caise | center for advancement of informal science education

2016 AISL PI Meeting
PROGRAM GUIDE

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

NSF

OFFICE OF THE
ASSISTANT DIRECTOR
FOR EDUCATION AND
HUMAN RESOURCES

February 29, 2016

Welcome to the 2016 Advancing Informal STEM Learning (AISL) Program Principal Investigators (PI) Meeting.

This biennial gathering brings together practitioners, researchers, and evaluators actively working to improve learning in informal environments. Representing a wide range of organizations, you are a group of highly creative and dedicated professionals in the fields of education research, development, design, communication and evaluation. You represent science centers and museums; zoos and aquaria, botanical gardens, and nature centers; universities; libraries; youth, community, and after-school programs; technology, digital media, and gaming organizations; and broadcast media and science communications. Some of you also have active science and engineering research careers. In addition, colleagues representing other federal and private funding agencies are participating. As with past AISL PI Meetings, we trust that your activities over the next few days will continue to foster a stronger sense of identity and a more cohesive community to advance shared knowledge-building, practice, and capacity. Ultimately, our shared goal is to have an impact on STEM engagement and learning.

The National Science Foundation (NSF) Directorate for Education and Human Resources (EHR) continues to focus attention on three major areas of impact of our investments: learning and learning environments, broadening participation, and workforce development. Your meeting agenda attends to these three strategic areas. We are especially grateful for the organizing role that the Center for Advancement of Informal Science Education (CAISE) played this past year in NSF's Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science (INCLUDES) initiative on broadening participation. We are pleased that over the past two years—as a result of other CAISE initiatives and now at this PI Meeting—there is a lively dialogue around the need to forge productive research and practice partnerships in informal STEM education and science communication to share what we are learning, and to leverage each other's strengths, innovations, and collaborative networks for greater collective impact.

Special thanks for planning and hosting the PI Meeting go to Project Director Jamie Bell and the CAISE team, as well as the many others who have contributed, including Julie Johnson, NSF AISL Program Lead; Al DeSena, cognizant NSF Program Officer for CAISE; and all of the AISL Program staff and program officers in the Division of Research on Learning in Formal and Informal Settings (DRL).

I wish you the best for a productive meeting.

Sincerely,

Joan Ferrini-Mundy

Joan Ferrini-Mundy
Assistant Director

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About CAISE

The Center for Advancement of Informal Science Education (CAISE) works in cooperation with the U.S. National Science Foundation (NSF) Advancing Informal STEM Learning (AISL) program to strengthen and advance the field of professional informal STEM education (ISE) by providing resources, infrastructure, and connectivity for project leaders, researchers, practitioners, and evaluators, as well as natural, physical, and social scientists.

CAISE's roles are to **characterize** what is current in the ISE field with regard to learning content, context, and approach; **connect** and **convene** professionals from across different field sectors on important topics and issues; and to **communicate** to the broader informal STEM learning community what we are observing and learning. The sectors that we serve and support include those working in: media (TV, radio, and film); science centers and museums; zoos and aquaria; botanical gardens and nature centers; science festivals and events; cyberlearning and gaming; youth, community, and out-of-school-time programs; and in a variety of engagement activities conducted by scientists and their education and outreach staffs.

Established in 2007 with support from NSF, CAISE is a partnership between core staff at the Association of Science-Technology Centers (ASTC) in Washington, D.C. and co-principal investigators at informal science and academic institutions across the country. ASTC is an international membership organization of science centers and museums dedicated to public engagement with science among increasingly diverse audiences.

CAISE manages *InformalScience.org*, a central portal to project, research, and evaluation resources designed to support and connect the informal STEM learning community. Through *InformalScience.org*, CAISE strives to support knowledge-sharing, collaboration, and the dissemination of innovation among diverse professionals in the field. InformalScience.org is a searchable repository that provides users with free access to thousands of project descriptions, evaluation reports and instruments, and research and reference materials. The site offers a forum function to encourage dialogue and documentation of processes, and the site's member directory provides a valuable resource for networking and communication.

The 2016 NSF AISL PI Meeting is the fifth biennial Principal Investigator (PI) Meeting or Summit that CAISE has convened. While each meeting has been unique, they have all provided a time for the field to come together and discuss current topics and trends, share successes and challenges, and explore new collaborations. For documentation of past PI Meetings, visit *InformalScience.org/about-caise/pi-meetings*.

CAISE Staff and Co-Principal Investigators

Jamie Bell, PI and Project Director
Patricia Montaño, Program Manager
Grace Troxel, Digital Librarian
Jared Nielsen, Online Producer

Kevin Crowley, CAISE Co-PI,
University of Pittsburgh Center for Learning in Out of School Environments

**Kirsten Ellenbogen,** CAISE Co-PI,
Great Lakes Science Center

John Falk, CAISE Co-PI,
Oregon State University Center for Research on Lifelong STEM Learning

Sue Ellen McCann, CAISE Co-PI,
KQED Public Media

CAISE Advisors

Dr. Nalini Nadkarni, University of Utah
Barry Van Deman, North Carolina Museum of Life and Science
Anthony "Bud" Rock, Association of Science-Technology Centers

RESEARCH
Literature
Reports
Proceedings

PROJECTS
Plan
Develop
Propose

EVALUATION
Front End
Formative
Summative
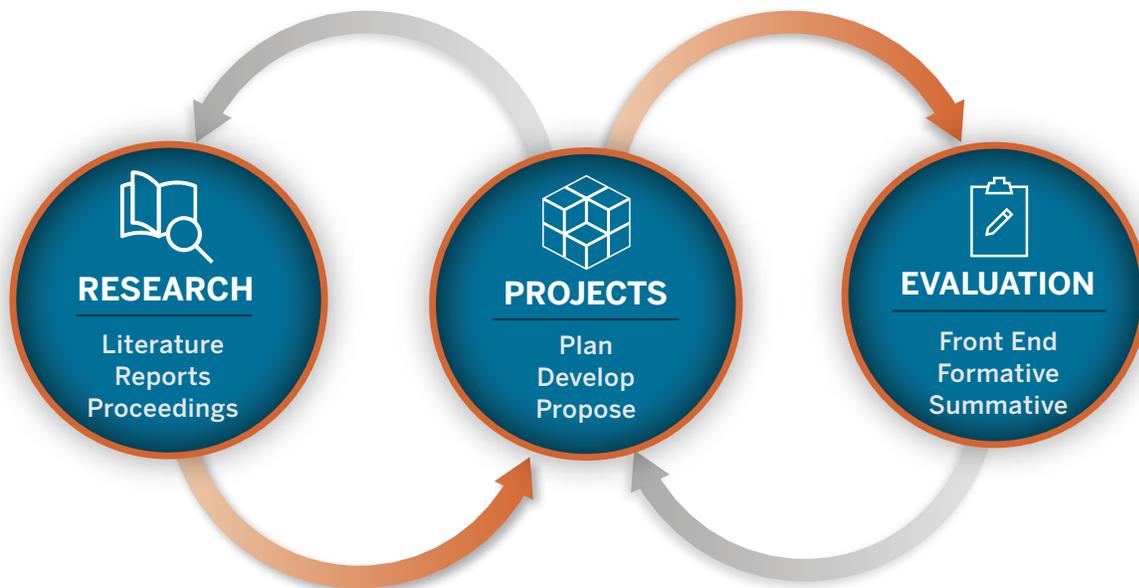
The National Science Foundation
Advancing Informal STEM Learning (AISL) Program
Center for Advancement of Informal Science Education
February 29, 2016 – March 2, 2016
Bethesda North Marriott Hotel & Conference Center

Program Agenda

Day 1: Monday February 29, 2016

11 a.m. – 5 p.m.	Registration (Grand Foyer)
11 a.m. – 12:30 p.m.	Poster Set-up (Salons H-F)
12:30 p.m. – 2 p.m.	Technical Assistance I, Grant Management (Salon E)
2:30 p.m. – 4 p.m.	Technical Assistance II, Current NSF Opportunities Related to Informal STEM Learning (Salon E)
4:30 p.m. – 6 p.m.	Technical Assistance III, Evaluation in Informal STEM Education: Ask An Evaluator (Salon E)
6 p.m. – 7:30 p.m.	Welcome Reception (Grand Foyer)

Day 2: Tuesday March 1, 2016

7:30 a.m. – 12 p.m.	Registration (Grand Foyer)
7:30 a.m. – 9 a.m.	Poster Set-up (Salons H-F)
8 a.m. – 9:15 a.m.	Breakfast (Salon E)
9 a.m. – 9:15 a.m.	Welcome (Salon E)
9:15 a.m. – 10 a.m.	Keynote Presentation (Salon E)
	Jim Lewis, Deputy Assistant Director, Education and Human Resources (EHR), National Science Foundation
10 a.m. – 10:15 a.m.	Words from the Center for Advancement of Informal Science Education (Salon E)
10:15 a.m. – 10:30 a.m.	Transition
10:30 a.m. – 12 p.m.	Morning Concurrent Sessions (Lower Level Meeting Rooms)

- Media and Technology in the Learning Ecosystem (Linden Oak)
- Cyberlearning & Computer Science (White Flint Amphitheater)
- The Research Behind How We Measure Learning (Brookside A)
- Connecting Research and Practice: How to Create a More Equitable Relationship (Brookside B)
- Public Participation in STEM Research: Citizen Science (Glen Echo)
- Documenting Impact Over the Long-Term and Across the Ecosystem (Forest Glen)
- Strategies for Sharing Project Resources, Findings, and Professional Development through Networks and Resource Centers (Timberlawn)
- Broadening Participation: The NSF INCLUDES Initiative and Implications and Directions for Informal STEM Education (Oakley)

12 p.m. – 1:30 p.m.	Working Lunch with NSF AISL Program Officers (Salon E)
12 p.m. – 4:30 p.m.	Open Space Session Nominations (Salons F-H)
1:30 p.m. – 1:45 p.m.	Transition
1:45 p.m. – 3:15 p.m.	Afternoon Concurrent Sessions (Lower Level Meeting Rooms)

- Media and Technology in the Learning Ecosystem (Linden Oak)
- Cyberlearning & Computer Science (White Flint Amphitheater)
- The Research Behind How We Measure Learning (Brookside A)
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3:15 p.m. – 3:30 p.m.	Transition
3:30 p.m. – 3:45 p.m.	Announcements (Salons E-H)
3:45 p.m. – 4:45 p.m.	Poster Session I (Salons F-H)
4:45 p.m. – 5:45 p.m.	Poster Session II (Salons F-H)
4:30 p.m. – 6 p.m.	Open Space Session Voting (Salons F-H)
5:45 p.m. – 7 p.m.	Reception (Salons F-H)
7 p.m. – 8 p.m.	Poster Breakdown (Salons F-H)

Day 3: Wednesday March 2, 2016

8 a.m. – 9 a.m.	Breakfast with representatives of Other Federal Agencies (Salon E)
9 a.m. – 9:30 a.m.	Welcome and Open Space Session Announcements (Salon E)
9:30 a.m. – 10:45 a.m.	A Conversation About Media & Science Communication (Salon E)
	with Panelists Sue Ellen McCann (KQED Executive in Charge, Science), Miles O'Brien (Science Correspondent, PBS NewsHour), Flora Lichtman (Co-Director of "Animated Life" and Host of The Adaptors podcast), and John Besley (Associate Professor, College of Communication Arts and Sciences, Michigan State University)
10:45 a.m. – 11 a.m.	Transition
11 a.m. – 12:30 p.m.	Update on the Online Project Monitoring System (OPMS) (Timberlawn)
	Gary Silverstein, Associate Director, Westat
11 a.m. – 12:30 p.m.	Open Space Sessions (Lower Level Meeting Rooms)
	Topics to be determined by attendees on Tuesday
12:30 p.m. – 1:45 p.m.	Working Lunch with NSF AISL Program Officers (Salon E)
1:45 p.m. – 2:45 p.m.	Open Space Sessions Report Out (Salon E)
2:45 p.m. – 3:30 p.m.	Closing Remarks & Thank You (Salon E)

Hotel Map

MAIN LEVEL
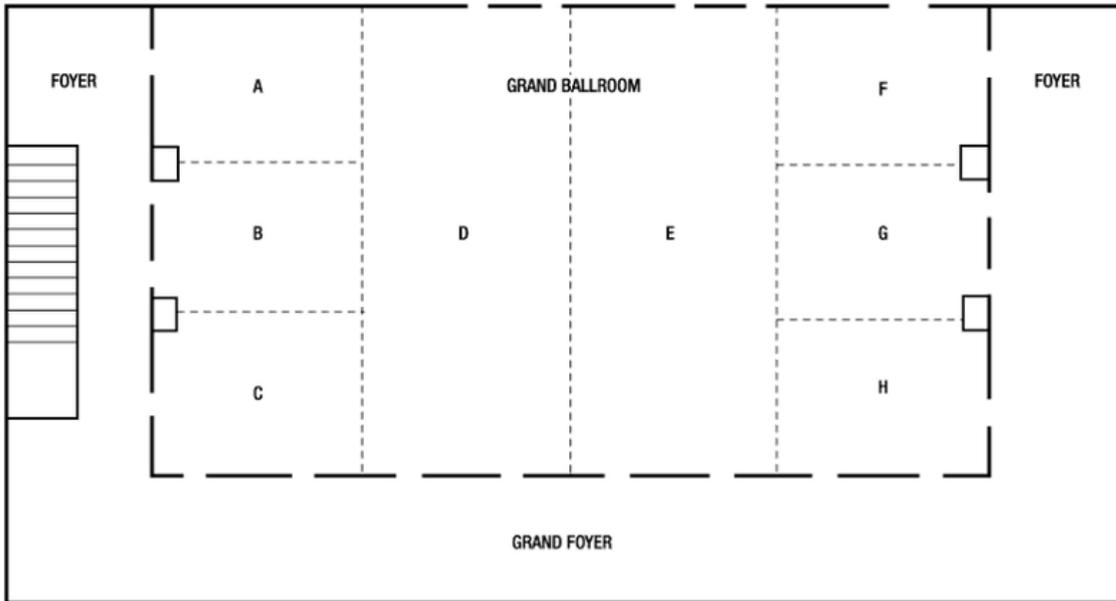
LOWER LEVEL

Technical Assistance Sessions

Grant Management

Come hear from representatives from NSF's Division of Grants and Agreements (DGA). The DGA is responsible for the award of NSF grants and agreements recommended for support by NSF program offices. From pre-award through closeout, DGA conducts a variety of business, financial, and award administrative reviews to ensure compliance with award terms and conditions, NSF policies and procedures, and Federal rules and regulations.

Session Leaders: L. Rashawn Farrior & Daniel P. McEnrue, NSF Division of Grants and Agreements

Evaluation in Informal STEM Education: Ask An Evaluator

Ask your evaluation questions in this participatory session on evaluating informal STEM learning projects. A panel of evaluators experienced in a variety of informal STEM education settings and environments will reflect on the best and worst of their experiences to answer common - and not so common - questions about evaluation in our field. Expected topics include writing project outcomes, measuring the impact of brief experiences, differences between research and evaluation, getting IRB approval, and new approaches to measurement.

Session Leader: Kirsten Ellenbogen, CAISE coPrincipal Investigator, President & CEO Great Lakes Science Center

Current NSF Opportunities Related to Informal STEM Learning

NSF AISL Program Officers will talk in detail about current NSF funding opportunities, including the NSF Advancing Informal STEM Learning (AISL) solicitation and agency-wide funding mechanisms. Part of the session will be a helpful discussion on interpreting the NSF AISL solicitation. This will be an opportunity for questions and in-depth conversations between NSF Program Officers and Principal Investigators.

Session Leaders: NSF AISL Program Officers

Descriptions of Concurrent Sessions

The Concurrent Session topics emerged from a pre-meeting survey of AISL-funded Principal Investigators (PIs); discussions with PIs and others who have participated in CAISE convenings; and input from CAISE staff, CAISE co-PIs, and NSF Program Officers. These sessions are intended to stimulate discussions about cross-sector topics and issues that can continue beyond the meeting and generate new ideas for future projects and collaborations.

Media and Technology in the Learning Ecosystem

Linden Oak Meeting Room

What is the purpose of media in the Learning Ecosystem? How does it serve as a connective tissue that links people with the world around them? How does media support use of STEM content to create a better world? Building on insights gleaned from the 2014 meeting, this program will attempt to think about learning across media platforms and funded projects to explore what collective insights may be emerging in the field. We seek to explore what we can learn when we put projects together with the purpose of advancing practice.

Leaders: *Lisa Samford, Executive Director, Jackson Hole Film Festival, John Fraser, President & CEO New Knowledge Organization Ltd.*

Cyberlearning & Computer Science

White Flint Amphitheater

Digital technologies—from computer games to social media to mobile phones—play an integral role in the lives of young people. Leveraging that interest, NSF has provided funding for informal educators to develop projects that encourage youth to become creators rather than just consumers of digital media, provide opportunities for young people to engage in scientific inquiry using sophisticated tools and resources, and establish more authentic methods for documenting and measuring program impact. In this session, we will discuss key questions and issues for practitioners, researchers and evaluators involved in cyberlearning and computer science in informal settings.

Leaders: *Wendy Martin, Research Scientist, CIRCL Resource Center, Education Development Center, Kea Anderson Vogt, Education Research, Center for Technology in Learning, SRI International, Paul Phamduy, New York University, Tandon School of Engineering*

The Research Behind How We Measure Learning

Brookside A Meeting Room

How do we measure learning in informal settings? The 2009 volume *Learning Science in Informal Settings* officially opened our field's horizons for how we view learning. More than knowledge, or skill acquisition, learning includes aspects of motivation, interest, identity, and more. Since 2009, there has been a new wave of research on measures that reflect such broad and exciting definitions of learning. In this session we will review current work, talk about future directions, and discuss the merits of shareable measures and perhaps even standardized assessments of informal learning.

Leader: *Kevin Crowley, CAISE co-Principal Investigator, Professor of Learning Sciences and Policy, Director UPCLOSE, University of Pittsburgh*

Connecting Research and Practice: How to Create a More Equitable Relationship

Brookside B Meeting Room

How can informal STEM Education (ISE) practices better inform the ways in which learning is conceptualized, studied, and evaluated? In this interactive session, we will identify new models for the relationship between research and practice, including approaches that build on youth voice and practitioner knowledge. Participants will engage in a design task to identify pressing questions, emerging understandings, and the fertile ground for the integration of research and practice.

Leaders: *Bronwyn Bevan, Senior Research Scientist, University of Washington, Angela Calabrese Barton, Professor, Michigan State University*

Public Participation in STEM Research: Citizen Science

Glen Echo Meeting Room

How are, and how can, different citizen science projects advance knowledge in informal learning? AISL principal investigators will reflect on one or more of three questions: What are the unanswered questions about how to achieve citizen science learning outcomes? What is needed to help projects engage culturally diverse audiences? What cross-cutting resources would help individual projects improve their efforts? Attendees will be invited to join a discussion of ideas presented, and will help identify priority needs for coordinated work to advance informal learning and citizen science more generally.

Leaders: *Rick Bonney, Director, Public Engagement in Science, Cornell Lab of Ornithology, Jennifer Shirk, Project Leader, CitizenScience.org, Cornell Lab of Ornithology*

Documenting Impact Over the Long-Term and Across the Ecosystem

Forest Glen Meeting Room

There is an increasing awareness within the education community in general and the ISE community in particular of the need for greater understanding and documentation of the ways educational interventions influence learners beyond the time and space of the immediate experience. That said, collecting data over extended time periods and multiple settings creates unique theoretical, methodological, and logistical challenges. Through brief presentations of selected examples of past and current research, as well as whole-group discussions, this session will explore strategies for investigating the ways ISE experiences affect the public over the long-term and across the learning ecosystem.

Leaders: *John Falk, CAISE co-Principal Investigator, Executive Director Institute for Learning Innovation, Sea Grant Professor of Free-Choice Learning, Oregon State University, Leslie Goodyear, Principal Research Scientist, Education Development Center, Inc. (EDC)*

Strategies for Sharing Project Resources, Findings, and Professional Development through Networks and Resource Centers

Timberlawn Meeting Room

Over the last decade, NSF has made significant investments in networks, resource centers, and infrastructure to advance the field of informal science learning and disseminate the broader impacts of scientific research. What strategies have proven successful for building and sustaining nationwide projects? What models and methods are most effective for broadly distributing educational resources, sharing knowledge, promoting evidence-based practices, and offering professional development? Join us to learn how the infrastructure and findings of networks and resource centers can benefit projects of all types, and consider priorities for future large-scale collaborations.

Leaders: *Catherine McCarthy, Science Museum of Minnesota (NISE Network), Rae Ostman, Arizona State University (NISE Network)*

Broadening Participation: The NSF INCLUDES Initiative and Implications and Directions for Informal STEM Education

Oakley Meeting Room

Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science (INCLUDES) is a multi-year national initiative launched by the National Science Foundation in 2016 to develop and implement scalable solutions to broadening participation in STEM education. A workshop in June 2015 convened thought leaders from across the nation, sectors, and academic disciplines for brainstorming and prioritizing of ideas, strategies, and actions that could be aggressively pursued by this initiative. This session invites presenters from NSF and AISL-funded programs to share innovations, and discuss issues and challenges in fostering inclusion and equity for all in STEM education.

Leaders: *Margaret Glass, Director, Professional Development, Association of Science-Technology Centers, Laura Peticolas, Director and Senior Fellow, University of California, Berkeley*

Process for Open Space Sessions

Open Space sessions allow meeting participants the flexibility to nominate topics of currency and interest in informal STEM learning, and invite others to be a part of the discussion. Some attendees might arrive with topics in mind, and for others topics of interest may be inspired by a technical assistance session, concurrent session, or their interactions with colleagues.

The morning of Tuesday, March 1, 2016, CAISE Project Director Jamie Bell will explain the process of nominating and voting for Open Space sessions. An announcement asking for nominations for sessions will start during lunch on Tuesday, March 1st. Meeting attendees will be able to nominate sessions until the start of the poster session presentations. If you wish to nominate an Open Space session, please proceed to the registration desk, or Open Space session board, to complete a form that will be posted to the voting board. You will be asked for the title of your topic, name, and a description.

Voting for Open Space sessions is a democratic process. During the poster session the meeting organizers will announce the start of voting. Meeting participants will have until the end of the poster session to vote for their preferred topics; participants will be provided with two stickers to use to vote for two separate session topics. The seven most popular session topics, and their locations, will be announced at breakfast on Wednesday, March 2nd.

Tips for nominating and voting in the Open Space session process:

- You may nominate as many Open Space sessions as you like, but you may only vote for two.

- The title of your nominated Open Space topic should clearly state the content area, learning platform or strategy, or audience challenge. For example, "How can the Engineering Design Process be successfully applied to programs that reach primary school-aged children?"

**Tips for participating in an Open Space session:**

- Each Open Space session will be assigned a facilitator. We encourage participants and nominators to prepare provocative questions in order to stimulate the discussion.

- All Open Space sessions will be documented. Each Open Space session is required to name a notetaker. Instructions for recording notes will be provided at the meeting.

- Open Space sessions are truly "open." Feel free to add to the discussions, and to move from one session to another.

- You may choose to break off and form a new session during the Open Space session time—if this occurs, please make sure to document your discussion.

- Participants are encouraged to share their thoughts during a "report out" on the afternoon of March 3rd. After the meeting, participants may share their notes and continue the discussions using the meeting discussion forum found on *InformalScience.org*.

Documenting the 2016 NSF AISL PI Meeting

Notetakers for each technical assistance session, concurrent session, and open-space session ensures the meeting will be well-documented. Notes will be accessible after the meeting on *InformalScience.org*. A discussion forum on *InformalScience.org* that is dedicated to the meeting can be used to gather the thoughts, questions, and experiences of meeting participants.

And, you are always welcome to join the conversation on **Twitter, #AISL2016**.

2016 NSF AISL PI Meeting Online Forum
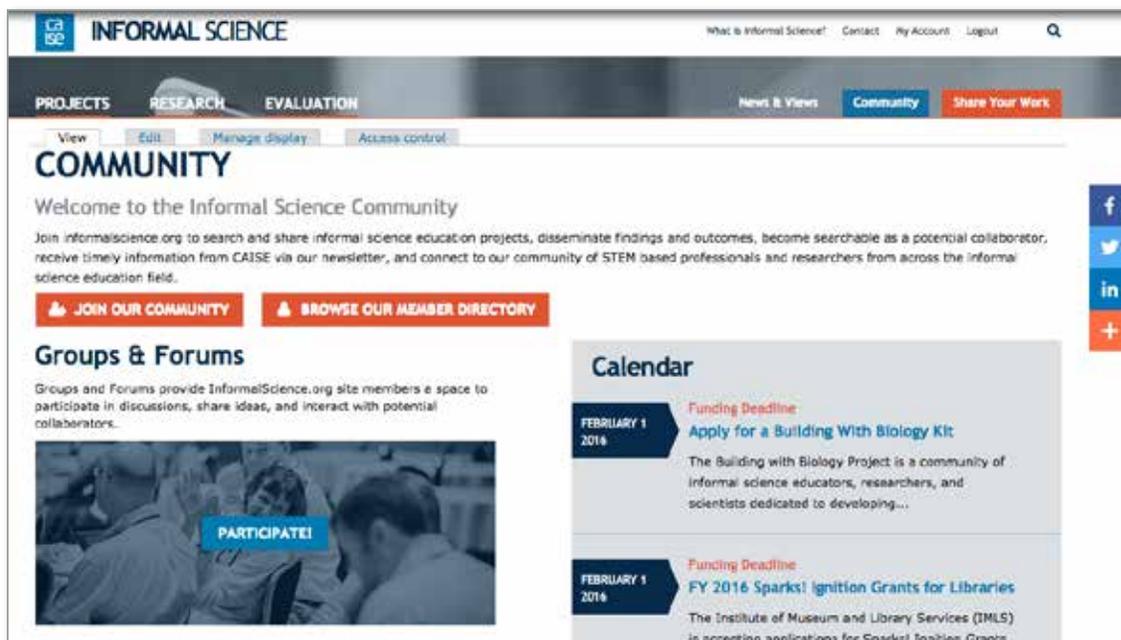
▲ The forum for the meeting, hosted by CAISE, can be found on the Community webpage of *InformalScience.org*. Please email caise@informalscience.org with any questions about how to use the forum.
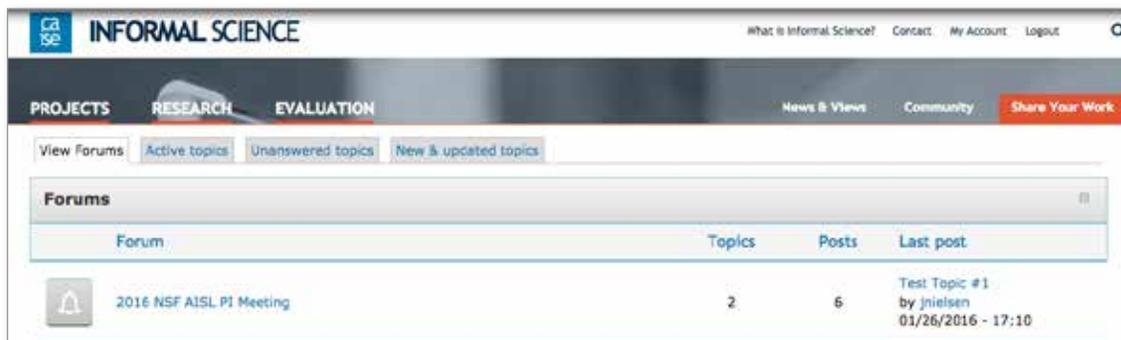
▲ First, login to *InformalScience.org*, then visit the Community page and click "Participate" to be redirected to the Forums webpage. Or, navigate to *http://www.informalscience.org/forum*. Please remember to log in to InformalScience.org with your username and password to participate in the Forum. Click on 2016 NSF AISL PI Meeting to start using the forum.

While the forum will have some initial conversation topics, including for each session, meeting participants are encouraged to contribute their own discussion topics. You can add a topic by clicking "New Topic."
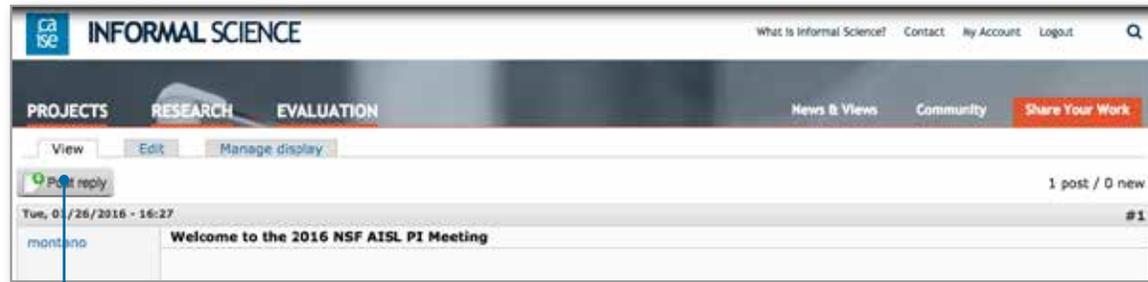
To reply to a topic and add your thoughts, click on a topic that interests you and then click on "Post reply." You can post replies to topic threads throughout the meeting and after the meeting closes.

If you would like to add a new comment to an existing topic, scroll to the bottom of the webpage and click on "Add New Comment."
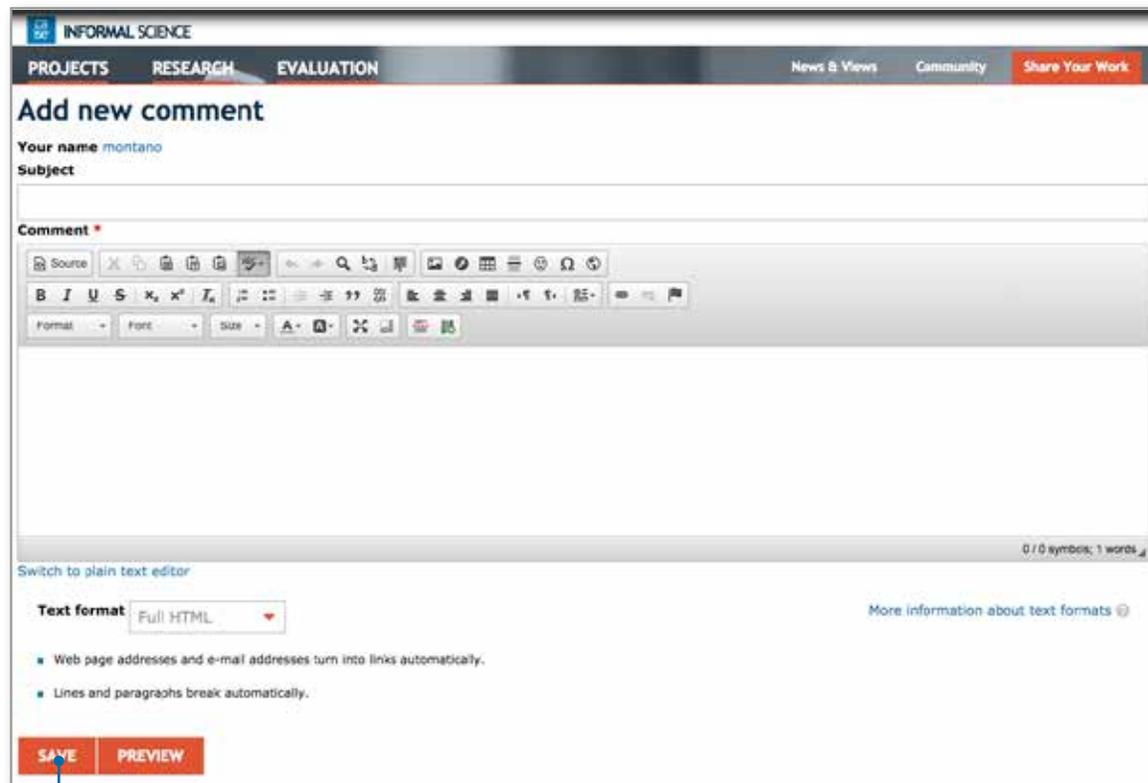
Whenever adding a topic, reply, or a new comment, please be sure to click "Save." You will then receive a confirmation stating, "Your comment has been posted."

Participant List

Visit the InformalScience.org *member directory to contact participants and learn more about their work.*

Eleanor Abrams
Department of Education, University of New Hampshire
Community based science learning: Making classroom learning relevant to students everyday lives

Jennifer Adams
Brooklyn College
Place or Practice: Negotiating teaching identities and the boundary of formal/informal science learning in the classroom

Leslie Allee
Cornell University
The Lost Ladybug Project

Ethan Allen
Pacific Resources for Education & Learning
Water for Life

Sue Allen
Maine Mathematics and Science Alliance

Kea Anderson Vogt
SRI International

Tamara Ball
UCSC
Formulating the Problem: STEM Apprenticeships through Digital Storytelling

Heidi Ballard
University of California-Davis, School of Education
Collaborative Research: Exploring Engagement and Science Identity Through Participation—A Meta-Analysis of Citizen Science Outcomes

Melissa Ballard
Afterschool Alliance

Susan Baron
Missouri Botanical Garden
Informal Community Science Investigators (iCSI)

Cheryl Bauer-Armstrong
University of Wisconsin-Madison Arboretum
Earth Partnership: Indigenous Arts & Sciences

Tony Beck
National Institutes of Health

Rachel Becker-Klein
PEER Associates
Citizen Science Embedded Assessment

Andrea Beesley
IMPAQ International
Improving Math Identity for Underrepresented Populations: After-School Math Plus

Janet Beissinger
University of Illinois at Chicago
CryptoClub: Cryptography and Mathematics, Afterschool and Online

Jamie Bell
Association of Science-Technology Centers
Center for Advancement of Informal Science Education

Larry Bell
Museum of Science
Nanoscale Informal Science Education Network

Marcie Benne
Oregon Museum of Science and Industry
Head Start on Engineering: Supporting Engineering Interest Development in Early Childhood

Marjorie Bequette
Science Museum of Minnesota
Making Connections

Mark Berry
Schoodic Institute at Acadia National Park
Workshop Proposal: Integrating Citizen Science into the STEM Learning Ecosystem

John C. Besley
Michigan State University
Scientists' Views of the Public, Public Engagement Practice, and Public Engagement Goals

Bronwyn Bevan
University of Washington
Research + Practice Collaboratory

Marta Biarnes
Museum of Science
Creating Communities of Learners For Informal Cognitive Science Education

Rick Bonney
Cornell Lab of Ornithology
Toolkit for Evaluating Outcomes of Citizen Science

Carol Boston
University of Maryland
Community-Driven Projects That Adapt Technology for Environmental Learning in Nature Preserves

Judy Brown
Patricia and Phillip Frost Museum of Science
Move2Learn: Engaging Preschool Scientists through Embodiment and Technology

Tyson Brown
National Science Teachers Association
Connected Science Learning: A journal bridging formal and informal science education

David Burghardt
Hofstra University
Wise Guys & Gals—Boys & Girls as WISEngineering STEM Learners

William Burns
National Center for Science and Civic Engagement
SENCER-ISE (Science Education for New Civic Engagements and Responsibilities—Informal Science Education)

Angela Calabrese Barton
Michigan State University
Making 4 Change: Becoming Community Engineering Experts through Makerspaces and Youth Ethnography

Martha Cardona
Art of Science Learning

Diane Carlson
Pacific Science Center
Amazon Adventure

Becky Carroll
Inverness Research
Center for Advancement of Informal Science Education

Darlene Cavalier
SciStarter
SciStarter 2.0: A Dashboard to Drive Research, Participation, and Community-building in Citizen Science

Robert Chen
University of Massachusetts, Boston

Hailey Chenevert
National Center for Science and Civic Engagement

Tara Chklovski
Iridescent
Engaging underserved families in engineering design courses

Tamara Clegg
University of Maryland
ScienceKit for ScienceEverywhere—A Seamless Scientizing Ecosystem for Raising Scientifically-Minded Children

Victoria Coats
Oregon Museum of Science and Industry
The Hidden World of Permafrost

Tsivia Cohen
Chicago Children's Museum
Advancing Early STEM Learning Opportunities Through Tinkering and Reflection

Nicole Colston
Oklahoma State University
Spotty Rain Campaign: Pathways and Partners in Drought Adaptation

Laura Conner
University of Alaska Fairbanks
Colors of Nature: a STEAM approach to science engagement

Sharon Cooper
U.S. Science Support Program, IODP
Pop-Up/Drill Down Vision and Goals

Katharine Covert
National Science Foundation

Kent Crippen
College of Education
FOSSIL—Social Paleontology Through Amateur and Professional Collaboration

Rachel Crowley
Westat

Kevin Crowley
University of Pittsburgh
Center for Advancement of Informal Science Education

Diana Dalbotten
University of Minnesota
Walking in Two Worlds

Toni Dancu
Exploratorium
Exhibit Designs for Girls' Engagement

P Thompson Davis
Bentley University
Broadcast Meteorologists and Climate Change Communication

James Diamond
EDC/Center for Children & Technology
Planning a design-based implementation research agenda to investigate digital badges as transformative assessment in informal science learning

Lynn Dierking
Oregon State University Center for Research on Lifelong STEM Learning

Lisa Doner
Plymouth State University
Three Geoscience Modules to Improve Climate Literacy of Meteorology Students

Sean Duncan
Learning Sciences Program
Planning a design-based implementation research agenda to investigate digital badges as transformative assessment in informal science learning

Johanna Duncan-Poitier
The State University of New York System Administration
SUNY/NYAS STEM Mentoring Program Statewide Scale Up Project

Paul Dusenbery
Space Science Institute
STAR Library Education Network: Phase 2

Elyse Eidman-Aadahl
National Writing Project
Informal Science Learning and Literacy Partnerships: Exploring the Intersections

Kirsten Ellenbogen
Great Lakes Science Center
Center for Advancement of Informal Science Education

John Falk
Oregon State Univesity
Center for Advancement of Informal Science Education

Mark Farley
Hatfield Marine Science Center Visitor Center
Cyberlab: Human Observation Network

Cheri Fancsali
Research Alliance for NYC schools
An impact study of math identity in underrepresented groups

Richard Ferdig
Kent State University
The Use of Mobile Applications for Informal Science Learning in Parks

Barbara Flagg
Multimedia Research
Contribution of SciGirls Multimedia to the Experience of Citizen Science

John Fraser
New Knowledge Organization Ltd.
Experiments in Transmedia: Studying Techniques for Increasing STEM Content Acquisition by Young Adults

Jennifer Frazier
Exploratorium
Living Liquid: Creating Interactive Visualizations of Ocean Datasets

Peter Fristedt
National Endowment for the Humanities

Alice Fu
SK Partners

Veronica Garcia-Luis
Exploratorium
Exhibit Designs for Girls' Engagement

Cecilia Garibay
Garibay Group

Sarah Garlick
Hubbard Brook Research Foundation
Forest Science Dialogues

Elisabeth Gee
Arizona State University
The Role of Story in Computer Science Games for Girls

Darcy Gentleman

Margaret Glass
Association of Science-Technology Centers
An Evidence-based Informal STEM Learning (ISL) Professional Framework

Leslie Goodyear
Education Development Center

Meghan Groome
New York Academy of Sciences
Balancing Scale and Local Innovation

Dean Grosshandler
University of Illinois at Chicago
Supporting a Community's Information Education Needs: Confidence and Empowerment in STEM (SCIENCES) Program

Suzanne Gurton
Astronomical Society of the Pacific
My Sky Tonight: Early Childhood Pathways to Astronomy

Mareca Guthrie
UA Museum of the North
Project STEAM: Integrating Art with Science to Build Science Identities Among Girls

Catherine Haden
Loyola University Chicago
Advancing Early STEM Learning Opportunities Through Tinkering and Reflection

Mary Haggerty
WGBH Educational Foundation
Design Squad Global

Geoff Haines-Stiles
Passport to Knowledge
THE CROWD & THE CLOUD: Citizen Science, Big Data and Mobile Technology

Michelle Hall
Institute for Science Education New Mexico
Teen Science Cafes Make Broader Impacts

Tony Hartshorn
Montana State University
Carbon literacy begins with the conservation of mass, Einstein

Isabel Hawkins
Exploratorium

Deborah Hecht
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Joseph Heimlich
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National Center for Blind Youth in Science

Jesse Heines
University of Massachusetts Lowell
Teaching a Computer to Sing

Amy Hoover
Northeastern University
GrACE: A Procedurally Generated Puzzle Game to Stimulate Mindful and Collaborative Informal Learning to Transform Computer Science Education

Michael Horn
Northwestern University
Blocks and Stickers: Rethinking Computational Literacy for Informal Learning Environments

Theresa Horstman
University of Washington Bothell
Research: Badges for college credit (BCC): Motivating learning in informal science programs through a digital badge systems

Pei-Ling Hsu
University of Texas at El Paso
Transforming Students' Partnership with Scientists Through Cogenerative Dialogues

Richard Hudson
TPT Twin Cities Public Television
Affinity Spaces for Informal Science Learning

Isabel Huff
Through My Window / Springfield Technical Community College
Using Narrative in a Digital Learning Evironment to Engage Children and Teens in Engineering

Lacey Huffling
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American Society for Biochemistry and Molecular Biology

Naomi Hupert
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Family Engagement and STEM: The Be A Scientist Project

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University of California at Santa Cruz
ASCEND: Apprenticeships in Sustainability Science and Engineering Design

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Brian Johnson
Wildlife Conservation Society
Investigating the Long-term Effects of Informal Science Learning at Zoos and Aquariums

M. Gail Jones
NC State University
Master Science Hobbyists: Characteristics, Motivations, Experiences, and Career Trajectories

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Association of Science-Technology Centers

Cheryl Juarez
Frost Science
CHISPA! Children Investigating Science with Parents and Afterschool

Faith Kares
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TPT Twin Cities Public Television
Latina SciGirls: Addressing Barriers to Promote Middle School-Age Hispanic Girls' Positive STEM Identity Development through Media, Outreach and Role Models

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Museum of Science
Living Laboratory Broad Implementation: Yrs 1-4

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Gulf of Maine Research Institute
STEM learning in citizen science

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Museum of Science
Multi-Site Public Engagement with Science—Synthetic Biology: The Building with Biology Project

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Ironbound Films
The Anthropologist

Audrey Kremer
National Geographic Society
National Geographic FieldScope: An Online GIS for Education and Citizen Science

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Science Fairs Under the 'Scope

Flora Lichtman
New York Times Op-Docs Series

Betsy Loring
EcoTarium
City Science: Engaging Audiences in Social Science and Urban Planning Research

Marti Louw
Carnegie Mellon University
Learning to See, Seeing to Learn

April Luehmann
University of Rochester
A Social Design Experiment in Out-of-School Time Science: Learning with Science STARS

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Portal to the Public: Expanding the National Network

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iSWOOP: Interpreters and Scientists Working on Our Parks

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Chicago Zoological Society
SCIENCES-Supporting a Community's Informal Education Needs: Confidence and Empowerment in STEM

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Leslie C. Moore
The Ohio State University
Improving informal science learning experiences for preschool dual language learners

Lauren Moreno
Oregon Museum of Science and Industry
Designing Our World: A Community Envisioning Girls as Engineers

Bradley Morris
Kent State University
Using the SLATE app to map and assess informal science learning across multiple ecologies

Erin Murphy
Afterschool Alliance

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Project Dragonfly, Miami University
Saving Species: Learning for Social & Ecological Change

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The STEM Ambassador Program: scientist engagement with science-inattentive public audiences

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American Institutes for Research
The STEM Interest and Engagement Study

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Informal Mathematics Education

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UCSF SEP
EvalFest: Evaluation Use, Value, and Learning through Festivals of Science and Technology

Miles O'Brien
PBS NewsHour

Rae Ostman
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Transmedia Museum: Increasing Learning and Efficacy about Emerging Technologies through Transmedia Engagement by the Public in Science-in-Society Activities

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COASSTal Communities of Science

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Experiments in Transmedia: Studying Techniques for Increasing STEM Content Acquisition by Young Adults

Marian Pasquale
EDC
What Can We Learn from Middle School Science Fairs about Teaching Science and Engineering Practices?

Scott Pattison
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Head Start on Engineering: Supporting Engineering Interest Development in Early Childhood

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Citizen Science Embedded Assessment

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Native Universe: Indigenous Voice in Science Centers

Paul Phamduy
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BRUCE and ROSA go to Coney Island—interactive robotic fish join the New York Aquarium

Tina Phillips
Cornell Lab of Ornithology
Preliminary Findings from EESIP

Bryan Pijanowski
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Global Soundscapes! The Open Ears, Big Data Project

Wendy Pollock
Independent Consultant
Truth About Trees: Community Stories to Localize Call to Action

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National Optical Astronomy Observatory
Project STEAM: Integrating Art with Science to Build Science Identities Among Girls

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BRUCE and ROSA go to Coney Island - interactive robotic fish join the New York Aquarium

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Community-Driven Projects That Adapt Technology for Environmental Learning in Nature Preserves

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Community to Career

Edward Price
California State University San Marcos
Making STEM Relevant in Underserved Communities

Karen Purcell
Cornell Lab of Ornithology
Examining Contextual Factors Influencing the Implementation of Projects Designed to Improve Cultural Diversity in Informal Science Education Programming

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COSI

Michael Raddick
Johns Hopkins University
An empirically-based model of citizen science motivation

Saul Rockman
Rockman Et Al

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Dartmouth College
Rural Gateways

Diana Rohlman
Environmental Health Sciences Center
Promoting environmental health education in a Native American community through the lens of First Foods

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Cyberlab: Human Observation Network

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Math in the Making: A Convening and Community Discussion

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Natural History Museum of Utah

Travis Ryan
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Indianapolis: City as Living Laboratory; Science Learning for Resilient Cities

Lisa Samford
Jackson Hole Film Festival
Communicating STEM - Applying the Science of Science Communication to Natural History Media Products in Development/Production

Camellia Sanford
Rockman Et Al

Dennis Schatz
Pacific Science Center
An Evidence-based Informal STEM Learning (ISL) Professional Framework

Heather Segale
U.C. Davis Tahoe Environmental Research Center
"Shaping Watersheds" Augmented Reality Sandbox Exhibit

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The Art of Science Learning

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Museum of Science
Multi-Site Public Engagement with Science - Synthetic Biology: The Building with Biology project

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Michele Korf and Associates
CRPA: Looking Back & Ahead

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University of Central Florida

Monica Smith
National Museum of American History

Gregg Solomon
National Science Foundation

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Oregon Public Broadcasting
Hacking Your Mind

Martin Storksdieck
Oregon State University
What does it mean to be a professional in ISE?

LaToya Strong
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Matthew Sturm
University of Alaska Fairbanks-Geophysical Institute
Hot Times in Cold Places: Permafrost and Climate Change

Mallary Swartz
The Fred Rogers Company
Peg + Cat: Developing Preschoolers' Early Math Skills

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University of Virginia
Project EXPLORE - Longitudinal Analysis of Children's Learning Activity Preferences

Edna Tan
University of North Carolina, Greensboro
Making4Change: Becoming community engineering experts through makerspaces and youth ethnography

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Wildlife Conservation Society
Project TRUE. Teens Researching Urban Ecology

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Para La Naturaleza
We challenge you to create: Project models and approaches for citizen science in Puerto Rico

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The STEM Ambassador Program: scientist engagement with science-inattentive public audiences

Kelly Tran
Arizona State University
The Role of Story in Games to Teach Computer Science Concepts to Middle School Girls

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Association of Science-Technology Centers
Center for Advancement of Informal Science Education

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University of Washington Bothell
Colors of Nature: a STEAM approach to science engagement

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Investigating STEM Literacies in Makerspaces

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Peg + Cat: Using Social-Emotional Skills to Engage in Math

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University of Wisconsin-Madison
Early Challenges and Progress in "Understanding and Catalyzing Equity-Oriented Change"

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Peep and the Big Wide World

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From Community to Career—A Longitudinal Study of an Out-of-School Science Program and Youth from Populations Underrepresented in STEM

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EvalFest: Evaluation Use, Value and Learning through Festivals of Science and Technology

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Seeing Scientifically: Scaffolding Observation of Complex Visual Phenomena

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versity (GOLD), Improving Undergraduate
STEM Education: Pathways into Geosci-
ence (IUSE: GEOPATHS), Tribal Colleges
and Universities Program (TCUP)

North Bethesda Neighborhood Guide

Transportation Near the Hotel

The hotel is conveniently located near the White Flint Metro Station where you can take the Red Line train south towards Glenmont to reach the National Zoo near Cleveland Park Metro, or travel to downtown D.C. You can transfer to the Blue, Orange, and Silver Lines at Metro Center for stops that service the White House, National Mall, and various national monuments and memorials. To transfer to the Green and Yellow Metro lines, take the Red line toward Glenmont and transfer at Gallery Place-Chinatown.

Visit *www.wmata.com/rider_tools/tripplanner* for exact times and routes using the Washington Metro system.

Nearby Restaurants & Coffee Shops

The following restaurants and cafes are within walking distance, 0.5 miles or less from the hotel.

City Perch Kitchen & Bar
11830 Grand Park Ave
North Bethesda, MD 20852
(301) 231-2310
American fare & craft cocktails

Del Frisco's Grille
1800 Grand Park Ave
North Bethesda, MD 20852
(301) 881-0308
American chophouse

La Madeleine Country French Cafe
7607 Old Georgetown Rd
Bethesda, MD 20814
(301) 215-9142
French bakery & cafe

Paladar Latin Kitchen & Rum Bar
11333 Woodglen Dr
North Bethesda, MD 20852
(301) 816-1100
Pan-Latin food & rum bar

Seasons 52
11414 Rockville Pike
North Bethesda, MD 20852
(301) 984-5252
American & seasonally-inspired

ShopHouse Southeast Asian Kitchen
11584 Old Georgetown Rd
North Bethesda, MD 20852
(301) 816-6930
Southeast Asian fast casual

Starbucks
11802 Rockville Pike
Rockville, MD 20852
(301) 770-9096
Coffee & tea

Stella Barra Pizzeria
11825 Grand Park Ave
North Bethesda, MD 20852
(301) 770-8609
Artisanal pizza

Summer House Santa Monica
11825 Grand Park Ave
North Bethesda, MD 20852
(301) 881-2381
California fare & wines

Whole Foods Market
11355 Woodglen Dr
Rockville, MD 20852
(301) 984-4880
Grocery store, cafe, cafeteria

Notes

Notes

2014 AISL PI Meeting

Thurgood
Marshall Ballroom

How is Technology Building
New Audiences for ISE?

Thursday, August 21
10:30 AM - 12:00 PM

en Space Session

lday, August 22
15 AM - 11:45 PM

caise