



Roundtable Discussions

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ISE Summit 2010 | Surrounded by Science
Washington, D.C. March 3-5

caise | center for advancement of
informal science education

This document is intended to be a faithful synthesis of a session that took place at the Informal Science Education Summit 2010, *Surrounded by Science*, in Washington, D.C. March 3-5. It is meant to serve as a resource for those who attended and for others in the field.

Participant comments have been paraphrased and reordered. These are not exact quotes, rather they are an attempt to capture the content and meaning of the ideas presented. The contents of this document do not necessarily reflect the views of CAISE, the National Science Foundation, or individual meeting participants.

This is one of a series of documents covering the ISE Summit 2010. For more visit insci.org

Sparks!

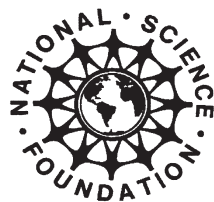
These illustrated, online posts about informal science education projects appear on the CAISE Web site, contributing to a picture of the field.

<http://insci.org/sparks>

Documentation

Catherine McEver
The Bureau of Common Sense

Cover: Climate Change Discussion Group
Right: Diversity Discussion Group



<http://www.nsf.gov>

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Introduction

Wendy Pollock
Principal Investigator/Director, Center for
Advancement of Informal Science Education

You have been hearing a lot during this summit about CAISE Inquiry Groups. Many of you have been involved in Inquiry Groups, but others have not. What are they? They are small groups that we assemble that represent people from across the field, very intentionally putting together people with different perspectives, to focus on issues that are important to all of us. The Inquiry Groups are trying to lay some groundwork for conversation for the rest of us, so that when we come to these larger convenings or have online discussions we have rich starting points.

During this summit we have been encouraging you to post topics on paper in what we have called the Connections Lounge. If you have something that you are burning to work on that you think is really important—it may be an idea you came here with or it may be something that was stimulated by what you've heard and discussed here—post it in the Connections Lounge. During the last session of the summit we will assign meeting spaces for discussion of those topics. Then report back, and we will work to see how we can help support further inquiry and discussion.

Overview: The Results of this Process

This experiment in self-organized discussion groups was a success in terms of participant interest and engagement in pursuing topics posted by peers in the Connections Lounge. The photos in this section offer visual evidence regarding the number of participants drawn to each topic. Reporting back on the group discussions, which was also on a self-organizing, voluntary basis, has continued after the summit. As a result, this document notes only some of the topics that emerged from discussions during and following the summit.



Next Steps

If you are interested in pursuing any of the topics touched on in this section, contact CAISE regarding possibilities for starting or joining online discussion or an Inquiry Group.

info@caise.insci.org

Posting topics for discussion in the Connections Lounge

Instigators:

- Jamie Bell, Visiting Scholar, UPCLOSE, University of Pittsburgh
- Natalie Rusk, Research Specialist, Tufts University/MIT Media Lab

Relevant resources for further study:

- A book by Philip C. Candy with more than 1,000 citations in Google Scholar called *Self-Direction for Lifelong Learning*. A comprehensive guide to theory and practice: <http://eric.ed.gov/ERICWebPortal/recordDetail?accno=ED353470R>
- Work on self determination theory: <http://www.psych.rochester.edu/SDT/>
- Work of Leslie Herrenkohl at University of Washington: <http://education.washington.edu/areas/ep/profiles/faculty/herrenkohl.html>
- Ongoing familiarization with *Learning Science in Informal Environments: People, Places and Pursuits*

Intrinsic Motivation

This group discussed motivation and research about what supports and interferes with pursuing and identifying oneself as interested in science-related endeavors. Discussion touched on persistence and “key detractors” (for example, one that George Bo-Linn called “extrinsic disapproval of incipient identity”), on “unpredictable transformational moments” that occur in ISE settings, on social modeling, and on what

might be learned from visitor studies and from research on emotion. Jamie Bell reported that the group wants to “continue our rich dialogue about what constitutes motivation, interest, and identity, and how to measure it”—including looking at both research and practitioner knowledge, to build shared understandings across the ISE field.

Intrinsic Motivation Group



Defining Goals for “Educate to Innovate”

This group asked, given the challenge issued the day before by Tom Kalil of the White House Office of Science and Technology Policy, “how do we define ISE goals for Obama’s ‘Educate to Innovate’ program?”

Tessie Topol from Time Warner Cable, who was part of the group, described the TWC program Connect A Million Minds (connectamillionminds.com), which includes The Connector, a database of events and programs across the country geared to parents of middle school students and partners with the Coalition for Science After School. TWC is now partnering with the ‘Educate to Innovate’ initiative. The

White House is looking for a steady drumbeat with continuing initiatives and announcements, public/private partnerships, good stories to tell, and existing projects they can promote. The group wants to see CAISE act quickly, perhaps through a new work group, “to become the conduit between the ISE community and ‘Educate to Innovate’. It needs to clearly convey information about and from Educate to Innovate to the community; solicit and collect ideas, suggestions and information about relevant programs from the community; cull specific and succinct recommendations from that material; and deliver that information in a meaningful way to Tom and his OSTP team.”

“Educate to Innovate” Group



Instigator

- Valentine Kass, Program Officer, NSF

Report Back

- Valentine Kass, Program Officer, NSF
- Jared Lipworth, Director, Science Programs, Thirteen

Some questions we asked:

- How do we best tie in to National Lab Day partnerships?
- How do we disseminate information about Educate to Innovate to the ISE community?
- How do we convey ISE community recommendations to OSTP?

Goals of ‘Educate to Innovate’ include:

- Getting kids excited about STEM
- Getting parents to understand the importance of STEM education
- Increasing the number of STEM teachers
- Increasing STEM education opportunities for minorities and girls.

Instigators

- Leslie Goodyear, Program Director, Division of Research on Learning, NSF
- Minda Borun, Director of Research and Evaluation, The Franklin Institute

ISE Evaluation and Research Group

ISE Evaluation and Research

More than forty people gathered to talk about evaluation. Among the issues and topics they put on the table for continued discussion:

- Framework for evaluating ISE projects
- Compliance issues
- Accountability
- Evaluation that advances the field
- Evaluation that is for project promotion
- Clarification about front end, literature reviews, logic models, evaluator roles, timing in grant cycle
- Demonstrating impact beyond project experience
- ISE ownership of the research/evaluation agenda/goals alignment
- Free exchange between research and evaluation at the project level
- Division of Research on Learning (DRL) increased emphasis on “rigorous” evaluation
- Timeline beyond three years
- Enabling learning across the field (e.g., publish?)
- Encouraging scientific principles in the judgment of evaluation—open the “black box”
- For projects that create media products, how to measure impact
- How do you balance budget issues—evaluation, collaborations, management, outreach?



Sparking the Imagination

This group came together to explore how the role of sparking the imagination is critical in motivating, engaging, and cultivating relevant meaning for STEM learning. Eileen Smith wrote later to report that they had “identified how informal science learning institutions are a primary life-long provider of this spark to individuals, families, communities, institutions, and the general public.” The group proposed that the phrase “Drive for Innovative Originality” would be a “better goal and rallying point for ISE than ‘Race to the Top.’ Innovation and originality are critical elements at motivating STEM careers and a competitive workforce that are not cov-

ered in formal education,” she wrote. “The ISE field inherently increases learner motivation to explore the topic, and yet many formal education systems use ISE visits as an end of section ‘reward’ rather than an introductory ‘motivational’ visit (as well as personal relevance and reinforcement). “

Instigators

- Eileen Smith, Associate Director, University of Central Florida Media Convergence Laboratory, Orlando
- Chris Stapleton, President, Simiosys

Sparking the Imagination Group



Teacher Professional Development in K-8 Schools

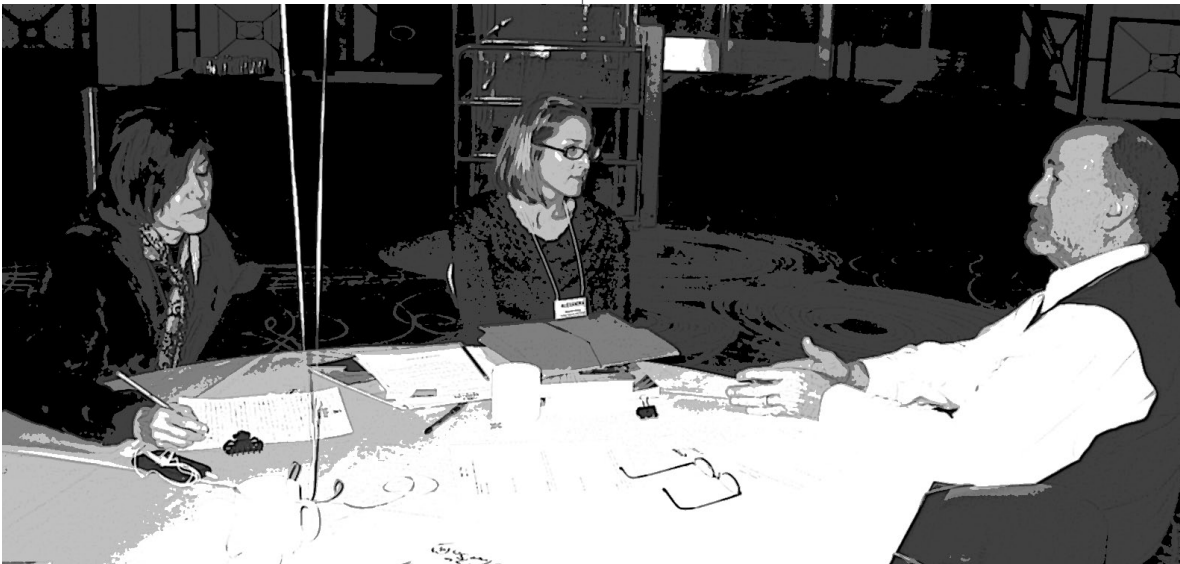
This group discussed a lack of interest in formal teacher development in the ISE community, findings from the Fleet Science Center, the nature of teachers' difficulties with science, interests in teaching in K-8 schools, and the ease of creating a network among the ISE community regarding teacher professional development.

The group agreed to network further and keep in touch about data, professional development opportunities for teachers, and funding. They would like to find out why there is a lack of interest (or is there?) in education and teacher education in the ISE community, and they propose an online discussion in the CAISE Forum.

Instigator

- Jeff Kirsch, Executive Director, Reuben H. Fleet Science Center, San Diego

Teacher Professional Development Group



Avatar Effect

Original Call for Discussion

The promise, challenges and opportunities of visualization (e.g., 3-D) and other visual technologies in affecting STEM learning

Questions:

- What do we already know about how 3-D works in ISE context?
- What successes have you seen with 3-D/visual technology in ISE?
- What can 3-D uniquely contribute to ISE & STEM?
- Are all 3-D experiences created equal?
- Does the technology change so quickly that it's hard to measure/understand what works, etc.?

Instigators:

- Heather Segale, Education & Outreach Coordinator, UC Davis
- Steve Yalowitz, Senior Research Associate, Institute for Learning Innovation

Avatar Effect Group



Instigators:

- Susan Gill, Director of Education, Stroud Water Research Center

Art and Science

Original Call for Discussion

We are talking art and science: Why? What?
How?

Art and Science Group



Diversity Group



Instigator

- Bob Russell, Director, Science & Health Programs, Acceso Hispano/Self Reliance Foundation

Original Call for Discussion

Expanding access to informal science for Latinos, African Americans, and other underserved groups.

NASA Education and Public Outreach

NASA Education and Public Outreach Group

Original Call for Discussion:

Join several NASA EPO leads (also known as Informal Science Education) to discuss collaboration opportunities and the future of the profession.

Instigator

- Nora Normandy, Outreach Officer, NASA Headquarters



Instigators

- David Begay, Vice President, Indigenous Education Institute
- Nancy Maryboy, President, Indigenous Education Institute

Cosmic Serpent

Original Call for Discussion:

Join us if you are part of the Cosmic Serpent NSF project, or if you are interested in dialogue between Native American and Hawaiian ways of knowing and scientists and educators.



Cosmic Serpent logo on back of jacket

Cosmic Serpent Group

Learn more:
<http://cosmicserpent.org>