



ISE PI Meeting 2012

Program Guide



About CAISE

The Center for Advancement of Informal Science Education (CAISE) works in collaboration with the National Science Foundation (NSF) Informal Science Education (ISE) Program to strengthen and advance the field of informal science education and its infrastructure by providing resources for NSF principal investigators, ISE professionals, and STEM researchers. CAISE convenes, connects, and disseminates the work of stakeholders across the ISE field—including film and broadcast media, science centers and museums, zoos and aquariums, botanical gardens and nature centers, digital media and gaming, science journalism, and youth, community, and after-school programs.

Founded in 2007 with support from the (NSF), CAISE is a partnership among the Association of Science-Technology Centers (ASTC), Oregon State University (OSU), the University Of Pittsburgh Center for Learning in Out-of-School Environments (UPCLOSE), and the Visitor Studies Association (VSA). Ideum and the Lawrence Hall of Science serve as additional partners in creating CAISE resources, tools, and initiatives. Inverness Research Associates serves as evaluator. CAISE is housed at ASTC's Washington, D.C. offices.

The 2012 ISE Principal Investigator (PI) Meeting builds on the momentum of PI Meetings held in 2008 and 2010 by again convening recently-funded NSF ISE projects to network, receive technical assistance, share knowledge and experiences, and become inspired by leading work in the field.

To learn more about CAISE, visit caise.insci.org.

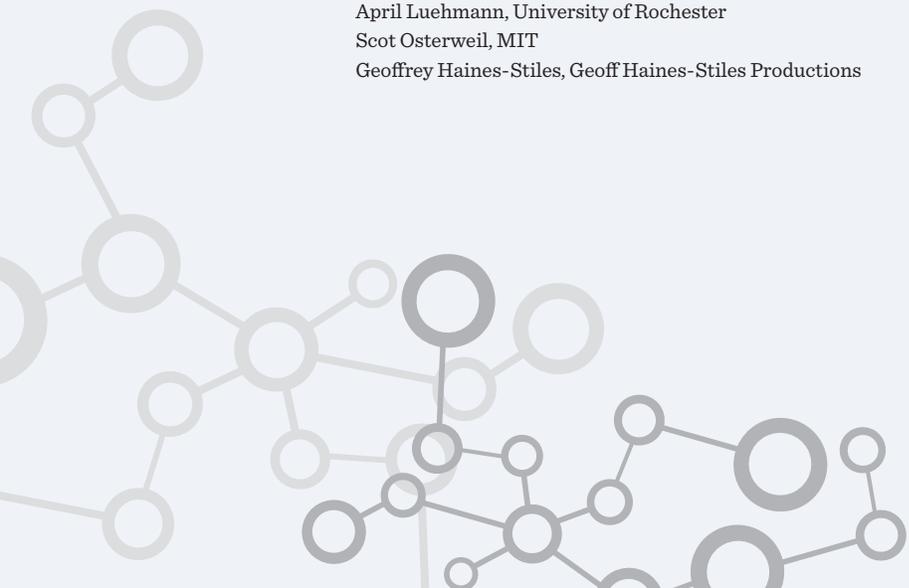
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Directorate for Education and Human Resources

Welcome to the 2012 Informal Science Education Program Principal Investigators Meeting.

Unique to conferences that you may attend, this gathering brings together professionals actively working on improving informal STEM learning from a wide range of organizations and from so many different parts of the field. You represent a set of highly creative and dedicated professionals in broadcast media and film, science centers and museums, zoos and aquariums, botanical gardens and nature centers, libraries, digital media and gaming, youth, community and after-school programs, science communications, and education research and evaluation. Some of you also have active science research careers, and at least one of you operates a major public works facility. In addition, colleagues representing other federal agencies are participating. Our hope is that the PI Meeting will continue to foster, across these diverse domains, a stronger sense of identity and a more cohesive community that maximizes its potential impacts by advancing shared knowledge-building, practice, and capacity.

I am particularly intrigued that this PI Meeting is experimenting with new ways to engage ISE professionals. CAISE and NSF staff responded to input after the 2010 ISE Summit to find ways to position the PI Meeting not as a “one-off event,” but rather as “one stop along a path of community building.” Thus, over the past year or two, many of you have organized and been involved in smaller ISE-funded conferences and workshops focused on a variety of issues and topics of importance to you. A major goal of this PI Meeting is to provide you with an opportunity to continue to broaden and deepen those conversations and possible collaborations around your interests. The CAISE website and other mechanisms are being designed to help you continue those community-building activities after you leave here on March 16. We look forward to your participation and feedback on this approach and how well it serves your needs.

Special thanks for planning and hosting the PI Meeting go to Jamie Bell and the CAISE team, and the many who have contributed, including Al DeSena, cognizant NSF Program Officer for CAISE, Dennis Schatz, the coordinator of the Lifelong Learning Cluster, and all of the Lifelong Learning Cluster staff in our Division of Research on Learning in Formal and Informal Settings. I wish you the best for a great meeting.

Joan Ferrini-Mundy
Assistant Director
Directorate for Education and Human Resources

Dr. Joan Ferrini-Mundy is Assistant Director of the National Science Foundation (NSF) for Education and Human Resources, a position she has held since February 2011. She serves as a member of the NSF senior management team and is involved in strategic planning and leadership for the scientific and education mission of the NSF. Dr. Ferrini-Mundy has served the Foundation in a number of management capacities since 2007. In connection with her agency-wide responsibilities, Dr. Ferrini-Mundy serves as NSF’s science, technology, engineering, and mathematics (STEM) workforce development goal leader for the Office of Management and Budget’s Priority Goal Initiative. From 2007 through January 2010, she was a member of the National Science and Technology Council’s (NSTC) Subcommittee on Education, and currently serves on two task forces of the NSTC Committee on STEM Education. She is currently a member of the Mathematics Expert Group of the Programme for International Student Assessment (PISA) commissioned by the Organisation for Economic Cooperation and Development (OECD, and in 2007-2008, representing NSF, she served as an ex officio member of the President’s National Mathematics Advisory Panel, and co-chaired its Instructional Practices Task Group. Dr. Ferrini-Mundy holds an appointment at Michigan State University (MSU) in the Departments of Mathematics and Teacher Education. She holds a PhD in mathematics education from the University of New Hampshire.

March 14, 2012

Dear Colleagues,

Welcome to the 2012 National Science Foundation (NSF) Informal Science Education (ISE) Principal Investigator (PI) Meeting. This is our opportunity to share and reflect on our work, continue conversations and activities from ISE conferences, workshops, and gatherings held over the past two years, begin new discussions, and convene with our NSF Program Officers.

More than 250 of us have gathered in Washington this week, from every part of this rich, diverse ISE field. Together, the impact of our NSF-funded projects is widely felt among millions of people every year with an extraordinary array of opportunities to explore, discover, and learn. Innovative out-of-school time programs, awe-inspiring films, engaging exhibits, immersive games, and more are part of an informal science education landscape where people of all ages can pique their curiosity, pursue their interests, build new knowledge, and develop an identity as a someone who knows about and uses science, technology, engineering and math (STEM).

Since we last saw many of you at the 2010 ISE Summit, the Center for Advancement of Informal Science Education (CAISE) Co-PIs, staff, partners, and advisors have worked hard to listen to the field—needs, trends and directions—and respond with useful and relevant communications, connections, resources, and convenings. In that spirit, the agenda for this PI meeting has been informed by and infused with your ideas, energy, and participation. We thank you and welcome your ongoing input and feedback on what we have been developing and creating.

Thanks to all who have contributed to and supported CAISE and our vision—a mature, well-resourced informal science education field recognized for its fundamental contributions to learning and society—and of a connected ISE community that broadens participation in STEM among people of all ages and walks of life.

We also welcome our guests from other NSF directorates who are engaged in or connected to informal STEM learning projects, as well as our colleagues from the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), the National Endowment for the Arts (NEA), and the National Institutes of Health (NIH) to this gathering who have generously come to share work from their own portfolios and engage in dialogue about ours. Finally, to the National Science Foundation whose support makes this work possible, our sincere, heartfelt gratitude.

Jamie Bell
Principal Investigator/Project Director
Center for Advancement of Informal Science Education



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The National Science Foundation Informal Science Education Program

Center for Advancement of Informal Science Education

2012 Principal Investigator Meeting
March 14 - 16
Omni Shoreham Hotel
Washington, D.C.

Program Agenda

Day 1: March 14

12:00 pm – 5:00 pm

Registration materials pick-up (Blue Prefunction Room)

2:00 pm – 4:00 pm

Technical Assistance Sessions (Blue Room; all events to take place in the Blue Room unless otherwise noted)

2:00 pm – 2:45 pm

Award Management

Pamela Hawkins, Branch Chief, NSF Division of Grants and Agreements; Laura Buckley, Grant Specialist, NSF; Angela Turner, Grant Specialist, NSF

NSF representatives will guide grantees through an overview of NSF's financial policies and procedures, from the role of the grantee to award-specific requirements. Topics may include, but are not limited to: reporting requirements, subaward recipient monitoring, and consultant requirements.

2:45 pm – 3:00 pm

Break

3:00 pm – 4:00 pm

Introduction to the NSF Online Project Monitoring System (OPMS)

Sandra Toro Martell, Program Officer, NSF ISE Program; Gary Silverstein, Hannah Putman, and Melissa Bryce, Westat

During this session, NSF and Westat will provide an overview of the OPMS, share findings from previous submissions, and answer your questions about how to address project-specific issues.

5:00 pm – 7:00 pm

Welcoming Reception (Blue Prefunction Room and Terrace)

Light Refreshments and No-Host Bar

Day 2: March 15



7:00 am – 9:00 am

Registration materials pick-up and poster set-up (Blue Prefunction, Embassy, Cabinet, Forum, and Capitol Rooms)

8:00 am – 9:00 am

Breakfast with NSF ISE Program Officers

9:00 am – 10:00 am

Welcoming Comments and Q&A: Dr. Joan Ferrini-Mundy, Assistant Director, NSF Directorate for Education and Human Resources

10:00 am – 12:00 pm

Poster Sessions, CAISE Resource Areas, and PI Resource Workshops (Blue Prefunction, Embassy, Cabinet, Forum, and Capitol Rooms; workshop in Calvert Room)

In cooperation with the NSF ISE Program and our partners, CAISE has designed a suite of resources to strengthen and connect the ISE community and to support current and future principal investigators. These resources include: the ISE Evidence Wiki, the PI's Guide to Managing Evaluation, the ISE Timeline, the Informal Commons, and the Entrée Initiative. Learn more about these projects at the CAISE Resource Areas throughout the meeting.

10:00 am – 10:10 am

Break

10:10 am – 10:55 am

Poster Rotation 1 / Workshop: Get the Most from Working with Your Evaluator

Attendees are invited to view project posters or attend a workshop (offered Thursday and Friday morning). In this workshop, join your peers to share your ideas, successes, concerns, problems, and suggestions in breakout groups facilitated by PIs with experience in collaborating with professional evaluators. Talent scouts at each table will be on the lookout for examples to be incorporated into the PI's Guide to Managing Evaluation in Informal Science Education Projects.

11:05 am – 11:50 am

Poster Rotation 2 / Workshop: What Makes a Great Evaluation Report?

Attendees are invited to view project posters or attend a workshop (offered Thursday and Friday morning). In this workshop, breakout groups will look at case studies to unravel this mystery. What should be included? What should you be thinking about in years 1, 2, 3, and onwards in your project to get truly useful evaluation reports on your projects? Get tips for talking with your evaluator and share strategies with your peers. Your input will inform the PI's Guide to Managing Evaluation in Informal Science Education Projects.

11:50 am – 12:00 pm

Break

12:00 pm – 1:15 pm

Panel Discussion and Networking over Lunch

12:00 pm – 12:30 pm

Informal Networking

12:30 pm – 1:15 pm

Scientists and Public Engagement: a panel discussion with scientists involved with ISE

1:15 pm – 1:45 pm

Presentation on CAISE Resources

1:45 pm – 2:10 pm

Nascent to Burgeoning Communities of Interest: Continuing the ISE Conversation

Building on NSF-funded conferences, meetings, and workshops that have been held by Principal Investigators since 2010, attendees will gather to discuss areas of interest. Topics include ISE Organizational Networks; Sustainability Science and ISE; Professional Development; Art & Science; Media; Public Engagement with Science; Designing, Making, Playing; 21st Century Learning in Natural History Settings; Cyberlearning; Hurricane Science and Education; and Public Works as Sites for ISE.

Attendees will first hear brief descriptions of each topic, with reports from prior events, and then join interest groups to continue discussions. Written synopses of these topics appear on page 12.

2:10 pm – 2:20 pm

Break

2:20 pm – 3:45 pm

Nascent to Burgeoning Communities of Interest: Group Discussions (Blue, Governor's, and Calvert Rooms)

3:45 pm – 4:00 pm

Break

4:00 pm – 4:50 pm

Nascent to Burgeoning Communities of Interest Gallery Walk / Networking

4:50 pm – 5:00 pm

Wrap-Up

Day 3: March 16

7:30 am – 9:00 am

Registration materials pick-up (Blue Prefunction Room)

8:15 am – 9:15 am

Breakfast

9:15 am – 9:25 am

Introduction to Open-Space Session Format and Voting

Interested in exploring a new topic of interest, sharing an activity, or continuing a conversation from Thursday? Nominate your idea for the Open-Space Sessions on Friday afternoon. Attendees will be able to nominate topics throughout the morning.

9:25 am – 11:45 am

Poster Sessions, CAISE Resource Areas, and PI Resource Workshops (Blue Prefunction, Embassy, Cabinet, Forum, and Capitol Rooms; workshop in Calvert Room)

Stop by the CAISE Resource Areas to speak with CAISE staff, Co-PIs, advisors, and partners, and learn more about CAISE initiatives and resources.

9:25 am – 9:40 am

Break

9:40 am – 10:25 am

Poster Rotation 3 / Workshop: Get the Most from Working with Your Evaluator

Attendees are invited to view project posters or attend a workshop (offered Thursday and Friday morning). In this workshop, join your peers to share your ideas, successes, concerns, problems, and suggestions in breakout groups facilitated by PIs with experience in collaborating with professional evaluators. Talent scouts at each table will be on the lookout for examples to be incorporated into the PI's Guide to Managing Evaluation in Informal Science Education Projects.

10:35 am – 11:20 am

Poster Rotation 4 / Workshop: What Makes a Great Evaluation Report?

Attendees are invited to view project posters or attend a workshop (offered Thursday and Friday morning). In this workshop, breakout groups will look at case studies to unravel this mystery. What should be included? What should you be thinking about in years 1, 2, 3, and onwards in your project to get truly useful evaluation reports on your projects? Get tips for talking with your evaluator and share strategies with your peers. Your input will inform the PI's Guide to Managing Evaluation in Informal Science Education Projects.

11:20 am – 11:45 am

Poster Breakdown

11:45 am – 12:45 pm

Lunch

12:45 pm – 1:10 pm

Choose Topics for Open-Space Sessions

Nominees will describe Open Space topics and attendees will vote. Topics that receive the most votes will be assigned a space for discussion.

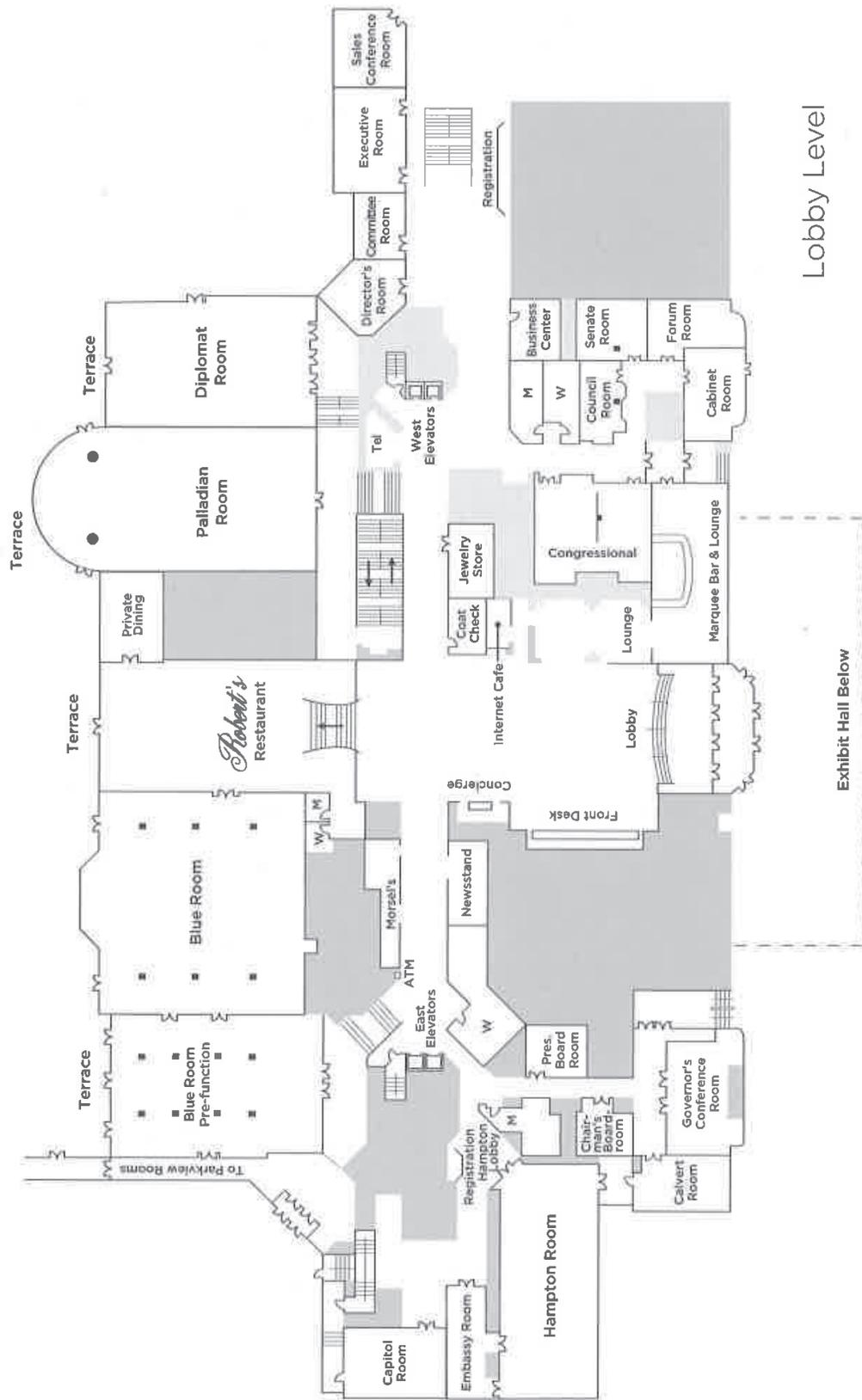
1:10 pm – 2:15 pm

Open-Space Sessions (Blue, Governor's, Calvert, Embassy, Cabinet, Forum, and Capitol Rooms)

2:15 pm – 3:00 pm

New Frontiers in ISE: Reflections on the future from NSF Program Officers, Principal Investigators, and federal agency representatives

Hotel Map and Meeting Rooms



CAISE Partners and Advisors

CAISE is a partnership among diverse institutions in the ISE field, and is guided by Senior Advisors and the National Science Foundation. Reflectors provide additional leadership, reflection, and assistance on CAISE projects and resources.

CAISE Leadership and Staff:

Principal Investigator/Project Director: James Bell, Association of Science-Technology Centers (jbelle@astc.org)

Co-Principal Investigator: Kirsten Ellenbogen, Past President, Visitor Studies Association (kellenbogen@smm.org)

Co-Principal Investigator: Kevin Crowley, Director, University of Pittsburgh Center for Learning in Out-of-School Environments (crowleyk@pitt.edu)

Co-Principal Investigator: John Falk, Sea Grant Professor of Free-Choice Learning, Oregon State University (falkj@science.oregonstate.edu)

National Science Foundation Cognizant Program Officer: Alphonse DeSena (adesena@nsf.gov)

Web Strategist: Trevor Nesbit, Association of Science-Technology Centers (tnesbit@astc.org)

Program Manager: Kalie Sacco, Association of Science-Technology Centers (ksacco@astc.org)

PI Meeting Event Manager: Wendy Hancock, Association of Science-Technology Centers (whancock@astc.org)

CAISE Senior Advisors:

Sue Ellen McCann, Executive Producer, KQED, San Francisco, CA (smccann@kqed.org)

Alan Friedman, Consultant, New York, NY (Alan@FriedmanConsults.com)

Julie Johnson, Distinguished Chair of Museum Leadership, Science Museum of Minnesota, St. Paul, MN (jjohnson@smm.org)

Anthony “Bud” Rock, CEO, Association of Science-Technology Centers, Washington, DC (brock@astc.org)

Barry Van Deman, President and CEO, Museum of Life and Science, Durham, NC (barry.vandeman@ncmls.org)

Additional CAISE Partners:

Ideum (www.ideum.com)

UC Berkeley, Lawrence Hall of Science (www.lawrencehallofscience.org)

CAISE Reflectors:

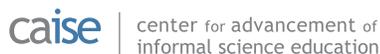
Richard Hudson, Director of Science Production, Twin Cities Public Television (rhudson@tpt.org)

Wendy Wheeler, President, The Innovation Center (wwheeler@theinnovationcenter.org)

Ellen Wahl, Director of Youth Development and Entrepreneurship, New York Hall of Science (Ellen@ellenwahl.com)

Tinsley Davis, Executive Director, National Association of Science Writers (tinsleydavis@ngs.org)

Bruce Lewenstein, Professor of Communication and Science and Technology Studies, Cornell University, Cornell University (b.lewenstein@cornell.edu)





Nascent to Burgeoning Communities of Interest

From 2010-2012, a wide variety of convenings, workshops and conferences have taken, or will take place nationally on emerging communities and interests within the broader scope of informal science education. The 2012 PI Meeting will build on and expand conversations initiated at these gatherings.

Because of related thematic content, some events have been grouped to broaden the conversation.

Theme: Media

STEM Media Conference

When: March 14, 2012

Where: Washington, DC

The STEM Media Conference brought together approximately 30 attendees from the disciplines of Film, Television, Radio, and Online/Digital Media to share the challenges facing each of their disciplines and develop strategies that will support STEM media collaborations across all four platforms. The goal of the Conference was to begin the formation of a professional STEM media organization that can support the community of producers, in the same way ASTC supports the museum educator community or the VSA supports the community of ISE researchers. Mass media – film, television, radio, and more recently, productions for online/digital platforms – have been a primary component of NSF’s support for ISE for more than three decades, drawing on the skills of an extremely diverse array of professionals. Yet despite the many common issues faced by these professionals and the increasingly cross-platform nature of ISE media projects in the NSF portfolio, at present no formal organization, professional society, or annual conference exists for this community. Conversations at the PI Meeting will focus on the presentation of key findings from the STEM Media Conference as well as proposed strategies.

CAISE Media Initiative Convening

When: July 12–13, 2011

Where: Washington, DC

As part of the ongoing effort to convene interest groups within the ISE field, CAISE convened 20 ISE field leaders in science media production, policy, research and evaluation in Washington, DC to identify critical action areas and strategy. Meeting participants were asked to think strategically about: 1) navigating future directions in science communication, media, and learning; 2) strengthening our evidence base and communicating the value of ISE media projects to a diverse set of constituents; and 3) identifying ways to foster more coordination, collaboration and community among ISE media professionals and with others working in informal science education. Meetings insights, conversations and a set of actions going forward will be synthesized, shared and expanded via the CAISE website, professional networks, conferences and at the 2012 PI Meeting.

Learn more: caise.insci.org/activities/media

Theme: Organizational Networks
CAISE Convening on Organizational Networks in ISE

When: November 17–18, 2011

Where: Washington, DC

One of several meetings convened by CAISE and NSF to explore current topics and themes in ISE, the Organizational Networks workshop was designed to deepen the ISE field's understanding about the benefits, challenges and unexplored opportunities that working in networks provides. Discussions at the PI Meeting will focus on leveraging, utilizing, and connecting to networks as well as the evaluation of networks. Topics will include generating a more meaningful understanding of the networks that exist in ISE; deeply exploring the intended outcomes of networks and defining when they are suited for particular outcomes; looking at techniques for evaluating networks; identifying and sharing relevant research relating to organizational networks; learning how PIs engage in and leverage existing networks for completing and disseminating their work; and talking about the impacts of networks.

Theme: Professional Development in ISE
To Think, To Write, To Publish: Forging a Working Bond Between Next Generation Science Communicators and the Next Generation of Science and Technology Policy Leaders

When: May 16–19, 2010

Where: Arizona State University, Tempe, AZ

"To Think, To Write, To Publish," established 12 collaborative 2-person teams comprised of a "next generation" science policy scholar and a "next generation" science writer to learn creative nonfiction/narrative techniques and to write a creative nonfiction essay together, utilizing the scholar's research. This collaborative effort addressed communication challenges relating to science policy communication. The results: Writers learned much more about the process and importance of research and the key influence of policy, and scholars learned about how to utilize creative nonfiction storytelling techniques to reach a general audience and make policy more accessible. A follow-up and expanded program is in the planning stages.

Learn more: cspo.org/conference2010

CAISE Convening on Professional Development in ISE

When: February 2–3, 2012

Where: Washington, DC

Providing professional development opportunities for educators has long been recognized as a way to enhance high-quality teaching and learning practices. A variety of projects, programs, and opportunities have arisen to address the need for professional development in ISE. This workshop, convened by CAISE and the NSF ISE Program, brought together stakeholders in ISE whose projects and interests explore professional development topics. Conversations that emerged and will be explored further include defining a professional identity in ISE through projects and collaborative practices, the sustainability and transferability of professional development experiences, frameworks for thinking about professional development that match different approaches and audiences, and sharing skills-building best practices.

Theme: Sustainability and Science Education in ISE

CAISE Convening on Sustainability Science Education

When: February 6–7, 2012

Where: Washington, DC

Scientists, educators, and policymakers are increasingly recognizing that education represents a key path to promoting sustainability awareness to learners of all ages. Informal settings play an essential role in promoting lifelong learning, and this meeting brought together a wide spectrum of ISE educators whose projects pertain to the emerging field of sustainability science education in ISE—including representatives from media, cyberlearning, out-of-school time programs, science museums, and other ISE sectors. Topics coming out of this meeting to be discussed further include the definition of "sustainability" as it relates to ISE; useful evaluation tools, tips, and techniques for measuring the long-term impact of projects addressing sustainability; and identifying promising practices in sustainability ISE.

Carbon Smarts Conference

When: October 20–21, 2011

Where: University of Massachusetts, Lowell, MA

This national conference brought diverse communities together to consider the potential of an out-of-home multi-media model for fostering informal science learning among the commuting adult population. Experts representing marketing, communication, risk analysis, science education, mass transit, informal learning, and atmospheric research shared their experience and ideas on how to improve the public's understanding of climate change science with special attention given to new digital tools such as smart phones and augmented reality. The conference focused on establishing discourse between academic and industry personnel with a goal of laying a foundation for more innovative initiatives. More than 75 presenters and attendees shared ideas, discussed challenges, and explored research opportunities. As a result of this conference, a new full-scale development informal science education proposal was submitted by an interdisciplinary and collaborative team.

Learn more: uml.edu/Education/Carbon-Smarts/default.html

Theme: Hurricane Science and Education The Hurricane Science and Education Symposium

When: October 25, 2010

Where: Tulane University Xavier Center for Bioenvironmental Research, New Orleans, LA

On October 25, 2010, the University of Rhode Island Graduate School of Oceanography (URI/GSO) held The Hurricane Science and Education Symposium at the Tulane/ University Xavier Center for Bioenvironmental Research in New Orleans, LA. The event brought together the nation's leading hurricane researchers and forecasters, preparation and mitigation experts, as well as formal and informal science educators from across the United States to discuss the vital need to advance hurricane safety through science and education. The meeting coincided with the launch of an unprecedented and comprehensive interactive website, Hurricanes: Science and Society and the opening of the Louisiana State Museum (LSM) exhibition, Living with Hurricanes: Katrina and Beyond. The HSS website and its associated educational resources provide information on the science of hurricanes, methods of observing hurricanes, modeling and forecasting of

hurricanes, how hurricanes impact society, and how people and communities can prepare for and mitigate the impacts of hurricanes. In addition to in-depth science content, the website includes educational resources, case studies, and a historical storm interactive. All content has undergone rigorous peer review by an esteemed panel of hurricane experts. Both the website and key elements of the LSM exhibition have been made possible by the National Science Foundation's Informal Science Education program.

Learn more: hurricanescience.org

Theme: Art and Science Education Art as a Way of Knowing

When: March 3–4, 2011

Where: Exploratorium, San Francisco, CA

Learn more: exploratorium.edu/knowing

The Art of Science Learning

**When: May 16–17, 2011; June 14-16, 2011;
April 16–17, 2012**

**Where: San Diego, CA; Chicago, IL;
Washington, DC**

Learning through the arts represents a uniquely interdisciplinary way of exploring and doing science in informal settings. Two recent projects have delved further into this topic. The first, Art as a Way of Knowing, brought together a wide variety of experts in the field to examine historical precedents, explore the nature of learning through the arts, and profile contemporary models for the arts in interdisciplinary contexts. The second, a series of conferences exploring The Art of Science Learning, convened hundreds of scientists, artists, educators, business leaders, museum professionals, researchers and policymakers to examine ways in which the arts can help foster science learning and spark STEM innovation. Topics to be explored further at the PI Meeting include establishing a knowledge base of art-science learning best practices; sharing research on how integrating art and science can support the development of a future STEM workforce, and providing evidence of science learning through the arts.

Learn more: artofsciencelearning.org

Theme: Public Engagement and Science SENCER-ISE

When: March 6, 2011

Where: Liberty Science Center, Jersey City, NJ

Learn more: ncsce.net/Initiatives/SENCERISE.cfm

Dimensions of Public Engagement with Science

When: May 12-13, 2011

Where: Museum of Science, Boston, MA

Expert and Citizen Assessment of Science and Technology (ECAST)

When: December 8–9, 2011

Where: Museum of Science, Boston, MA

Three recent NSF funded workshops have explored public engagement with science (PES) in the ISE community. The Dimensions of PES workshop reviewed recent PES activities, developed strategic directions for further development of PES in ISE, and launched discussions of particular project interests among the participants. The ECAST workshop (Expert and Citizen Assessment of Science and Technology) explored topics and methods for public engagement and ways to spin off outreach activities that engage the larger public in connection with formal citizen consultation activities. The third workshop explored the potential of SENCER-ISE collaborations. SENCER (Science Education for New Civic Engagements and Responsibilities) courses and programs in universities strengthen student learning and interest in the sciences, technology, engineering, and mathematics by connecting course topics to issues of critical local, national, and global importance. In addition, ASTC has recently launched a Public Engagement with Science (PES) Community of Practice to help ISE institutions become more valuable to the public by facilitating engagement with scientists, providing a mechanism for engaging the broader community in this area of work. Each of the three workshops explored the role of local, national, and global issues in our science education work. Discussions to be continued at the PI Meeting include the role of societal issues in our ISE work, what our aspirations are within that work, and what supports are needed to move forward.

Enhancing Biodiversity Conservation and Environmental Stewardship through Public Participation in Scientific Research

When: April 7–8, 2011

Where: American Museum of Natural History, New York, NY

Contact: Rick Bonney

This workshop convened at the American Museum of Natural History sought to define and answer questions relating to how public participation in scientific research (PPSR) can augment community involvement in biodiversity conservation and environmental stewardship. Topics addressed and conversations to continue include understanding how information generated through PPSR can contribute to conservation-related research; how PPSR can promote a more democratic conservation science and practice; how local, lay, and traditional knowledge can complement scientific knowledge through PPSR; what types of learning facilitate engagement with conservation through PPSR; and how PPSR can lead to further conservation actions.

Theme: Future of Natural History Learning 21st Century Learning in Natural History Settings

When: February 12–15, 2012

**Where: Smithsonian National Museum of
Natural History, Washington, DC**

The 21st Century Learning in Natural History Settings Conference was hosted by the Smithsonian's National Museum of Natural History to initiate ongoing dialogue toward a learning research and innovation agenda for natural history museums. Through preconference activities and a four-day conference, a diverse group of 100 scientists, educators, exhibit developers, web and new media experts, learning researchers, administrators, and other professionals worked together to identify the best opportunities to harness the unique resources of natural history museums and environments to maximize our collective impact in the 21st Century. In small and large group discussions, networking sessions, short panel presentations, working groups, planning sessions, and other activities, participants engaged in conversations and produced comprehensive plans for carrying the conversation forward. Conference deliverables available on

the website include a preliminary draft Call to Action and Declaration of Purpose for natural history learning environments for the 21st Century, draft Learning Research Agenda outline, and action plans for more than 40 organizations in attendance.

Learn more: informal.science.org/conference

Theme: Designing, Making, Playing
Design, Make, Play: Growing the Next Generation of Science Innovators

When: January 13–14, 2012

Where: New York Hall of Science, Queens, NY

“Design, Make, Play” aimed to explore how the various methodologies of designing, making, and playing can create broader and more compelling pathways into STEM learning in both informal and formal settings. About 125 individuals attended the conference from a variety of communities including informal and formal educators and designers, learning researchers and technologists, and representatives from federal agencies involved in education policy as well as representatives from educational philanthropies. The conference was developed by NYSCI in collaboration with the White House Office of Science and Technology Policy and the Maker Media division of O’Reilly Media. A formal framework for exploring the similarities and differences of designing, making, and playing approaches was followed by a set of workshops that provided attendees with a concrete and common set of hands-on experiences from both in-school and out-of-school contexts. Reflections and formal presentations helped attendees identify the kinds of learning supported by each workshop, target outcomes for such programs, and how to assess them. Conversations at the PI meeting will share some of the detail of what was discussed at our “Design, Make, Play” conference and seed a broader conversation about the future potential of designing, making, and playing in ISE.

Learn more: nysci.wikispaces.com

Theme: Public Works as Sites for Informal STEM Learning
Golden Gate Bridge as an Informal Science Education Resource

When: June 21–22, 2012

Where: San Francisco, CA

The Golden Gate Bridge, Highway and Transportation District is the recipient of a \$3 million grant from the NSF to establish a permanent outdoor exhibition in the

visitor area at the San Francisco end of the Bridge. The exhibits will explain the engineering and construction of the Bridge. Included within the scope of the project is a conference on the theme of using civil engineering works as educational opportunities for the public, titled “Public Works for Public Learning,” to be held June 21–22, 2012 at the San Francisco Hyatt Regency Hotel. Hosted by the Golden Gate Bridge, Highway and Transportation District, the conference will present the process and outcomes of the Golden Gate Bridge project, and showcase other examples of both large and small visitor serving programs, both international and domestic. Speakers include representatives of the Panama Canal, Hoover Dam, Sydney Harbour Bridge, and the Eiffel Tower, as well as community-scale civil engineering works that have visitor-serving programs. The keynote speaker will be G. Wayne Clough, the 12th Secretary of the Smithsonian Institution in Washington, D.C. The conference will include a field trip to the Bridge itself. Presentations will include topics on exhibit development, project evaluation, and visitor accessibility.

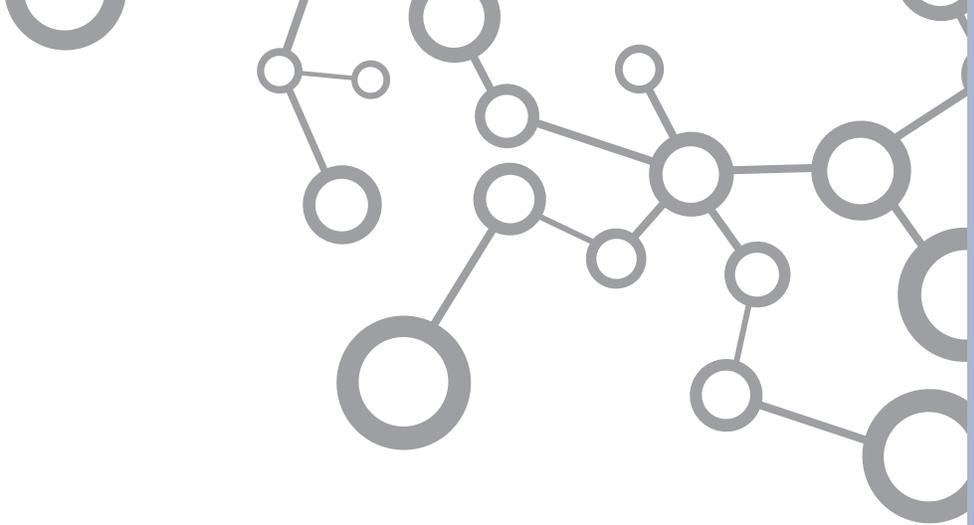
Learn more: pwplconference.com.

Theme: Cyberlearning
The Cyberlearning Summit: Discussing Big Ideas at the Intersection of Emerging Technology and Research on Learning

When: January 18, 2012

Where: Washington, DC

On January 18, researchers and policymakers gathered in Washington, DC, for the first Cyberlearning Summit. The Cyberlearning Research Summit was a high-profile gathering in Washington, DC, featuring top-quality research-based speakers who shared visions for the future of learning with emerging technologies. Organized by SRI International, the Lawrence Hall of Science, and National Geographic Education, the day was filled with TED-like talks about what cyberlearning is, what it can become, and the transformative potential it has to shape learning and our future. Go to cyberlearning.sri.com to learn more about the speakers, read abstracts of their talks, and participate in helping create definitions for each topical area on the wiki. We welcome and encourage new voices to join in the conversation.



CAISE Resources and Initiatives

CAISE and our partners have been developing a number of resources and initiatives to support and advance the ISE field. To learn more about these activities at the 2012 ISE PI meeting, visit the CAISE Resource Areas during poster rotations. See caise.insci.org for more information about our projects.

Informal Commons

The Informal Commons allows users to search for resources across ISE websites. These resources include:

- Informal Education Project Descriptions
- Case Studies and Reviews
- Instructional Materials
- Research and Evaluation Instruments and Products
- Reference Materials
- Social Media and Online Communities

Results are categorized by metadata such as audience, subject matter, and resource type. This powerful search engine allows ISE professionals to quickly and efficiently characterize the state-of-the-field, and fuel new project development and partnerships. The search engine has been through phases of development and evaluation over the past year. The most recent version is available at informalcommons.org.

To learn more, contact Trevor Nesbit at tnesbit@astc.org

Infrastructure Coordination Roundtable

CAISE facilitates the Infrastructure Coordination Roundtable (ICR) to coordinate technical systems and maintain metadata standards that dynamically link ISE websites to the Informal Commons.

To learn more, contact Kevin Crowley (crowleyk@pitt.edu).

ISE Timeline

The Interactive ISE Timeline aims to promote a shared professional identity by collecting, organizing, and displaying accomplishments, and perspectives from the ISE field. As a growing professional development resource for new NSF grantees, ISE professionals, and those interested in learning more about the field, the Timeline is designed for sharing project information and promoting discussions of innovations and practices of the past, present, and future. The Timeline will allow current ISE professionals to discover new facets of ISE projects, and contribute their comments, observations, and insights toward building a collective understanding of the values, achievements, and aims of the field.

To learn more, contact Sherry Hsi (sherryjh@berkeley.edu).

ISE Evidence Wiki

The ISE Evidence Wiki is a dynamic resource that provides evidence about the impact of informal learning experiences. The wiki consists of brief evidence summaries, allowing easy creation and editing of interlinked web pages toward a common goal of providing evidence that characterizes the benefits and outcomes of informal learning environment experiences. Anyone can read the wiki, or log in to write a post, edit an existing post, or add comments.

See the wiki at www.iseevidencewiki.org or for more information, contact Kirsten Ellenbogen (kellenbogen@smm.org).

PI's Guide to Managing Evaluation

This guide is designed to support the useful integration of evaluation and project design in informal learning environments. It examines how you can work with your evaluator to: inform your practice, facilitate decision making on project development teams, gather evidence of success, attract further funding, and make a difference in the lives of all the program participants that you touch through your work. Visit caise.insci.org/activities/pi-guide to read the latest draft of the Guide.

To learn more, contact Kirsten Ellenbogen (kellenbogen@smm.org).

Entrée Initiative

The Entrée Initiative's goal is to increase awareness of the ISE field and the resources that CAISE provides to a variety of audiences, including current and future NSF principal investigators, the STEM research community, and ISE organizations and people. Through a number of strategies, including live presentations, direct contact, and the CAISE website, Entrée provides points of access to the resources of CAISE, the NSF ISE portfolio, and the ISE field writ large.

To learn more, contact John Falk (falkj@science.oregonstate.edu) or Benjamin Dickow (benjamindickow@gmail.com)

The Entrée initiative is developing a growing body of resources and information, but is always looking for new material. If you have an ISE resource or link that you feel will support our goal of helping scientists and others outside of ISE learn more about how to become involved with the field, please contact us at info@caise.insci.org.





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