz,** Lawrence Hall of Science, University of California, Berkeley
Examine issues related to the potential use of genetically modified organisms as a response to sustainability challenges. Activities teach core concepts in genetics.

Subduction Zone Conditions (Earth)
(High School) *Yerba Buena Salon 11, Marriott*
Joe Monaco, Retired Educator, Highland, Calif.
What are the geologic environmental conditions at a subduction zone? Use actual data from the *JOIDES Resolution* to explore drilling sites extending across the convergent boundary near Japan.

Integrated Science: Lessons with the 5Es (Gen)
(Middle Level–High School) *111, Moscone Center*
Bruce L. Wear *(wear@palmbeach.k12.fl.us),* The School District of Palm Beach County, West Palm Beach, Fla.
Experience great hands-on science lessons integrating the 5Es presented by 30+ year veteran resource teachers.

Linking Home and School with P.A.S.S.© (Portable Affordable Simple Science) (Gen)
(General) *212, Moscone Center*
Renee G. O'Leary, Caravel Academy, Bear, Del.
Discover simple, multisensory, and hands-on early childhood/elementary explorations (preK–2)—in zippered plastic bags—with take-home and multidisciplinary follow-up. Walk away with sample lesson plans, bags, and follow-up.

Developing a Framework for Formatively Assessing Student Notebooks **(Gen)**
(Elementary–Middle Level/Supv) *224/226, Moscone Center*
Janet A. Korenich *(jkorenich@assetinc.org),* **Ralph Juhascik** *(rjuhascik@assetinc.org),* and **Emily A. Sasko** *(esasko@assetinc.org),* ASSET Inc., Pittsburgh, Pa.
Ronald J. Korenich *(ron.korenich@fcasd.edu),* Fox Chapel Area School District, Pittsburgh, Pa.
Karen S. Bordt *(bordtk@nhsd.net),* Highcliff Elementary School, Pittsburgh, Pa.
Use student notebook samples to explore a framework that sets student success criteria and formatively assesses the various meaning-making notebook components.

✔ **Helping Students Develop Scientific Explanations Based on Empirical Evidence and Scientific Reasoning** **(Earth)**
(Middle Level–High School) *228/230, Moscone Center*
Jay Holmes and **Hudson Roditi** *(dnorton@amnh.org),* American Museum of Natural History, New York, N.Y.
Use this research-based scaffold to construct a scientific explanation. First analyze a sample data set with related background information, and then apply the tool as an assessment with actual student samples of long-term science investigations.

5:00–6:30 PM Exhibitor Workshop

PASCO Presents the 9th Annual Just Physics Evening **(Phys)**
(Grades 5–12) *102, Moscone Center*
Sponsor: PASCO Scientific
Presenter to be announced
Please join us for our 9th Annual Just Physics Evening event filled with fun, food, and tips for teaching physics.

5:00–7:00 PM Reception

APAST Social Reception and General Meeting
(By Invitation Only) *Golden Gate Salon C3, Marriott*

5:30–6:00 PM Presentation

SESSION 1
Teaching Case Studies in Earthquake Seismology **(Earth)**
(High School–College) *Golden Gate 5, Hilton*
Randal L.N. Mandock *(rmandock@netzero.net),* Clark Atlanta University, Atlanta, Ga.
Case studies in earthquake seismology teach the fundamental analysis techniques needed for a deeper understanding of earthquake hazards.

5:30–7:00 PM Reception

Student Chapter and Student Members Reception
(No Ticket Required) *Continental 8, Hilton*
Open to all preservice teachers and those who work with them. If your institution has an NSTA Student Chapter, please bring examples of your chapter's work, best practices, and stories to share with students at institutions that don't yet have an NSTA Student Chapter. If your school does not yet have a chapter, then come to learn about starting a successful chapter at your school.

Hors d'oeuvres and refreshments will be served as you network with your peers. You'll also get to hear from and share your insights with key NSTA leadership, including NSTA President Alan McCormack!

5:30–7:00 PM Meeting

NMLSTA Board Meeting (Part 2)
(For NMLSTA Members Only) *Union Square 9, Hilton*

5:30–7:00 PM Exhibitor Workshop

No Dinosaurs in Heaven **(Gen)**
(Grades 6–College) *104, Moscone Center*
Sponsor: No Dinosaurs in Heaven
Greta Schiller *(greta@nodinos.com),* Jezebel Productions, New York, N.Y.
Eugenie Scott, National Center for Science Education, Inc., Berkeley, Calif.
Come see this film about the Grand Canyon, Noah's Ark, and the fight to keep science in and religion out of public schools. Shot on location at the NSTA 2008 Boston National Conference on Science Education, the Grand Canyon, and New York City public schools, the film features Eugenie Scott and Steve Newton (NCSE) and Mitch Waldorp (*Nature* Magazine).

5:30–7:30 PM Reception

Albert Einstein Distinguished Educator Fellowship Program Reception

Yerba Buena Salon 10, Marriott

6:00–8:30 PM NSTA Teacher Awards Gala

(Tickets Required: $65) **M-8** *Yerba Buena 7, Marriott*

Enjoy a fabulous evening celebrating with this year's teacher award recipients! ALL of the teacher awards will be presented in one grand evening. Join your colleagues in recognition of this year's winners at the NSTA Teacher Awards Gala. Evening attire is requested to honor our teacher award recipients. A limited number of tickets are available for this social event.

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

6:30–8:00 PM Receptions

California Reception

(By Invitation Only) *Continental 6, Hilton*

NESTA Friends of Earth Science Reception

Club Room, Marriott

Have fun! Join your Earth and space science educator colleagues at this reception hosted by the National Earth Science Teachers Association! Visit *www.nestanet.org/cms/content/conferences/nsta* for more information.

7:00–9:00 PM Exhibitor Workshop

Sci-A-Palooza VIP Night of Science (Gen)

(Grades 3–12) *135, Moscone Center*

Sponsor: WARD'S Natural Science, Science Kit, and Sargent-Welch

The Sci-A-Palooza Team

Join us for the second-annual Sci-A-Palooza VIP Night of Science, presented by Sargent-Welch, Science Kit, and WARD'S Natural Science. This cross-curricular evening event features hands-on science activities, special guest stars, and a grand finale you have to see to believe! Preregistration for this event is required. Visit *www.vwreducation.com/nsta* for more information.

7:30–9:00 PM Social

SCST Dessert Social and Poster Session

Continental 4, Hilton

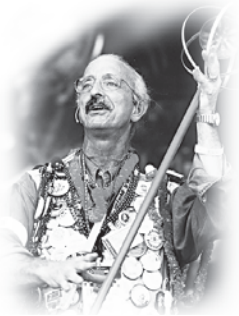
This session is open to college faculty and the Society for College Science Teachers (SCST) members.

A Video Showcase of Legendary Icons, Inspiring Teachers, Memorable Performances, and Stimulating, Engaging Courses: Part 2

6:00 PM–12 Midnight • Yosemite A, 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 last night's session. 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:

Stephen Jay Gould of Harvard University, *Full House* interview with Charlie Rose; **Benjamin Schumacher** of Kenyon College, *The Quantum Enigma: The Physics of the Microscopic World*; **Richard Wolfson** of Middlebury College, *Physics in Your Body, Physics in the Kitchen*; **Jaime Escalante** of Garfield High School, *Science and Ocean Exploration* with classroom guest Eugenie Clark, aka "the shark lady"; **John Renton** of West Virginia University, *Volcanic Activity*; **Roberta Anding** of the Baylor College of Medicine, *Nutrition Made Clear*; **Kay Toliver** of New York City's East Harlem Public School No. 72, *Estimation: Going to the Dogs*, with 10-year-old students; **Alex Filippenko** of University of California, Berkeley, Choice excerpts from his 96-lecture course, *Understanding the Universe: An Introduction to Astronomy*; **Don Showalter** of the University of Wisconsin, Stevens Point, demonstrations from *The World of Chemistry*; **Scott Stevens** of James Madison University, *Games People Play, The World of Game Theory in Life, Business and Beyond*; **Verne Rockcastle** of Cornell University, *Conceptual development in teaching and learning science in elementary and middle school*; **Sherwin Nuland** of the Yale School of Medicine, *Helen Taussig and the Development of Cardiac Surgery*; **Michael Starbird** of the University of Texas at Austin, *Meaning From Data: Quack Medicine, Good Hospitals, and Dieting*; **Bassam Shakhashiri** of the University of Wisconsin, Madison, lecture-demonstration aimed at sparking an interest in science—chemistry in particular—among children and adolescents; **Albert Bartlett** of the University of Colorado at Boulder, *Arithmetic, Population and Energy*; **Patrick Grim** of the State University of New York at Stony Brook, *The Dream, the Brain, the Machine*; **Woodie Flowers** of Massachusetts Institute of Technology, on the famous course, *2.007*; **Robert Fovell** of University of California, Los Angeles, *Meteorology: An Introduction to the Wonders of the Weather*.

Dozens of relevant door prizes will be raffled off throughout the evening right up to midnight. Receive a useful handout. Come and go, stay as long as you wish. Bring your dinner!

Friday, March 11

A Broad Spectrum for Science Learning Breakfast with Gretchen Walker (M-3)
(Tickets Required: $15)
Yerba Buena Salon 9, Marriott ..... 7:00–8:00 AM

Development Advisory Board Meeting
By Invitation Only
Executive Boardroom, Hilton..... 7:00–8:15 AM

Dorothy K. Culbert Chapters and Associated Groups Breakfast (M-4)
(Tickets Required: $50)
Yosemite B, Hilton..... 7:00–8:30 AM

High School Breakfast (M-5)
(Tickets Required: $50)
Yerba Buena 14, Marriott..... 7:00–8:30 AM

NMLSTA Board Meeting (Part 1)
For NMLSTA Members Only
Union Square 9, Hilton ..... 7:00–9:00 AM

AMSE Alice J. Moses Breakfast
By Invitation Only
Club Room, Marriott..... 7:00–9:00 AM

APAST Breakfast Meeting
By Invitation Only
Golden Gate Salon C3, Marriott ..... 7:00–9:00 AM

Association of Science Materials Centers' Networking Forum
($20 Preregistration Required)
Continental 8, Hilton..... 7:30–9:30 AM

Aerospace Programs Advisory Board Meeting
Seacliff, Hilton..... 8:30–10:30 AM

NCATE Workshop: Writing to Improve Your Program
Union Square 12, Hilton ..... 8:30 AM–3:30 PM

NSTA International Lounge
Laurel, Marriott..... 9:00 AM–5:00 PM

AMSE Membership Meeting
By Invitation Only
Pacific F, Marriott..... 10:00 AM–12 Noon

SEPA Luncheon
By Invitation Only
Golden Gate Salon C3, Marriott ..... 12 Noon–2:00 PM

NSELA/ASTE Luncheon (M-6)
(Tickets Required: $65)
Yosemite C, Hilton..... 12 Noon–2:00 PM

NSTA/NMLSTA Middle Level Luncheon (M-7)
(Tickets Required: $65)
Continental 8, Hilton..... 12 Noon–2:00 PM

National Lab Network Pep Rally
Union Square 1/2, Hilton ..... 12:30–1:30 PM

ExploraVision Ice Cream Social and Information Session
Golden Gate Salon B, Marriott ..... 2:00–3:00 PM

NSTA District Meet and Greet in Honor of Wendell G. Mohling
Sponsored by LEGO Education
Exhibit Hall, Moscone Center ..... 2:00–3:30 PM

CESI President's Roundtable
By Invitation Only
Union Square 14, Hilton..... 3:00–4:00 PM

NMLSTA Ice Cream Social
Continental 6, Hilton..... 3:00–4:30 PM

International Advisory Board Meeting
Seacliff, Hilton..... 3:00–5:00 PM

GEMS Network Reception
Club Room, Marriott..... 3:00–5:00 PM

SCST Business Meeting
Union Square 17/18, Hilton..... 3:30–5:00 PM

GEICO/NSTA New Member Orientation
Sponsored by GEICO
Yosemite B, Hilton..... 4:00–5:00 PM

APAST Social Reception and General Meeting
By Invitation Only
Golden Gate Salon C3, Marriott ..... 5:00–7:00 PM

Student Chapter and Student Members Reception
Open to All Preservice Teachers and Those Who Work with Them
Continental 8, Hilton.....5:30–7:00 PM

NMLSTA Board Meeting (Part 2)
For NMLSTA Members Only
Union Square 9, Hilton .....5:30–7:00 PM

Albert Einstein Distinguished Educator Fellowship Program Reception
Yerba Buena Salon 10, Marriott .....5:30–7:30 PM

NSTA Teacher Awards Gala (M-8)
(Tickets Required: $65)
Yerba Buena Salon 7, Marriott ..... 6:00–8:30 PM

California Reception
By Invitation Only
Continental 6, Hilton..... 6:30–8:00 PM

NESTA Friends of Earth Science Reception
Club Room, Marriott..... 6:30–8:00 PM

SCST Dessert Social and Poster Session
Open to College Faculty and SCST members
Continental 4, Hilton..... 7:30–9:00 PM

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, <u>except Breakfast</u>

- 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

Academy of Model Aeronautics (Booth #1039)

Friday, March 11	10:00–11:30 AM	300, Moscone Center	Science Lessons Soar with AeroLab (p. 51)

Bio-Rad Laboratories (Booth #1319)

Friday, March 11	8:00–9:30 AM	308, Moscone Center	Bio-Rad Enzymes and Biofuels—Go from Grass to Gas! (p. 33)
Friday, March 11	9:00–11:00 AM	306, Moscone Center	Bio-Rad Protein Electrophoresis Made Fast, Easy, and Affordable! (p. 38)
Friday, March 11	10:30–11:45 AM	308, Moscone Center	Bio-Rad Light Up Your Classroom with pGLO™ Transformation (p. 52)
Friday, March 11	1:00–2:00 PM	308, Moscone Center	Bio-Rad Genes in a Bottle™ Kit (p. 84)
Friday, March 11	1:00–3:30 PM	306, Moscone Center	Bio-Rad Forensic DNA Fingerprinting Kit (p. 85)
Friday, March 11	3:00–4:30 PM	308, Moscone Center	Finding Funds for Biotech: Grant-writing Workshop (p. 99)

BIOZONE International (Booth #1018)

Friday, March 11	4:00–5:30 PM	256, Moscone Center	A Showcase of BIOZONE's Latest Workbooks and Presentation Media for Grades 9–12 (p. 112)

Carolina Biological Supply Co. (Booth #1500)

Friday, March 11	7:00–8:30 AM	122, Moscone Center	Next Steps for Science: Science Supervisor Breakfast and Forum (p. 16)
Friday, March 11	8:00–9:30 AM	120, Moscone Center	Introduction to Protozoa (p. 28)
Friday, March 11	8:00–9:30 AM	121, Moscone Center	Exploring Feline Anatomy with Carolina's Perfect Solution® Cats (p. 28)
Friday, March 11	9:00–10:30 AM	122, Moscone Center	Swing, Roll, and Spin into STEM in Your Primary Classroom: Building Blocks of Science (p. 37)
Friday, March 11	10:00–11:30 AM	120, Moscone Center	Exploring Gene Function in *C. elegans*: Mutations and RNA Interference (p. 49)
Friday, March 11	10:00–11:30 AM	121, Moscone Center	Innovative and Engaging Chemistry Labs with Real-World Connections. Discover the Inquiries in Science® Series (p. 49)
Friday, March 11	11:00 AM–2:00 PM	122, Moscone Center	Lunch and Learn: Discover a New Inquiry Program for Secondary Schools (p. 63)
Friday, March 11	12 Noon–1:30 PM	120, Moscone Center	Genetics with *Drosophila* (p. 64)
Friday, March 11	12 Noon–1:30 PM	121, Moscone Center	Carolina's Young Scientist's Dissection Series (p. 64)
Friday, March 11	2:00–3:30 PM	120, Moscone Center	Fast Gels for Fast Times (96)
Friday, March 11	2:00–3:30 PM	121, Moscone Center	Need "Energy" in Your Environmental Classes? Learn About Carolina's New Inquiries in Science® (p. 96)
Friday, March 11	2:30–4:00 PM	122, Moscone Center	Science Notebooking: Integrating Writing and Science Through Catastrophic Events (p. 99)
Friday, March 11	4:00–5:30 PM	120, Moscone Center	Butterflies in Your Classroom (p. 111)
Friday, March 11	4:00–5:30 PM	121, Moscone Center	Rats! Inquiry-based Dissection with Carolina's Perfect Solution® Specimens (p. 111)
Friday, March 11	4:15–5:30 PM	122, Moscone Center	Learning to Read, Reading to Learn: Literacy, Notebooks, and the Power of Inquiry! (p. 113)

CPO Science/School Specialty Science (Booth #1628)

Friday, March 11	8:00–9:30 AM	131, Moscone Center	Genetics: Crazy Traits and Adaptation Survivor (p. 30)
Friday, March 11	10:00–11:30 AM	131, Moscone Center	Optics with Light and Color: A Series of EnLIGHTening Experiments! (p. 49)
Friday, March 11	12 Noon–1:30 PM	131, Moscone Center	Charles' Law and Boyle's Law Uncovered with CPO's Gas Laws Kit (p. 64)
Friday, March 11	2:00–3:30 PM	131, Moscone Center	Harmonic Motion and Hooke's Law with CPO's Springs and Swings (p. 96)

CPO Science/School Specialty Science, cont. (Booth #1628)

Friday, March 11	4:00–5:30 PM	131, Moscone Center	Make Dimensional Analysis Fun with CPO Science's New Conversion Chain Cards (p. 112)

Delta Education/School Specialty Science (Booth #1529)

Friday, March 11	8:00–9:15 AM	123, Moscone Center	Put Some Spark into Science Investigations (p. 28)
Friday, March 11	10:00–11:15 AM	123, Moscone Center	Integrating Science and Literacy, Grades 1–6 (p. 49)
Friday, March 11	12 Noon–1:15 PM	123, Moscone Center	FOSS and DSM Kit Refurbishment/Material Management (p. 64)
Friday, March 11	2:00–3:15 PM	123, Moscone Center	Technological Design Using STEM Initiatives (p. 94)

Delta Education/School Specialty Science–FOSS (Booth #1529)

Friday, March 11	8:30–11:00 AM	130, Moscone Center	Middle School Science Notebooks to Assess Learning with FOSS (For Experienced Users) (p. 36)
Friday, March 11	12 Noon–2:00 PM	130, Moscone Center	Taking Science Outdoors with FOSS K–8 (p. 70)
Friday, March 11	3:00–5:00 PM	130, Moscone Center	FOSS Planetary Science for Middle School (p. 100)

Discovery Education (Booth #2123)

Friday, March 11	8:00–9:30 AM	206, Moscone Center	3M Young Scientist Challenge/Science of Everyday Life (p. 30)
Friday, March 11	10:00–11:30 AM	206, Moscone Center	Explore the Blue Near You: Bring Critical Aquatic Issues to Life with New Resources! (p. 50)
Friday, March 11	12 Noon–1:30 PM	206, Moscone Center	Siemens STEM Academy: Top 10 STEM Resources (p. 66)
Friday, March 11	2:00–3:30 PM	206, Moscone Center	Layers of Learning with Google Earth: A Free Round-Trip Ticket to Anywhere in the World (p. 97)
Friday, March 11	4:00–5:30 PM	206, Moscone Center	Move Beyond the Textbook (p. 112)

Educational Innovations, Inc. (Booth #1029)

Friday, March 11	8:00–9:30 AM	303, Moscone Center	Get Charged Up with Educational Innovations! (p. 32)
Friday, March 11	10:00–11:30 AM	303, Moscone Center	Get Charged Up with Educational Innovations! (p. 52)
Friday, March 11	12 Noon–1:30 PM	303, Moscone Center	3-2-1 Blast Off! (p. 68)
Friday, March 11	2:00–3:30 PM	303, Moscone Center	3-2-1 Blast Off! (p. 98)
Friday, March 11	4:00–5:30 PM	303, Moscone Center	Standards + EI = Cool & Wow (p. 113)

Esri (Booth #719)

Friday, March 11	10:00–11:30 AM	304, Moscone Center	Analyzing Science Data with Web GIS (p. 52)

Fisher Science Education (Booth #1915)

Friday, March 11	8:00–9:00 AM	236/238, Moscone	Innovating Science: Chemistry Demonstrations That Really Get a Reaction! (p. 27)
Friday, March 11	9:30–10:30 AM	236/238, Moscone	Learn How to Develop a STEM Challenge Competition Using K'NEX® (p. 47)
Friday, March 11	11:00 AM–12 Noon	236/238, Moscone	Improving Standardized Test Scores with Engaging Learning Systems for Middle and High School Students (p. 63)
Friday, March 11	1:00–2:30 PM	236/238, Moscone	Art *vs.* Science: The Role of Science in the Wine-making Process (p. 84)
Friday, March 11	3:30–5:00 PM	236/238, Moscone	Art *vs.* Science: The Role of Science in the Wine-making Process (p. 109)

Flinn Scientific, Inc. (Booth #1801)

Friday, March 11	8:00–9:30 AM	304, Moscone Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 32)
Friday, March 11	10:00 AM–12 Noon	135, Moscone Center	Flinn Morning of Chemistry: Macro Modeling Micro Matter (p. 52)

Flinn Scientific, Inc., cont. (Booth #1801)

Friday, March 11	12 Noon–1:30 PM	304, Moscone Center	How to Design a Safe and Efficient Science Laboratory (p. 68)
Friday, March 11	2:00–3:30 PM	304, Moscone Center	Teaching AP Chemistry: Optimize Your Students' Laboratory Experiences (p. 98)

Frey Scientific/School Specialty Science (Booth #1629)

Friday, March 11	8:00–9:15 AM	124, Moscone Center	Inquiry Investigations™ Biotechnology Activities with E-Gels® (p. 28)
Friday, March 11	10:00–11:15 AM	124, Moscone Center	Bring Your Science Lab into the 21st Century Using iNeo/SCI™ Virtual Science Solutions (p. 49)
Friday, March 11	12 Noon–1:15 PM	124, Moscone Center	Educational Science Lab Design and Implementation for the 21st Century Made Easy (p. 64)
Friday, March 11	2:00–3:15 PM	124, Moscone Center	Inquiry Investigations™ Forensics Science Curriculum Module and Kits (p. 94)
Friday, March 11	4:00–5:15 PM	124, Moscone Center	Introducing Inquiry Investigations™ Hands-On Inquiry Activities Focusing On Technology (p. 111)

Houghton Mifflin Harcourt (Booth #2200)

Friday, March 11	12 Noon–1:30 PM	300, Moscone Center	Reflections on Teaching Introductory Physics (p. 66)
Friday, March 11	2:00–3:30 PM	300, Moscone Center	Misconception Mania: Exciting and Engaging Ways to Address Common Misunderstandings in K–8 (p. 97)

Howard Hughes Medical Institute (Booth #1228)

Friday, March 11	8:00–9:30 AM	134, Moscone Center	FREE Teaching Resources from the Howard Hughes Medical Institute (HHMI) on Viral Outbreaks and the Science of Emerging Diseases (p. 30)
Friday, March 11	10:00–11:30 AM	134, Moscone Center	Hunting Dengue and Other Viruses (p. 50)
Friday, March 11	12 Noon–1:30 PM	134, Moscone Center	Teaching Viruses, Disease, and Immunology with Free Resources from the Howard Hughes Medical Institute (HHMI) (p. 66)
Friday, March 11	2:00–3:30 PM	134, Moscone Center	Free Classroom Resources from the Howard Hughes Medical Institute (HHMI) for Teaching Evolution (p. 96)
Friday, March 11	4:00–5:00 PM	134, Moscone Center	Seashell Taxonomy: A Venomous Topic (p. 111)

It's About Time (Booth #1621)

Friday, March 11	8:00–9:00 AM	307, Moscone Center	*Active Physics*, Newly Revised 3rd Edition (p. 27)
Friday, March 11	9:30–10:30 AM	307, Moscone Center	Active Chemistry (p. 47)
Friday, March 11	11:00 AM–12 Noon	307, Moscone Center	Coordinated Science: Physical, Earth, and Space Sciences (p. 63)
Friday, March 11	12:30–1:30 PM	307, Moscone Center	*InterActions in Physical Science*—Newly Revised (p. 83)
Friday, March 11	2:00–3:00 PM	307, Moscone Center	Physics for Everyday Thinking (PET) and Physical Science for Everyday Thinking (PSET) (p. 94)
Friday, March 11	3:30–4:30 PM	307, Moscone Center	There Is More to Project-Based Inquiry Science (PBIS) Than Just a Project (p. 108)

The JASON Project/Immersion Learning/Nautilus Live (Booth #1338)

Friday, March 11	12 Noon–1:30 PM	202/204, Moscone	Using Math and Science as the "New Literacy" to Enhance Achievement for At-Risk Students (p. 66)
Friday, March 11	2:00–3:30 PM	202/204, Moscone	Practical Reading Strategies for the Science Classroom (p. 97)

Kendall Hunt Publishing Co. (Booth #1729)

Friday, March 11	8:00–9:30 AM	300, Moscone Center	Building Inquiry with a Human Approach (p. 32)

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Key Curriculum Press (Booth #1838)

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LAB-AIDS, Inc. (Booth #1613)

Friday, March 11	8:00–9:30 AM	125, Moscone Center	Teaching About the Rock Cycle and Earth Time (p. 28)
Friday, March 11	10:00–11:30 AM	125, Moscone Center	Fast and Furious: Force and Motion for Middle School (p. 49)
Friday, March 11	12 Noon–1:30 PM	125, Moscone Center	Teaching About Gene Expression (p. 64)
Friday, March 11	2:00–3:30 PM	125, Moscone Center	What Is a Species? (p. 96)
Friday, March 11	4:00–5:30 PM	125, Moscone Center	Real Chemistry for All Students—But How? (p. 111)

McGraw-Hill School Education Group (Booth #2129)

Friday, March 11	4:00–5:30 PM	304, Moscone Center	Knowing What! Knowing Why! Knowing How! Tools and Traits of Effective Science Teachers (p. 113)

Millmark Education (Booth #1101)

Friday, March 11	10:00–11:30 AM	202/204, Moscone	Scaffold Science Learning with Guided Inquiry and Differentiated Content-Literacy Instruction (p. 50)

Mississippi State University (Booth #1022)

Friday, March 11	8:00–9:30 AM	202/204, Moscone	Master of Science in Geosciences via Distance Learning from Mississippi State University (p. 30)

NASA Education (Booth #729)

Friday, March 11	8:00–8:30 AM	310, Moscone Center	A Space-tial Perspective of Earth (p. 17)
Friday, March 11	8:00–9:20 AM	309, Moscone Center	NASA Fit Explorer (p. 28)
Friday, March 11	8:40–9:10 AM	310, Moscone Center	Dropping in a Microgravity Environment (DIME) (p. 36)
Friday, March 11	9:20–9:50 AM	310, Moscone Center	Dropping in a Microgravity Environment (DIME) (p. 38)
Friday, March 11	9:30–11:20 AM	309, Moscone Center	Nice Ride! Design and Build an Exploration Rover Using the Engineering Design Process (p. 47)
Friday, March 11	10:10–10:40 AM	310, Moscone Center	A Space-tial Perspective of Earth (p. 52)
Friday, March 11	12 Noon–12:50 PM	310, Moscone Center	Future of STEM Education (p. 63)
Friday, March 11	12:30–1:20 PM	309, Moscone Center	NASA Math & Science @ Work—From Launch to Landing (p. 70)
Friday, March 11	1:00–2:00 PM	310, Moscone Center	NASA Education Overview (p. 84)
Friday, March 11	1:30–2:00 PM	309, Moscone Center	The Puerto Rico SUN-EARTH Program: A Successful Educational Venture (p. 85)
Friday, March 11	2:10–3:30 PM	309, Moscone Center	21st-Century Explorer (p. 99)
Friday, March 11	3:40–5:30 PM	309, Moscone Center	Robots for a Penny (p. 110)

National Geographic School Publishing (Booth #1528)

Friday, March 11	12 Noon–1:30 PM	256, Moscone Center	The Magnetic Attraction of Inquiry: Transforming Science Instruction (p. 66)

No Dinosaurs in Heaven (Booth #2640)

Friday, March 11	5:30–7:00 PM	104, Moscone Center	*No Dinosaurs in Heaven* Film Screening/Guided Discussion (p. 119)

PASCO Scientific (Booth #1211 and Booth #1300)

Friday, March 11	8:00–9:30 AM	132, Moscone Center	Tough Topics in Earth Science: Plate Tectonics with My World GIS™ (p. 30)
Friday, March 11	8:00–9:30 AM	133, Moscone Center	Classroom Weather Station with PASCO Probeware (K–5 Science) (p. 30)

PASCO Scientific, cont. (Booth #1211 and Booth #1300)

Friday, March 11	10:00–11:30 AM	133, Moscone Center	AP Chemistry Determination of the Rate of Reaction and Its Order (p. 50)
Friday, March 11	10:00–11:30 AM	132, Moscone Center	Measuring Reaction Time to a Visual Stimulus (Guided Inquiry Lab) (p. 49)
Friday, March 11	12 Noon–1:30 PM	132, Moscone Center	Tough Topics in Physics and Physical Science: Motion (p. 64)
Friday, March 11	12 Noon–1:30 PM	133, Moscone Center	Tough Topics in Earth Science: Greenhouse Gases (p. 66)
Friday, March 11	2:00–3:30 PM	133, Moscone Center	Middle School Earth Science: Learn Key Concepts Through Hands-On, Probeware-based Activities (p. 96)
Friday, March 11	2:00–3:30 PM	132, Moscone Center	Voltaic Cells (Guided Inquiry Lab) (p. 96)
Friday, March 11	4:00–5:30 PM	133, Moscone Center	Renewable Energy Exploration: Solar and Wind Power (p. 112)
Friday, March 11	4:00–5:30 PM	132, Moscone Center	Middle School Physical Science: Learning Key Concepts Through Hands-On, Probeware-based Activities (p. 112)
Friday, March 11	5:00–6:30 PM	102, Moscone Center	PASCO Presents the 9th Annual Just Physics Evening (p. 119)

Pearson (Booth #1601)

Friday, March 11	8:00–9:30 AM	305, Moscone Center	If You Teach AP Chemistry, You Gotta Get This! (p. 32)
Friday, March 11	10:00–11:30 AM	305, Moscone Center	The Science Behind Climate Change: What Every Student (and Teacher) Should Know (p. 52)
Friday, March 11	12 Noon–1:30 PM	305, Moscone Center	The Next Generation of Virtual Labs for the Entire Science Curriculum!—No Cleanup Required (p. 68)
Friday, March 11	2:00–3:30 PM	305, Moscone Center	Practical and Effective Inquiry in *Pearson Chemistry* ©2012 (p. 98)
Friday, March 11	4:00–5:30 PM	305, Moscone Center	Is America Flunking Science? If So, Why? What Can Teachers, Standards, and Assessments Do About It? (p. 113)

Sangari Active Science (Booth #2314)

Friday, March 11	4:00–5:30 PM	202/204, Moscone	Think. Do. Learn—Explore Science Fundamentals (p. 112)

Sargent-Welch (Booth #1907)

Friday, March 11	10:00–11:30 AM	274/276, Moscone	Stronger, New, and Improved Biotechnology: Science for the New Millennium (p. 50)
Friday, March 11	2:00–3:30 PM	274/276, Moscone	Jumpin' Protein Flash: Protein Spectrophotometry in Biotech (p. 97)

ScholAR® Chemistry (Booth #1907)

Friday, March 11	8:00–9:30 AM	270/272, Moscone	ScholAR Hands-On Hand Jive (p. 32)
Friday, March 11	2:00–3:30 PM	270/272, Moscone	ScholAR's Got a Brand-new Bag and It's RED! (p. 97)

Science Kit & Boreal Laboratories (Booth #1901)

Friday, March 11	10:00–11:30 AM	270/272, Moscone	All the Small Things: Teaching STEM with Digital Microscopes (p. 50)
Friday, March 11	12 Noon–1:30 PM	270/272, Moscone	Paint It RED! Using Technology to Teach Physical Science (p. 66)

Simulation Curriculum Corp. (Booth #928)

Friday, March 11	10:00–11:30 AM	256, Moscone Center	Journey to the Center of the Milky Way in 3-D—The Only Way to Go! (p. 50)

Texas Instruments (Booth #1921)

Friday, March 11	8:00–9:00 AM	110, Moscone Center	Enhance Student Understanding and Analysis of Real-World Data with the TI-Nspire™ Solution and Vernier Sensors and Probes (p. 27)

Texas Instruments, cont. (Booth #1921)

Friday, March 11	9:30–10:30 AM	110, Moscone Center	Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Physics Classroom (p. 47)
Friday, March 11	11:00 AM–12 Noon	110, Moscone Center	Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Chemistry Classroom (p. 63)
Friday, March 11	12:30–1:30 PM	110, Moscone Center	Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Biology Classroom (p. 83)
Friday, March 11	2:00–3:00 PM	110, Moscone Center	Learning AP* Science Concepts with NASA and Texas Instruments (p. 94)
Friday, March 11	3:30–4:30 PM	110, Moscone Center	Introducing Vernier DataQuest Data Collection for TI-Nspire™ Technology (p. 108)

Vernier Software & Technology (Booth #1518)

Friday, March 11	8:00–9:30 AM	302, Moscone Center	New! Advanced Physics with Vernier (p. 32)
Friday, March 11	8:00–9:30 AM	301, Moscone Center	*Human Physiology with Vernier* (p. 32)
Friday, March 11	10:00–11:30 AM	302, Moscone Center	What's New at Vernier (p. 51)
Friday, March 11	10:00–11:30 AM	301, Moscone Center	Biology with Vernier (p. 51)
Friday, March 11	12 Noon–1:30 PM	302, Moscone Center	Video Analysis with Vernier (p. 67)
Friday, March 11	12 Noon–1:30 PM	301, Moscone Center	*Chemistry with Vernier* (p. 67)
Friday, March 11	2:00–3:30 PM	302, Moscone Center	*Earth Science with Vernier* (p. 98)
Friday, March 11	2:00–3:30 PM	301, Moscone Center	*Physics with Vernier* (p. 97)

WARD'S Natural Science (Booth #2005), Science Kit & Boreal Laboratories (Booth #1901), and Sargent-Welch (Booth #1907)

Friday, March 11	7:00–9:00 PM	135, Moscone Center	Sci-A-Palooza VIP Night of Science (p. 120)

WARD'S Natural Science (Booth #2005)

Friday, March 11	8:00–9:30 AM	274/276, Moscone	Iron Teacher (p. 32)
Friday, March 11	12 Noon–1:30 PM	274/276, Moscone	Who Are You? Blood Typing (p. 66)
Friday, March 11	4:00–5:30 PM	270/272, Moscone	Take Me to the River: Modeling Wetlands, Floodplains, and Risk Assessment (p. 112)
Friday, March 11	4:00–5:30 PM	274/276, Moscone	Watching the Detectives: Blood Spatter (p. 113)

Water Environment Federation/California Water Environment Association (Booth #722)

Friday, March 11	4:00–5:30 PM	300, Moscone Center	Stream Assessment: An Active, Integrated Approach to Science Learning (p. 113)

Wavefunction, Inc. (Booth #1712)

Friday, March 11	8:00–9:30 AM	256, Moscone Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 30)

G = General M = Middle School S = Supervision/Administration T = Teacher Preparation
P = Preschool H = High School I = Informal EducationE = Elementary
C = College R = Research

Biology/Life Science

8:00–9:00 AM	C	Union Square 17/18, Hilt	SCST Session: Using Public Databases to Enhance Learning of Molecular Biology and Genetics (p. 20)
8:00–9:00 AM	M–H	Pacific A, Marriott	DuPont Session: DuPont Presents—The Science of Food Safety (p. 25)
8:00–9:00 AM	E–H	Pacific H, Marriott	Inquiry-based Activities to Accompany the 12 Principles of Plant Biology (p. 25)
8:00–9:00 AM	M–H	Pacific I, Marriott	Macromolecules and Biogeochemical Cycles... FUN! (p. 21)
8:00–9:00 AM	E	Golden Gate 2, Hilton	Becoming Bird Brainiacs (p. 18)
8:00–9:00 AM	M–H	Yerba Buena 4, Marriott	SEPUP Pathway Session: Using Simulations and Modeling in an Issues-based Science Classroom (p. 26)
8:00–9:20 AM	3–5	309, Moscone Center	NASA Fit Explorer (p. 28)
8:00–9:30 AM	9–12	300, Moscone Center	Building Inquiry with a Human Approach (p. 32)
8:00–9:30 AM	5–12	131, Moscone Center	Genetics: Crazy Traits and Adaptation Survivor (p. 30)
8:00–9:30 AM	9–12	120, Moscone Center	Introduction to Protozoa (p. 28)
8:00–9:30 AM	9–C	121, Moscone Center	Exploring Feline Anatomy with Carolina's Perfect Solution® Cats (p. 28)
8:00–9:30 AM	9–C	301, Moscone Center	*Human Physiology with Vernier* (p. 32)
8:00–9:30 AM	9–C	134, Moscone Center	FREE Teaching Resources from the Howard Hughes Medical Institute (HHMI) on Viral Outbreaks and the Science of Emerging Diseases (p. 30)
8:00–9:30 AM	6–12	274/276, Moscone Center	Iron Teacher (p. 32)
8:00–9:30 AM	9–C	308, Moscone Center	Bio-Rad Enzymes and Biofuels—Go from Grass to Gas! (p. 33)
8:30–9:00 AM	I	Sierra A, Marriott	Partnering Research Scientists and Secondary Science Teachers (p. 35)
9:00–10:00 AM	G	Yerba Buena 9/2, Marriott	Informal Science Day Session: Promoting Environmental Literacy Through Student Engagement and Teacher Professional Development (p. 36)
9:00–10:00 AM	G	Yerba Buena 9/1, Marriott	Informal Science Day Session: DNA Day Activities (p. 37)
9:00–11:00 AM	9–C	306, Moscone Center	Bio-Rad Protein Electrophoresis Made Fast, Easy, and Affordable! (p. 38)
9:30–10:30 AM	M–H	Yerba Buena 4, Marriott	SEPUP Pathway Session: Differentiated Instruction Related to Science and Societal Issues (p. 44)
9:30–10:30 AM	M–H	Pacific I, Marriott	Our Amazing Immune System (p. 44)
9:30–10:30 AM	C	Union Square 17/18, Hilt	SCST Session: Pulling Students into Science Through Citizen Science and Investigations Focusing On Birds (p. 40)
9:30–10:30 AM	H–C	Continental 1, Hilton	Integrating Bioinformatics into Introductory Biology Courses (p. 43)
10:00–10:30 AM	M–C	Sierra A, Marriott	Supporting Students in Communicating Biology Concepts in Their Second Language (p. 48)
10:00–11:30 AM	9–C	301, Moscone Center	Biology with Vernier (p. 51)
10:00–11:30 AM	9–C	120, Moscone Center	Exploring Gene Function in *C. elegans*: Mutations and RNA Interference (p. 49)
10:00–11:30 AM	9–12	132, Moscone Center	Measuring Reaction Time to a Visual Stimulus (Guided Inquiry Lab) (p. 49)
10:00–11:30 AM	9–12	274/276, Moscone Center	Stronger, New, and Improved Biotechnology: Science for the New Millennium (p. 50)
10:00–11:30 AM	6–12	270/272, Moscone Center	All the Small Things: Teaching STEM with Digital Microscopes (p. 50)
10:00–11:30 AM	9–C	134, Moscone Center	Hunting Dengue and Other Viruses (p. 50)
10:30–11:45 AM	9–C	308, Moscone Center	Bio-Rad Light Up Your Classroom with pGLO™ Transformation (p. 52)
11:00 AM–12 Noon	H–C	Continental 1, Hilton	Frontiers in Genomics (p. 59)
11:00 AM–12 Noon	H	Pacific I, Marriott	Using Multiple-Choice Exams to Test Much More Than Just Facts (p. 56)
11:00 AM–12 Noon	H	Yerba Buena 8/2, Marriott	Teacher Researcher Day Session: Translating Evolutionary Biology Research into Inquiry-based Learning Experiences in High School Science Classrooms (p. 57)
11:00 AM–12 Noon	M–C	Pacific I, Marriott	Collaborative Learning with WikiSpaces and MyStuDIYo (p. 56)
11:00 AM–12 Noon	M–H	Yerba Buena 8/2, Marriott	Teacher Researcher Day Session: Our Process of Letting Go: The Impact of Student Inquiries with a Model of the Cell Membrane (p. 57)
12 Noon–1:30 PM	9–12	120, Moscone Center	Genetics with *Drosophila* (p. 64)
12 Noon–1:30 PM	9–12	125, Moscone Center	Teaching About Gene Expression (p. 64)
12 Noon–1:30 PM	6–12	274/276, Moscone Center	Who Are You? Blood Typing (p. 66)

12 Noon–1:30 PM	9–C	134, Moscone Center	Teaching Viruses, Disease, and Immunology with Free Resources from the Howard Hughes Medical Institute (HHMI) (p. 66)
12 Noon–1:30 PM	5–8	121, Moscone Center	Carolina's Young Scientist's Dissection Series (p. 64)
12:30–1:30 PM	H	Pacific F, Marriott	AMSE Session: Achieving Academic Excellence, One Case at a Time (p. 76)
12:30–1:30 PM	M	Yerba Buena 2, Marriott	BSCS Pathway Session: Using Rare Diseases to Teach About Scientific Inquiry (p. 81)
12:30–1:30 PM	9–12	110, Moscone Center	Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Biology Classroom (p. 83)
12:30–1:30 PM	H–C	Continental 1, Hilton	Using the Hardy-Weinberg Equilibrium to Illustrate Evolutionary Change (p. 79)
12:30–1:30 PM	H	Pacific H, Marriott	Synergy: Bringing Biology, Ecology, and Technology Together (p. 80)
12:30–1:30 PM	M–H	Yerba Buena 8/1, Marriott	Teacher Researcher Day Session: Developing Pedagogical Content Knowledge: Learning to Teach Scientific Concepts (p. 76)
12:30–1:30 PM	H	Yerba Buena 8/2, Marriott	Teacher Researcher Day Session: Connecting Science Learning Across Contexts: New Instructional Methods (p. 77)
12:30–1:30 PM	H	Sierra A, Marriott	Sparking Biological Curiosity (p. 76)
1:00–2:00 PM	7–C	308, Moscone Center	Bio-Rad Genes in a Bottle™ Kit (p. 84)
1:00–3:30 PM	9–C	306, Moscone Center	Bio-Rad Forensic DNA Fingerprinting Kit (p. 85)
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2:00–3:00 PM	C	Union Square 17/18, Hilt	SCST Session: Meeting the Challenges of Teaching Inquiry in Introductory Biology Courses at Two- and Four-Year Colleges (p. 87)
2:00–3:00 PM	H	Yerba Buena 4, Marriott	SEPUP Pathway Session: Integrating World Health Issues into High School Cell Biology (p. 93)
2:00–3:00 PM	G	Pacific I, Marriott	ASM Presents: Microbiology—A Flavor of San Francisco (p. 88)
2:00–3:00 PM	M–H	Sierra A, Marriott	Using Dialogue and Art to Enhance Science Inquiry and Make Student Thinking Visible (p. 89)
2:00–3:00 PM	H–C	Continental 1, Hilton	Take Two: A Molecular Story of Reprogrammed Stem Cells (p. 91)
2:00–3:00 PM	H	Pacific H, Marriott	Immunology…It's Child's Play! (p. 92)
2:00–3:30 PM	9–12	120, Moscone Center	Fast Gels for Fast Times (p. 96)
2:00–3:30 PM	9–12	125, Moscone Center	What Is a Species? (p. 96)
2:00–3:30 PM	9–12	274/276, Moscone Center	Jumpin' Protein Flash: Protein Spectrophotometry in Biotech (p. 97)
2:00–3:30 PM	9–C	134, Moscone Center	Free Classroom Resources from the Howard Hughes Medical Institute (HHMI) for Teaching Evolution (p. 96)
3:00–4:30 PM	7–C	308, Moscone Center	Finding Funds for Biotech: Grant-writing Workshop (p. 99)
3:30–4:00 PM	E/C	Golden Gate 7, Hilton	Chloe's Personal Nutrition Guidebook: Discover Science, Literacy, and Technological Processes (p. 100)
3:30–4:30 PM	E–M	220/222, Moscone Center	Photosynthesis Strategies: The Foundation for Ecological Food Webs (p. 104)
3:30–4:30 PM	M–C	Pacific H, Marriott	It's Easy to Go Digital! (p. 106)
3:30–4:30 PM	E–H	Sierra A, Marriott	Nourishing the Planet in the 21st Century (p. 102)
3:30–4:30 PM	M	Willow, Marriott	Bring the Ocean Into Your Classroom with Digital Media (p. 102)
3:30–4:30 PM	G	Pacific I, Marriott	Discovery Boxes: A Tactile Approach to Conveying Concepts in Evolution (p. 106)
3:30–4:30 PM	H–C	Continental 1, Hilton	Insulin: A Molecular Story about the Gene, the Protein, the Physiology, and Diabetes (p. 105)
3:30–4:30 PM	G	Golden Gate 8, Hilton	NSTA Press Session: Uncovering Student Ideas in Life Science (p. 100)
3:30–4:30 PM	I	Golden Gate C1, Marriott	FDA Follow-Up Session: Science and Our Food Supply (Supplementary Curriculum) (p. 101)
4:00–5:00 PM	9–C	134, Moscone Center	Seashell Taxonomy: A Venomous Topic (p. 111)
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4:00–5:30 PM	9–12	305, Moscone Center	Is America Flunking Science? If So, Why? What Can Teachers, Standards, and Assessments Do About It? (p. 113)
5:00–6:00 PM	H	Pacific H, Marriott	It's Not All Zombies and Violence: Using Gaming to Promote Biotechnology Learning (p. 118)

5:00–6:00 PM	H–C	Continental 1, Hilton	Bar Coding Plants: Plant Systematics, PCR, and Bioinformatics in the Classroom (p. 117)
5:00–6:00 PM	P–M	Golden Gate C1, Marriott	FDA Follow-Up Session: Elementary-Level Food Safety and Nutrition Education (p. 115)
5:00–6:00 PM	H	Yerba Buena 4, Marriott	SEPUP Pathway Session: Teaching Core Genetics Concepts Through Issues Related to Genetically Modified Foods (p. 118)

Chemistry/Physical Science

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8:00–9:00 AM	G	Yerba Buena 15, Marriott	Affective Elements of a Science Learning Questionnaire (p. 21)
8:00–9:00 AM	M–H	Golden Gate A, Marriott	Polymer Potpourri (p. 24)
8:00–9:00 AM	M–H	Pacific J, Marriott	Polymers in Aviation (p. 25)
8:00–9:00 AM	7–12	236/238, Moscone Center	Innovating Science: Chemistry Demonstrations That Really Get a Reaction! (p. 27)
8:00–9:30 AM	8–C	256, Moscone Center	Teaching AP Chemistry with Molecular-Level Visualization and Simulation Tools (p. 30)
8:00–9:30 AM	6–12	270/272, Moscone Center	ScholAR Hands-On Hand Jive (p. 32)
8:00–9:30 AM	6–12	304, Moscone Center	Fantastic Physical Science Demonstrations from Flinn Scientific (p. 32)
8:00–9:30 AM	9–12	305, Moscone Center	If You Teach AP Chemistry, You Gotta Get This! (p. 32)
9:30–10:30 AM	9–12	307, Moscone Center	Active Chemistry (p. 47)
9:30–10:30 AM	H	Pacific J, Marriott	Dynamic Equilibrium: An Authentic Simulation (p. 44)
9:30–10:30 AM	H–C	Yosemite A, Hilton	Understanding the Revised AP Chemistry Course: Curriculum, Science Practices, and Instruction Design (p. 41)
10:00–10:30 AM	H	Yerba Buena 15, Marriott	Soap Convention: A Competition to Engage all Chemistry Students (p. 48)
10:00–11:30 AM	9–12	121, Moscone Center	Innovative and Engaging Chemistry Labs with Real-World Connections. Discover the Inquiries in Science® Series (p. 49)
10:00–11:30 AM	9–12	133, Moscone Center	AP Chemistry Determination of the Rate of Reaction and Its Order (p. 50)
10:00 AM–12 Noon	7–12	135, Moscone Center	Flinn Morning of Chemistry: Macro Modeling Micro Matter (p. 52)
11:00 AM–12 Noon	9–12	110, Moscone Center	Engage, Enhance, Explore with TI-Nspire™ Data Collection, Analysis, and Assessment in the Chemistry Classroom (p. 63)
11:00 AM–12 Noon	M	Golden Gate 4, Hilton	ACS Middle School Chemistry: Big Ideas About the Very Small (p. 60)
11:00 AM–12 Noon	M–H	Pacific J, Marriott	Chemical Nomenclature Rummy (p. 61)
11:00 AM–12 Noon	M–H	Yerba Buena 15, Marriott	Lotions, Potions, and Scrubs: Polymer Science in Cosmetics p. 58)
11:00 AM–12 Noon	H–C	Yosemite A, Hilton	Beyond the pH Meter: Using Technology to Overcome Student Misconceptions in Acid-Base Chemistry (p. 56)
12 Noon–1:30 PM	9–C	301, Moscone Center	*Chemistry with Vernier* (p. 67)
12:30–1:30 PM	7–9	307, Moscone Center	*InterActions in Physical Science*—Newly Revised (p. 83)
12:30–1:30 PM	G	Golden Gate A, Marriott	A Demo a Week Makes Science Class the Peak (p. 75)
12:30–1:30 PM	H–C/S	Yosemite A, Hilton	Laboratory Research Templates (LRT): A New and Effective Way to Promote Student Inquiry in the Laboratory (p. 75)
2:00–3:00 PM	H–C	Yosemite A, Hilton	How to Make Sense with Unit Conversion and Dimensional Analysis (p. 88)
2:00–3:00 PM	M–C	Pacific J, Marriott	Using Metacognition and Formative Assessment to Improve Student Learning in Chemistry (p. 92)
2:00–3:00 PM	M–C	Golden Gate A, Marriott	Fantastic Demos! (p. 88)
2:00–3:30 PM	9–12	270/272, Moscone Center	ScholAR's Got a Brand-new Bag and It's RED! (p. 97)
2:00–3:30 PM	9–12	132, Moscone Center	Voltaic Cells (Guided Inquiry Lab) (p. 96)
2:00–3:30 PM	9–12	304, Moscone Center	Teaching AP Chemistry: Optimize Your Students' Laboratory Experiences (p. 98)
2:00–3:30 PM	9–12	305, Moscone Center	Practical and Effective Inquiry in *Pearson Chemistry* ©2012 (p. 98)
2:00–3:30 PM	9–12	256, Moscone Center	Living By Chemistry: What Shape Is That Smell? (p. 97)
3:30–4:30 PM	H	Golden Gate A, Marriott	Inquiry-based Chemistry Labs on a Budget (p. 101)
3:30–4:30 PM	M–H/S	Continental 3, Hilton	Science Inquiry Using PhET: A Suite of Free Interactive Simulations (p. 105)
4:00–5:30 PM	12	125, Moscone Center	Real Chemistry for All Students—But How? (p. 111)
5:00–6:00 PM	E/C	Golden Gate 7, Hilton	Use of Learning Progressions for Improving Teacher and Student Understanding of Physical Science Concepts (p. 114)
5:00–6:00 PM	H	Golden Gate A, Marriott	The Polymer Science of Sporting Spheres (aka Balls) (p. 117)

Earth/Space Science

8:00–8:30 AM	6–12	310, Moscone Center	A Space-tial Perspective of Earth (p. 17)
8:00–9:00 AM	E–M	220/222, Moscone Center	I Feel the Earth Move Under My Feet! (p. 26)
8:00–9:00 AM	E–M	Continental 7, Hilton	Reading, Writing, and Rings: Using Saturn to Teach Science and Language Arts (p. 24)
8:00–9:00 AM	M–H/I	Pacific B, Marriott	Web 2.0 Earth System Resources for Secondary Students: Integrating NASA eClips™ and Space Math@NASA (p. 20)
8:00–9:00 AM	E–M	Golden Gate 5, Hilton	SOS: Solidify Our Science (p. 18)
8:00–9:00 AM	E–H	Yerba Buena 11, Marriott	SEE (Solar Energy for Education) (p. 26)
8:00–9:00 AM	I	Walnut, Marriott	Stellar Classification as Citizen Science (p. 25)
8:00–9:30 AM	7–12	132, Moscone Center	Tough Topics in Earth Science: Plate Tectonics with My World GIS™ (p. 30)
8:00–9:30 AM	2–5	133, Moscone Center	Classroom Weather Station with PASCO Probeware (K–5 Science) (p. 30)
8:00–9:30 AM	6–8	125, Moscone Center	Teaching About the Rock Cycle and Earth Time (p. 28)
8:00–9:30 AM	K–12	202/204, Moscone Center	Master of Science in Geosciences via Distance Learning from Mississippi State University (p. 30)
9:30–10:30 AM	E–H	Mtg Rm Hall D, Moscone	NESTA Session: National Earth Science Teachers Association Geology Share-a-Thon (p. 46)
9:30–10:30 AM	G	Pacific B, Marriott	Incorporating Google Moon and Mars into the Science Classroom (p. 41)
9:30–10:30 AM	E–H	Walnut, Marriott	NASA: Exploring Magnetism in Space Science (p. 44)
9:30–10:30 AM	H	Willow, Marriott	NSTA High School Earth Science Share Session (p. 41)
9:30–10:30 AM	M	Golden Gate 5, Hilton	Student-created Video Weather Reports (p. 39)
9:30–10:30 AM	M–H	220/222, Moscone Center	Visualizing the Unviewable: Simple Models to Activate Your Earthquake Instruction (p. 45)
9:30–10:30 AM	E–M	Continental 7, Hilton	Galileo's Notebook (p. 43)
9:30–10:30 AM	M	Golden Gate 5, Hilton	Assessing and Advancing Students' Understanding of Core Earth Systems Science Concepts with Classroom Network Technologies (p. 39)
9:30–10:30 AM	M–H	Pacific C, Marriott	Watershed Dynamics: Using Web-GIS to Study the Hydrosphere (p. 41)
10:00–11:30 AM	2	256, Moscone Center	Journey to the Center of the Milky Way in 3-D—The Only Way to Go! (p. 50)
10:00–11:30 AM	K–8	305, Moscone Center	The Science Behind Climate Change: What Every Student (and Teacher) Should Know (p. 52)
10:00–11:30 AM	10	304, Moscone Center	Analyzing Science Data with Web GIS (p. 52)
10:10–10:40 AM	6–12	310, Moscone Center	A Space-tial Perspective of Earth (p. 52)
11:00 AM–12 Noon	9–12	307, Moscone Center	Coordinated Science: Physical, Earth, and Space Sciences (p. 63)
11:00 AM–12 Noon	M	Golden Gate 5, Hilton	Beyond Polar Bears: Helping Students Use Data to Understand Global Climate Change (p. 54)
11:00 AM–12 Noon	G	Yerba Buena 9/4, Marriott	Informal Science Day Session: Teaching Astronomy with Small Telescopes in Informal Settings (p. 61)
11:00 AM–12 Noon	M–H	220/222, Moscone Center	Making the Water Cycle Real: A Journey from the School Yard to the Ocean (p. 58)
11:00 AM–12 Noon	E–H	Yerba Buena 11, Marriott	STEM in Action: The Bridge to the Real World (p. 61)
11:00 AM–12 Noon	E–H	Mtg Rm Hall D, Moscone	NESTA Session: National Earth Science Teachers Association Oceans and Atmosphere Share-a-Thon (p. 62)
11:00 AM–12 Noon	M–H	Walnut, Marriott	Classroom Connections to Our Sun, Our Atmosphere, and Satellites: Why Space Weather Matters (p. 61)
11:00 AM–12 Noon	M–H	Pacific C, Marriott	Activities, Labs, and Demos for Your Oceans Unit (p. 56)
12:30–1:30 PM	M–C	Pacific J, Marriott	Promoting Earthquake Literacy: Comparing Intra-plate and Plate Boundary Earthquakes (p. 81)
12:30–1:30 PM	M–H	Nob Hill D, Marriott	NASA: Graphing, Gravity, and Laws of Planetary Motion (p. 80)
12:30–1:30 PM	G	220/222, Moscone Center	Under Pressure! (p. 82)
12:30–1:30 PM	I	Yerba Buena 11, Marriott	Tools and Strategies for Engaging Students in Inquiry-based Earth System Science Field Studies (p. 81)
12:30–1:30 PM	E–H	Mtg Rm Hall D, Moscone	NESTA Session: National Earth Science Teachers Association Space Science Share-a-Thon (p. 82)
12:30–1:30 PM	M–H	Pacific C, Marriott	STEM Inquiry Using SWAC (Satellites Weather and Climate) Modules (p. 76)

12:30–1:30 PM	G	Pacific B, Marriott	Student Misconceptions in Astronomy: How Do We Address Them? (p. 76)
12:30–1:30 PM	E–H	Walnut, Marriott	They May Learn Differently, but They Can Learn, Can't They? (p. 81)
12:30–1:30 PM	M–H	Nob Hill C, Marriott	Exploring Sea Floor Spreading with Data from the Integrated Ocean Drilling Program (IODP) (p. 80)
12:30–1:30 PM	M/C	Golden Gate 5, Hilton	Make the Study of Science "Cool" with SSSNOW (p. 74)
2:00–3:00 PM	I	220/222, Moscone Center	Radiation Storm *vs.* the Magnetic Shield: Superheroes of Magnetism and Space Weather Education (p. 93)
2:00–3:00 PM	G	104, Moscone Center	Our Eye on the Sun: The Latest from SDO (Solar Dynamics Observatory) (p. 86)
2:00–3:00 PM	I	Yerba Buena 11, Marriott	JetStream: An Online School for Weather (p. 93)
2:00–3:00 PM	P–E	Golden Gate 3, Hilton	Compost: The Rot Thing for Our Earth (p. 91)
2:00–3:00 PM	E–M	Continental 7, Hilton	Clear Skies Ahead: Clearing up Confusion on Clouds (p. 91)
2:00–3:00 PM	M	Golden Gate 5, Hilton	Using NOAA and NASA Data to Teach about Weather and Climate (p. 87)
2:00–3:00 PM	M–H	Walnut, Marriott	Rockets: Launching a Cross-Curriculum Program for Your School (p. 93)
2:00–3:00 PM	I	Pacific B, Marriott	NOAA Follow-up Session: Global Climate Change Impacts in the United States (p. 88)
2:00–3:30 PM	7–12	302, Moscone Center	*Earth Science with Vernier* (p. 98)
2:00–3:30 PM	6–8	133, Moscone Center	Middle School Earth Science: Learn Key Concepts Through Hands-On, Probeware-based Activities (p. 96)
2:10–3:30 PM	3–5	309, Moscone Center	21st-Century Explorer (p. 99)
3:00–5:00 PM	5–8	130, Moscone Center	FOSS Planetary Science for Middle School (p. 100)
3:30–4:30 PM	E–M	Continental 7, Hilton	New Horizons: The Little Spacecraft That Could (p. 105)
3:30–4:30 PM	M–H	Nob Hill D, Marriott	Project SPECTRA! (p. 106)
3:30–4:30 PM	M–H/I	Golden Gate B, Marriott	Bring the "Magic of Hubble" into Your Classroom (p. 101)
3:30–4:30 PM	M	Golden Gate 5, Hilton	ITEAMS (Innovative Technology-Enabled Astronomy for Middle Schools) (p. 100)
3:30–4:30 PM	Null	Golden Gate 3, Hilton	Stellar Bar Codes (p. 105)
3:30–4:30 PM	M–H	Walnut, Marriott	Celestial Navigation for the Novice (p. 107)
5:00–6:00 PM	G	Continental 9, Hilton	NSTA Press Session: Using Notebooks with Earth Science Success! (p. 114)
5:00–6:00 PM	H	Yerba Buena 11, Marriott	Subduction Zone Conditions (p. 118)
5:00–6:00 PM	M–H	228/230, Moscone Center	Helping Students Develop Scientific Explanations Based On Empirical Evidence and Scientific Reasoning (p. 119)
5:00–6:00 PM	M–C	Nob Hill C, Marriott	Hurricanes: Science and Society (p. 118)
5:00–6:00 PM	H–C	Golden Gate 5, Hilton	Teaching Case Studies in Earthquake Seismology (p. 119)
5:00–6:00 PM	E	Continental 3, Hilton	Wings, Strings, and Flying Things (p. 117)
5:00–6:00 PM	M–C	Nob Hill D, Marriott	A Space Weather Monitor in Your Classroom (p. 118)
5:00–6:00 PM	Null	Continental 7, Hilton	Everyday Water Science: From Classroom to Home (p. 117)

Environmental Science

8:00–9:00 AM	M–H	Union Square 1/2, Hilton	ASTE Session: Link Middle and High School Students to Ecology with Digital Media About Published Scientific Research (p. 18)
8:00–9:00 AM	M	Golden Gate 4, Hilton	Educating Students for a Sustainable World (p. 24)
8:00–9:00 AM	E	Golden Gate 6, Hilton	Structured Exploration of the Outdoors (p. 24)
8:00–9:00 AM	G	Yerba Buena 12/13, Marr.	Applying the 3 Es: Explore, Engage, and Explain (p. 26)
8:00–9:00 AM	G	113, Moscone Center	NSTA Avenue Session: Siemens We Can Change the World Challenge: 21st-Century Tools for Project-Based Learning (p. 21)
8:00–9:00 AM	G	Golden Gate C2, Marriott	SYM-2 Follow-up Session: Climate Change Research: What We Have Learned Over the Past 20 Years (p. 20)
9:00–10:00 AM	G	Yerba Buena 9/4, Marriott	Informal Science Day Session: Antarctica's Climate Secrets (p. 37)
9:00–10:00 AM	G	Yerba Buena 9/2, Marriott	Informal Science Day Session: Address Climate Change with Hands-On Activities! (p. 36)
9:30–10:30 AM	G	Golden Gate C2, Marriott	SYM-2 Follow-up Session: Climate Change Education Resources Help You Bring Climate Change Education Home to Your Students (p. 41)
9:30–10:30 AM	M–H/I	Yerba Buena 12/13, Marr.	The Little Things That Run the World: Soil Ecology in the Classroom (p. 44)
9:30–10:30 AM	M–H	Sierra I, Marriott	How Muddy Is the Muddy River? (p. 41)

9:30–10:30 AM	C	Union Square 17/18, Hilt.	SCST Session: The Art and Science of Sound: Mapping Biodiversity Through Bird Song and Landscapes (p. 40)
9:30–10:30 AM	M–H	Sierra I, Marriott	Drinking Water? Convincing Kids That It Matters (p. 41)
9:30–10:30 AM	E–M	Golden Gate 4, Hilton	Designing the City (p. 43)
10:00–11:00 AM	G	Yerba Buena 9/4, Marr.	Informal Science Day Session: Girls Energy Conservation Corps (GECCo). What Impact Can Girl Scouts Make on Climate Change? (p. 48)
10:00–11:00 AM	G	Yerba Buena 9/3, Marriott	Informal Science Day Session: Using the Internet for Up-to-the-Hour Atmospheric Teaching (p. 48)
11:00 AM–12 Noon	G	Yerba Buena 9/2, Marriott	Informal Science Day Session: Science Museums and Teacher Professional Development: A Unique Program Integrating Science and Sustainability (p. 58)
11:00 AM–12 Noon	G	Golden Gate C2, Marriott	SYM-2 Follow-up Session: How EPA Communicates with the Public on the Climate Change Issue (p. 56)
11:00 AM–12 Noon	E	Golden Gate 7, Hilton	Noticing Nature Notebooks (p. 54)
11:00 AM–12 Noon	EN	Continental 3, Hilton	EcoSTARS: A Collaboration Between K–12 and Higher Education (p. 54)
11:00 AM–12 Noon	M–H/S	Yerba Buena 12/13, Marr.	STEM, Alternative Energy, and Urban Middle School Learners (p. 62)
11:00 AM–12 Noon	P–E	Golden Gate 6, Hilton	The Gardening Cure for Nature Deficit Disorder (p. 60)
12 Noon–1:30 PM	9–12	133, Moscone Center	Tough Topics in Earth Science: Greenhouse Gases (p. 66)
12:30–1:30 PM	P	Golden Gate 6, Hilton	Sowing the Seeds of Wonder (p. 79)
12:30–1:30 PM	M–H	Sierra I, Marriott	Inspiring Inquiry Through Field Science Investigations (p. 76)
12:30–1:30 PM	E–M	Golden Gate 4, Hilton	Polar Fun Share-a-Thon (p. 79)
12:30–1:30 PM	I	Yerba Buena 12/13, Marr.	Slick Ways to Teach Students About Oil (p. 81)
2:00–3:00 PM	E	Yerba Buena 8/1, Marr.	Teacher Researcher Day Session: Schoolyard Notebooks Go Public Across Grade Levels (p. 89)
2:00–3:00 PM	G	Sierra I, Marriott	Innovations in Green Design (p. 89)
2:00–3:00 PM	M–H	Yerba Buena 12/13, Marr.	Using Scientific Argumentation to Foster Science Learning in the Classroom! (p. 93)
2:00–3:00 PM	E–M	Golden Gate 4, Hilton	Cotton with a Twist (p. 91)
2:00–3:30 PM	9–12	121, Moscone Center	Need "Energy" in Your Environmental Classes? Learn About Carolina's New Inquiries in Science® (p. 96)
3:30–4:30 PM	E–H	Sierra I, Marriott	Merging Local Resources and Cutting-Edge Technology (p. 102)
3:30–4:30 PM	E–M	262, Moscone Center	NSTA Avenue Session: Project-Based Learning Through Disney's Planet Challenge (p. 105)
3:30–4:30 PM	M–H	Yerba Buena 12/13, Marr.	Climate Change: Science, Culture, and Story (p. 107)
3:30–4:30 PM	M	Golden Gate 4, Hilton	EarthKAM: Looking at Our Earth from Space (p. 105)
3:30–4:30 PM	E	Golden Gate 6, Hilton	Sharing a Small World: Activities on People, Resources, and the Environment (p. 106)
4:00–5:30 PM	9–12	133, Moscone Center	Renewable Energy Exploration: Solar and Wind Power (p. 112)
4:00–5:30 PM	7–12	270/272, Moscone Center	Take Me to the River: Modeling Wetlands, Floodplains, and Risk Assessment (p. 112)
4:00–5:30 PM	6–12	300, Moscone Center	Stream Assessment: An Active, Integrated Approach to Science Learning (p. 113)
5:00–6:00 PM	E–M	Union Square 23/24, Hilt.	The Outdoor Class Study Area—An Integrated Learning Experience (p. 117)
5:00–6:00 PM	E–M	Golden Gate 4, Hilton	Teaching Children About Scientific Inquiry, Geology, and Evolutionary Concepts by Investigating Real Fossils (p. 117)

Integrated/General

7:00–8:30 AM	S	122, Moscone Center	Next Steps for Science: Science Supervisor Breakfast and Forum (p. 16)
8:00–9:00 AM	S	232/234, Moscone Center	ISTE: Online Interactives in the Science Classroom (p. 22)
8:00–9:00 AM	G	Yerba Buena 10, Marriott	ELL Pathway Session: Science Notebooks for English Language Learners (p. 21)
8:00–9:00 AM	E–M	Continental 2, Hilton	Building Teacher Leadership Through a Science and Literacy Project (p. 17)
8:00–9:00 AM	9–12	110, Moscone Center	Enhance Student Understanding and Analysis of Real-World Data with the TI-Nspire™ Solution and Vernier Sensors and Probes (p. 27)
8:00–9:00 AM	G	Union Square 15/16, Hilt.	Partners in Innovation: Museums and Schools Unite (p. 24)
8:00–9:00 AM	I	Willow, Marriott	NOAA's Data Education Project: Integrating Data to Support Increased Understanding About Ocean and Coastal Systems (p. 21)
8:00–9:00 AM	M–H/I	258/260, Moscone Center	More Lessons from the Teen Parent Academy: Alternative School Strategies (p. 22)
8:00–9:00 AM	H–C	Union Square 17/18, Hilt.	SCST Session: Transforming Laboratory Experiments Using Sensor Technology (p. 20)

8:00–9:00 AM	C	Union Square 17/18, Hilt.	SCST Session: Science Outcomes Assessment Project (p. 20)
8:00–9:00 AM	G	Union Square 21, Hilton	NSELA Session: Tools and Ideas for Leaders (p. 20)
8:00–9:00 AM	G	208/210, Moscone Center	U.S.-Russia Teacher Professional Development (USRTPD): Fostering Teacher Leaders (p. 21)
8:00–9:00 AM	M–C	250, Moscone Center	Using Probeware for Data Acquisition and Analysis (p. 22)
8:00–9:00 AM	ES	Golden Gate 3, Hilton	Science Enrichment: The "Wow" Factor! (p. 24)
8:00–9:00 AM	E–M	Union Square 3/4, Hilton	The Reflective Assessment Technique: Fifteen Minutes to Improved Instruction (p. 18)
8:00–9:00 AM	M–H	Golden Gate B, Marriott	Problem-based Learning: The Case of the Coughing Construction Worker (p. 20)
8:00–9:00 AM	P–E	228/230, Moscone Center	Inquiry with Young Scientists: Helping Children to Investigate Their World (p. 22)
8:00–9:00 AM	G	200, Moscone Center	Inquiry Assessment: We Don't Need No Stinkin' Assessments! (p. 21)
8:00–9:00 AM	G	212, Moscone Center	Lasers, Craters, and Taters (p. 26)
8:00–9:00 AM	S	Continental 3, Hilton	Building a Bridge: Engineering with ELLs (p. 18)
8:00–9:00 AM	G	Union Square 5/6, Hilton	CESI Session: Inquiring Minds Want to Know (p. 24)
8:00–9:00 AM	M–H	252/254, Moscone Center	Have Your Students Reading Their Textbooks and Looking Forward to It (p. 22)
8:00–9:00 AM	E–H	208/210, Moscone Center	Science Resource Hunt in the U.S. by an Australian Churchilll Fellow (p. 21)
8:00–9:00 AM	E–H	224/226, Moscone Center	Dissecting Word Problems (p. 22)
8:00–9:00 AM	E–M	Union Square 23/24, Hilt.	Interpreting Visual Representations in Science (p. 24)
8:00–9:00 AM	H	111, Moscone Center	Clean Up or Pay Up! (p. 26)
8:00–9:00 AM	G	Nob Hill D, Marriott	Building Your Learning Community with NASA's Education Specialists (p. 24)
8:00–9:00 AM	Null	Union Square 14, Hilton	Engineering Is…Developing Competent, Confident, Comfortable STEM Teachers (p. 18)
8:00–9:00 AM	G	112, Moscone Center	Bringing Universal Design for Learning into Your Classroom (p. 26)
8:00–9:00 AM	G	Golden Gate 8, Hilton	NSTA Press Session: This Is Not a Tech-Talk: A Discussion on 21st-Century Science Education (p. 18)
8:00–9:00 AM	G	262, Moscone Center	Enhancing Scientific Literacy Through Humor in the Classroom (p. 22)
8:00–9:15 AM	7–12	124, Moscone Center	Inquiry Investigations™ Biotechnology Activities with E-Gels® (p. 28)
8:00–9:15 AM	2–7	123, Moscone Center	Put Some Spark into Science Investigations (p. 28)
8:00–9:30 AM	9–C	302, Moscone Center	New! Advanced Physics with Vernier (p. 32)
8:00–9:30 AM	K–8	206, Moscone Center	3M Young Scientist Challenge/Science of Everyday Life (p. 30)
8:00–10:00 AM	G	Yerba Buena 1, Marriott	TERC Pathway Session: Using Computer Tools to Visualize and Analyze Data (p. 33)
8:00–10:00 AM	M–H	Yerba Buena 2, Marriott	BSCS Pathway Session: Identifying and Using Strategies to Help Your Students Make Sense of Concepts in Science (p. 34)
8:00–10:00 AM	E	Yerba Buena 3, Marriott	EDC Pathway Session: Writing in Science Using Firsthand Data (p. 34)
8:00–10:00 AM	G	Yosemite C, Hilton	Professional Development Providers Boot Camp: The Basics (p. 33)
8:00–11:00 AM	G	Yerba Buena 5, Marriott	LHS and WestEd Pathway Session: Assessment-centered Teaching: A Reflective Practice (p. 34)
8:30–9:30 AM	G	Yerba Buena 8, Marriott	Teacher Researcher Day Session: Poster Session for Teachers and Teacher Educators Inquiring into Science Learning and Teaching (p. 36)
8:30–11:00 AM	5–8	130, Moscone Center	Middle School Science Notebooks to Assess Learning with FOSS (For Experienced Users) (p. 36)
9:00–10:00 AM	G	Yerba Buena 9/3, Marriott	Informal Science Day Session: The SciGirls Seven: Strategies to Engage Girls in STEM (p. 36)
9:30–10:00 AM	G	200, Moscone Center	Scaffolding Inquiry for All Learners (p. 38)
9:30–10:00 AM	G	113, Moscone Center	NSTA Avenue Session: NSTA Teacher and Principal Awards and Recognitions (p. 38)
9:30–10:30 AM	G	Continental 6, Hilton	Imagine and Invent: Create a Great Future! (p. 39)
9:30–10:30 AM	P–M	Yerba Buena 7, Marriott	SEPA/APAST Share-a-Thon (p. 42)
9:30–10:30 AM	P	Golden Gate 7, Hilton	Mathematically Rich Preschool Environments as the Foundation for Scientific Inquiry (p. 40)
9:30–10:30 AM	M	Union Square 19/20, Hilt.	All Systems Checked! (p. 44)
9:30–10:30 AM	G	Continental 4, Hilton	NMLSTA Session: NMLSTA Share-a-Thon (p. 39)
9:30–10:30 AM	M	Nob Hill D, Marriott	MoonKAM: Exploring Lunar Images (p. 44)
9:30–10:30 AM	I	Union Square 15/16, Hilt.	Reflecting on Practice: Professional Development for Informal Science Educators (p. 43)
9:30–10:30 AM	E	Golden Gate 3, Hilton	The Art of Science Notebook Observations (p. 43)
9:30–10:30 AM	M–H	258/260, Moscone Center	Smart Graphs (p. 43)

9:30–10:30 AM	G	112, Moscone Center	Virtually Scientific: Using Online Asynchronous Discussion Forums in the Classroom (p. 45)
9:30–10:30 AM	M–H	252/254, Moscone Center	Learning Science Through Exploration: A Practice in Taiwan (p. 43)
9:30–10:30 AM	E–M	228/230, Moscone Center	Creating a Community of Science Learners (p. 46)
9:30–10:30 AM	M–H	224/226, Moscone Center	Applying Algebra to Pendulums: Language Acquisition Using Manipulatives (p. 46)
9:30–10:30 AM	P–E	Golden Gate 6, Hilton	Starting Them Early: Science Learning in the PreK and Early Elementary Classroom (p. 43)
9:30–10:30 AM	G	Union Square 14, Hilton	Authors Needed! Publish Your Work in an NSTA Journal (p. 40)
9:30–10:30 AM	E	Union Square 5/6, Hilton	CESI Session: Environmental Education at Your Fingertips (p. 43)
9:30–10:30 AM	G	Union Square 21, Hilton	NSELA Session: NSELA Working Groups—Network with Science Education Leaders (p. 40)
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9:30–10:30 AM	E–M	Union Square 23/24, Hilt.	Practical Applications: Differentiation Strategies for Science (p. 44)
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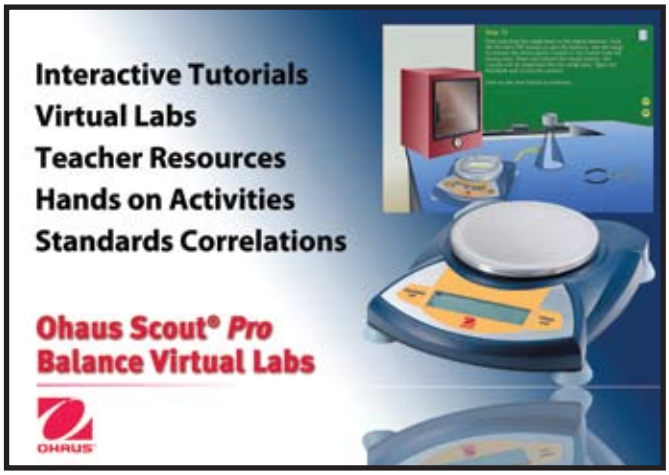

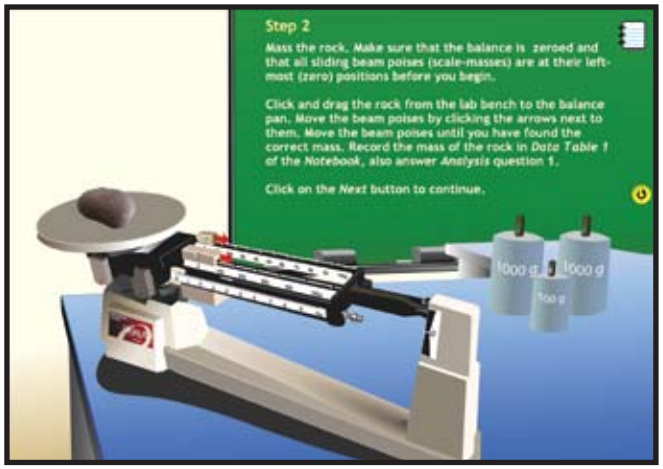

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