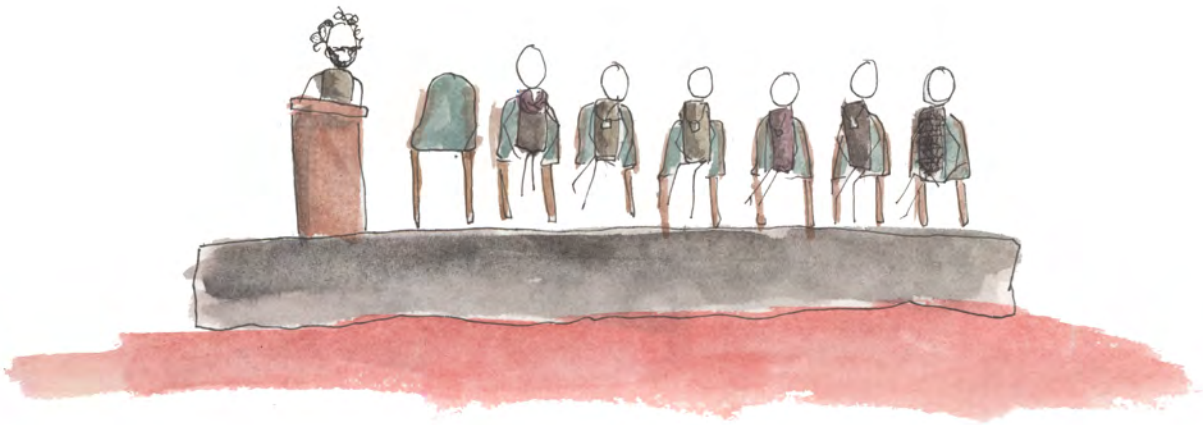
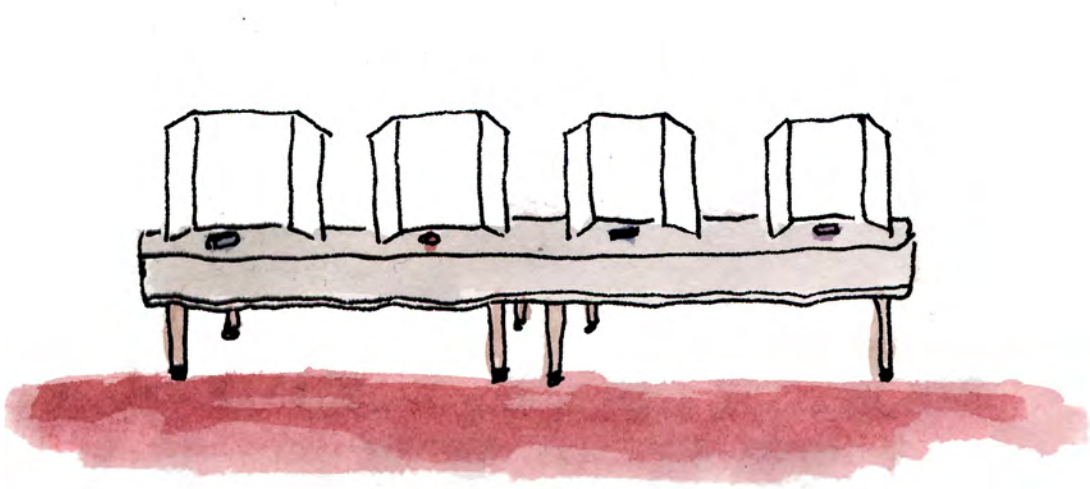


2014 AISL PI Meeting

August 20-22, 2014 • Washington, D.C.

Dedicated to Dr. Alan Friedman



Foreword
Just before it all begins

It is quiet throughout the hotel convention space. Attendees trickle in, hugging their hello's in twos and threes. The poster hall is a skeleton of blank poster boards. Office supplies — tape, spraymount, post-it notes — are peppered about. CAISE staff buzz around with purpose, and with anticipation. The workshop rooms, the ballroom, even the hallways for the most part are empty, awaiting a new group of people.

Principal Investigators (PIs) of National Science Foundation (NSF) Advancing Informal STEM Learning (AISL) awards are about to gather and discuss a range of topics — from fundamentals of award budgeting and evaluation to the future of scientific research and funding. They will laugh and argue, inspire and become inspired, share and learn.

This is a brief account of those 72 hours, with a few sketches to remind the folks that were there and to paint a picture for those who were not.

Respectfully submitted,
Beck Tench

Technical Assistance Sessions
On the afternoon of Day 1

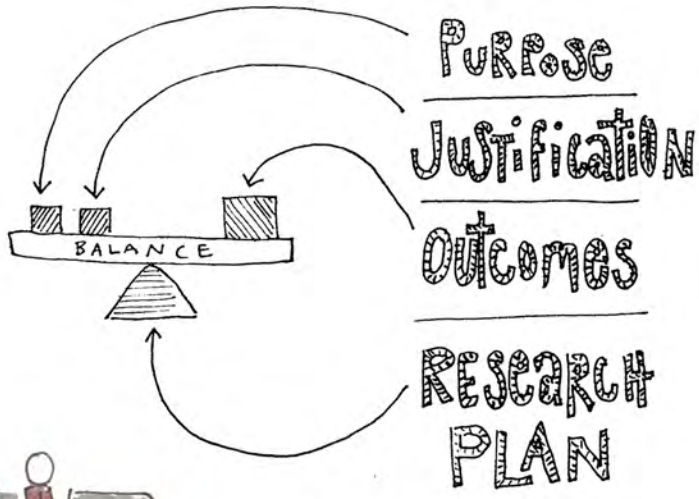
Though the first three sessions of the convening started with the title "Technical Assistance," they were lively and dynamic dialogues due largely to the thoughtful experts who led the discussions. Speakers, who were introduced by CAISE Co-PI ***John Falk***, included ***Edith Gummer***, ***L. Rashawn Farrior***, and ***Kirsten Ellenbogen***. They discussed the changing realities of applying for, managing and measuring successful AISL grants. The attendees met their expertise with enthusiasm, focus and a steady stream of questions.

Each session extended beyond its slated hour and a half as the questions kept coming. Speakers answered with deep knowledge, empathy, and often played matchmaker on the fly by pointing out to PIs in attendance who they knew and who already successfully addressed the issues raised.

It was the first indication that the event was naturally convivial and that many of the attendees were hungry for information and connection with others who might help them make the most of their funding opportunity.

COMMON GUIDELINES

EDITH GUMMER

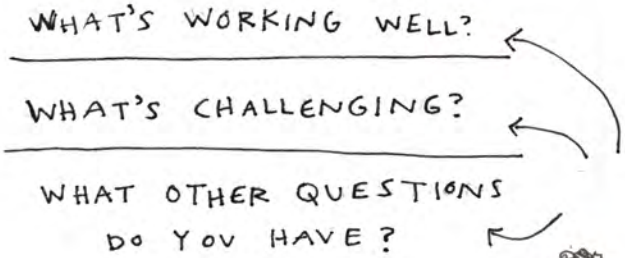


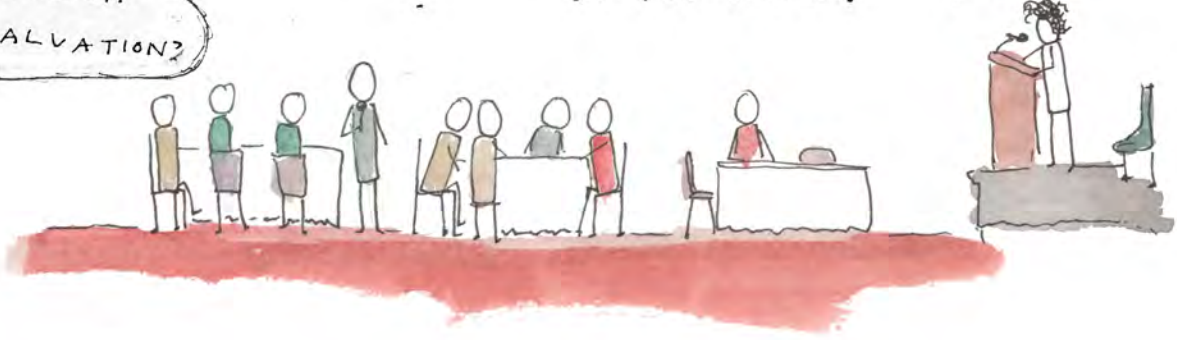
GRANT MANAGEMENT

L. RASHAWN FERRIOR

EVALUATION

KIRSTEN ELLENBOGEN





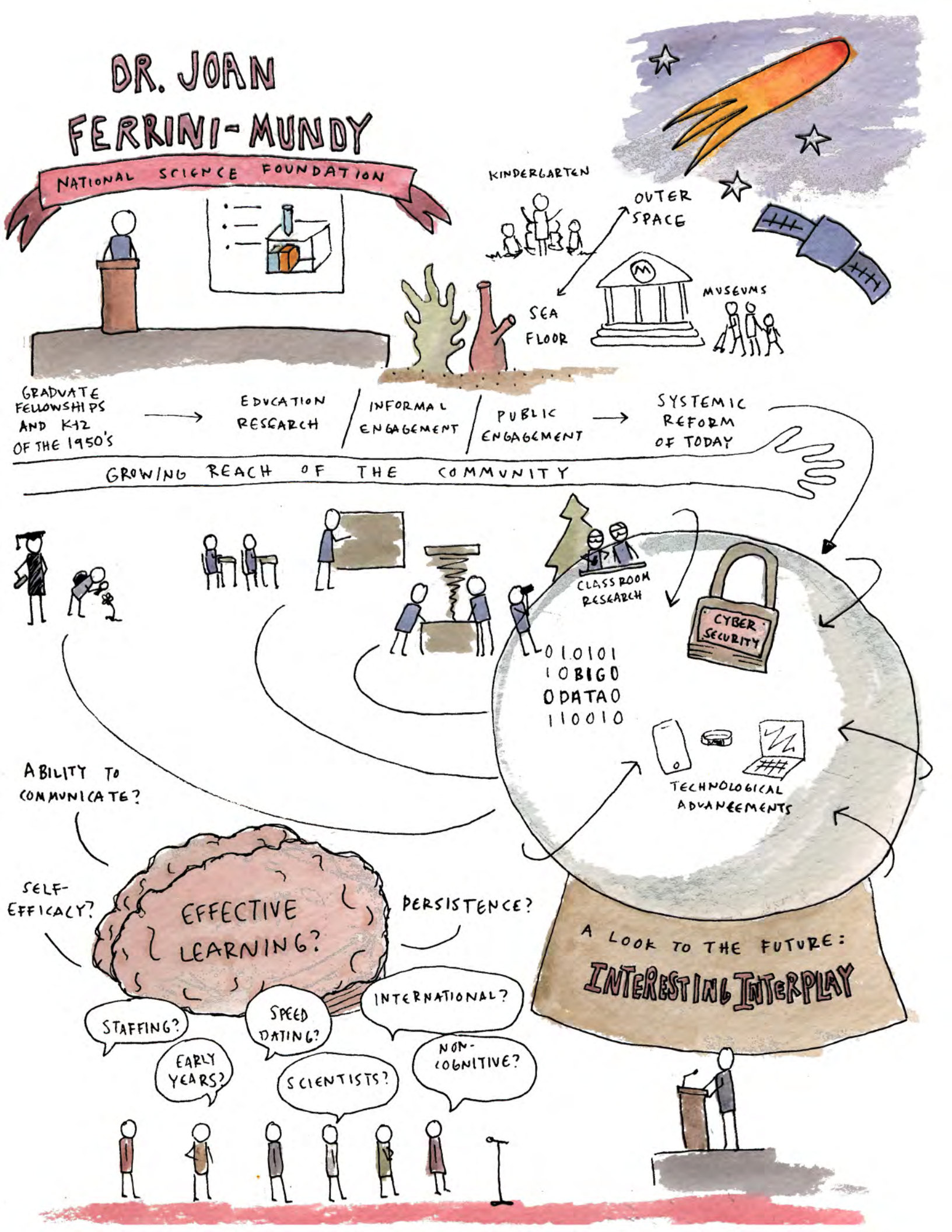
Plenary Session — Dr. Joan Ferrini-Mundy

On the morning of Day 2

The hallways and ballroom were humming with activity bright and early on day two. The meet-and-greet from the night before seemed to have sparked new conversations, and the ballroom was filled to the brim with people bright and eager to begin the day.

After a welcome and short orientation by CAISE PI and Project Director ***Jamie Bell***, ***Dr. Joan Ferrini-Mundy***, Assistant Director for Education and Human Resources at the NSF, kicked off the morning with a plenary session, which was part history lesson and part call-to-action. By giving historical context, she forecasted where NSF funding is going, and underscored how Informal Science Education (ISE) is uniquely situated to help achieve those goals. In summary:

Technology, science and education are simultaneously evolving, and in different ways. The community of scientists, researchers, and learning experts that lead AISL grants are "naturally inclined to meet this evolution with innovative and creative work." Perhaps the greatest challenge will be measurement, as was discussed in depth the previous day during ***Kirsten Ellenbogen's*** evaluation session. Measuring the "hard things" like group behavior, self efficacy and non-cognitive skills, is clearly top of mind for most everyone.

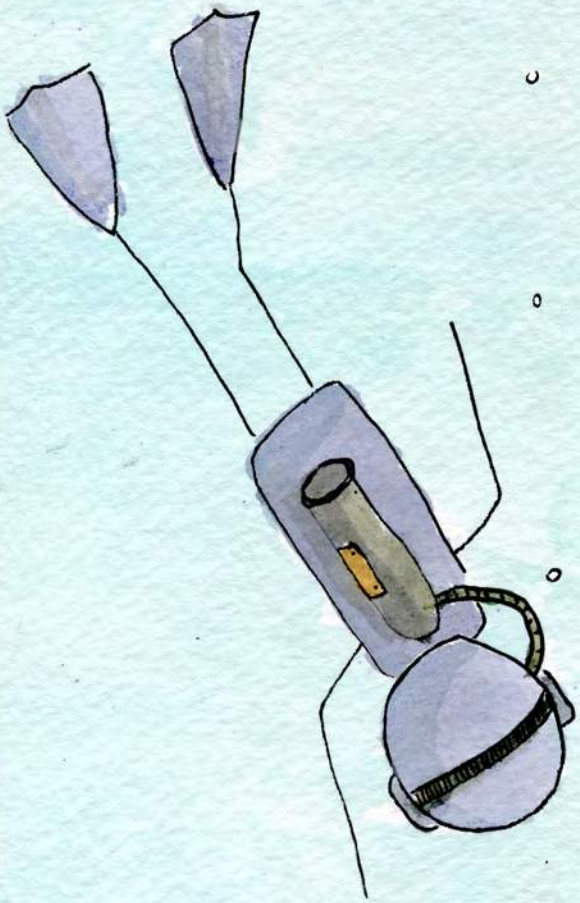

DR. JOAN FERRINI-MUNDY
NATIONAL SCIENCE FOUNDATION
KINDERGARTEN
OUTER SPACE
SEA FLOOR
MUSEUMS
GRADUATE FELLOWSHIPS AND K-12 OF THE 1950's
EDUCATION RESEARCH
INFORMAL ENGAGEMENT
PUBLIC ENGAGEMENT
SYSTEMIC REFORM OF TODAY
GROWING REACH OF THE COMMUNITY
CLASSROOM RESEARCH
CYBER SECURITY
01.0101
10BIG0
0DATA0
110010
TECHNOLOGICAL ADVANCEMENTS
ABILITY TO COMMUNICATE?
SELF-EFFICACY?
EFFECTIVE LEARNING?
PERSISTENCE?
STAFFING?
SPEED DATING?
INTERNATIONAL?
EARLY YEARS?
SCIENTISTS?
NON-COGNITIVE?
A LOOK TO THE FUTURE:
INTERESTING INTERPLAY

Diving Deeper, Looking Forward
Mid-morning on Day 2

Attendees scattered to the wind-tunnels of hotel hallways, finding smaller conference rooms to discuss a range of topics — from broadening participation to connecting with science researchers to measuring learning. Prior to the convening, attendees suggested these topics through a survey and CAISE identified experts from the community to facilitate and document the discussions.

Facilitators used a range of techniques to catalyze generative dialogue — from innovative, complementary presentations starting with provocative questions to group discussions to structured brainstorming sessions. As a whole, the groups were engaged and eager to dive into the issues, though a desire to *do* as well as *discuss* began to emerge.

This theme would re-emerge later in the afternoon poster sessions and in some ways be addressed in the Open Space sessions on the next day.



BROADENING PARTICIPATION IN INFORMAL STEM EDUCATION

CONNECTING WITH SCIENTISTS: WHAT ARE THE NEEDS & UNEXPLORED OPPORTUNITIES FOR ISE?

HOW IS TECHNOLOGY BUILDING NEW AUDIENCES FOR ISE?

ISE CONTRIBUTIONS TO THE STEM WORKFORCE

ISE NETWORKS & INFRASTRUCTURE

LEARNING & LEARNING ENVIRONMENTS: RESEARCH, DESIGN, & IMPLEMENTATION

MEASURING LEARNING ACROSS ISE PROJECTS

MINING THE FIELD: WHAT ARE WE LEARNING?

Poster Sessions
Afternoon on Day 2

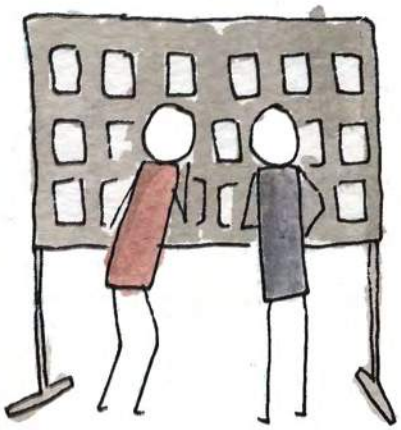
After the morning deep dives and a lunch panel about funding opportunities across federal agencies, participants convened in the poster hall to meet each other and discover the rich array of projects in attendance. Time was split between two "shifts." Half of the attendees presented on their posters while the other half walked around taking in the forest *and* the trees. After an hour, everyone switched roles. Concurrently, folks nominated topics for "Open Space" sessions (as introduced by CAISE Co-PI ***Sue Ellen McCann***) and also played a scavenger-hunt-style Bingo game designed to facilitate interactions around the myriad ways that a group of AISL awards can be sliced — for example, by project type, audience, STEM content, or geography.

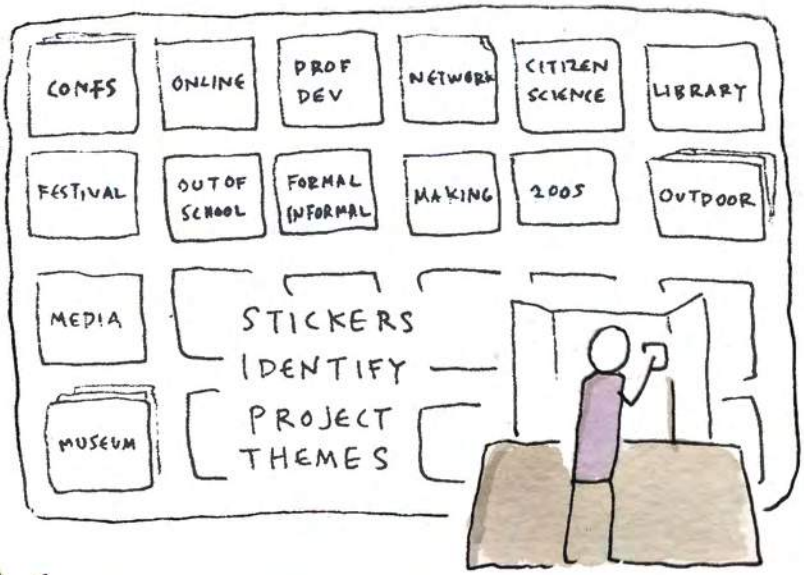
The exhibit hall buzzed with energy and everyone was in good spirits. The challenge for participants seemed to be how to see as many posters as they could within the time allotted. Attendees ran the continuum between first-timers and old-timers. First-timers were wide-eyed and omnivorous, wanting to connect with others and learn as much as possible about everything. Old-timers were more focused and strategic, but also eager to see what's new under the sun. Natural and physical scientists found that there is more research on learning in informal environments than they realized, and experience designers were reminded that for STEM-based professionals, the content is the thing.

AISL/ISE veterans were overheard offering themselves as mentors willing to discuss failures and challenges, and to facilitate open critiques of new proposal ideas. Other conversations revealed attendees' desires to better foster diversity of audiences, to learn from projects that weren't funded, and to have thought-leaders from outside of NSF and the ISE field as part of the discussions.

For everyone in the room, there was a palpable sense of wanting to sustain the momentum of the in-person experience.

OPEN SPACE PROPOSALS





BROADENING PARTICIPATION

BADGES

ALTERNATE REALITY GAMES

WORKFORCE DEVELOPMENT

SCIENTIFIC STORYTELLING

WATER FOR LIFE

SOLAR TECHNOLOGY

LEARNING & LEARNING ENVIRONMENTS

SCI GIRLS

NISENET

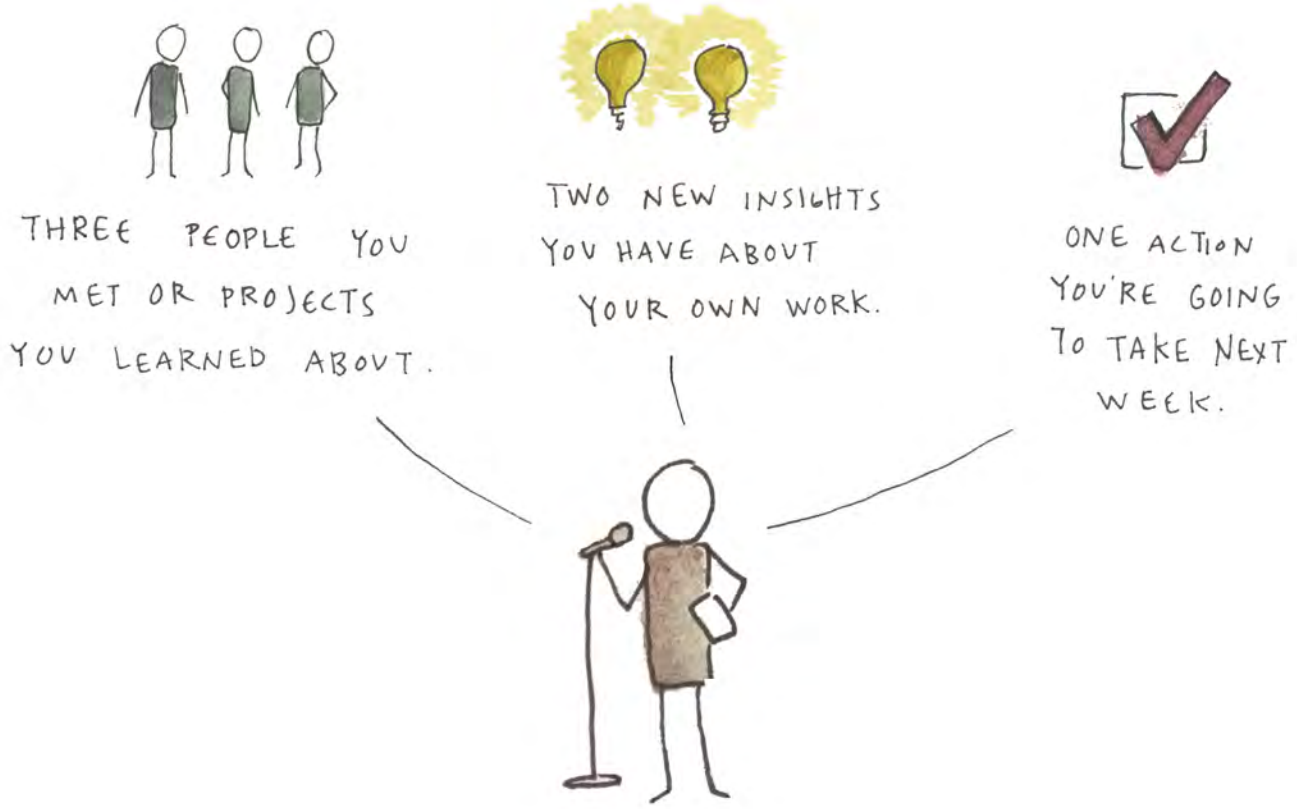
Open Space Sessions
On the morning of Day 3

The ballroom was full and lively on the last morning with no visible signs that folks had yet exhausted their new and continuing conversations.

CAISE Co-PI ***Kirsten Ellenbogen*** revealed the most voted on Open Space session ideas and invited the nominators to pitch their topics. Some topics grew out of and built on the Diving Deeper, Looking Forward sessions from the previous day, while some emerged from side conversations that were now ready for prime time. Overarching themes like evaluation and connecting with scientists remained appealing and worthy of further exploration to many as well. Each group went off to a dedicated space, accompanied by an expert facilitator and plenty of paper to flesh out and document the ideas shared.

The breakout rooms were even livelier than the day before, as discussions begun at various points throughout the meeting gathered further momentum. After reconvening for a lunchtime overview of the current plethora of research agenda development activity across the ISE field led by CAISE co-PI ***Kevin Crowley***, each Open Space facilitator presented crisp, substantive summaries of the issues and next steps that each discussion group identified.

ETHICS & EVALUATION
EXISTING NETWORKS? PARTNERSHIPS?
LIBRARIES AND STEM
MAKERSPACES
OUTCOMES
CULTURAL COMPETENCY
INTERESTING TENSIONS
FUNDING
ADA
BRANDING & MARKETING
EXTENDING ENGAGEMENT
MEDIA, ONLINE AND NEW TECH
DEFINITIONS
THE INTERSECTION OF ART AND SCIENCE
PROCESSES
IDENTITY
CAUSALITY?
MEASURING SUCCESS
SHOESTRING BUDGETS?
CREATIVE APPROACHES?
ISE
SOCIAL SCI
STEM
STEM-ISTS
NON-COGNITIVE SKILLSETS
INTERESTS & NEEDS
SUSTAINABILITY
METHODOLOGIES
BIG RESEARCH QUESTIONS
DIFFERENT WAYS OF KNOWING
INFRASTRUCTURE
LOCAL CHAMPIONS
COMMUNITY OF PRACTICE
STORY-TELLING IS INTEGRAL
BROADENING PARTICIPATION THROUGH MEDIA
CREATING VS. CONSUMING
INQUIRY & NOTICING
NOT ABOUT PLACE, ABOUT PEOPLE
PLACE-BASED EDUCATION
TRUST & RELATIONSHIP BUILDING
LEARNING IN PUBLIC SPACES
WHAT DO WE CALL IT?
TRIPPING OVER STEM
MULTIPLE PERSPECTIVES, MULTIPLE STAKEHOLDERS



Wrap Up and Closing

Early afternoon on Day 3

After a full morning of active thinking and listening, the PI Meeting began winding down. Before attending to remaining business and saying goodbye, NSF AISL Program Officer ***Julie Johnson*** led the participants and conveners in a "3-2-1" reflection activity.

She asked everyone to write down **three** people they met or projects they learned about, **two** new insights they had about their work and **one** action they will take within a week as a follow up to the meeting. Attendees then animatedly shared what they wrote in pairs and compared notes. CAISE and NSF hope that this exercise will help folks remember the useful and generative interactions that they had at the meeting and draw on them for future project development.

With the closing remarks and thank-yous by CAISE Principal Investigator and Project Director ***Jamie Bell***, the meeting crescendoed into a cacophony of last-minute business card exchanges, promises to call or write soon and final goodbye hugs. After seventy-two hours of rich discussions, hundreds of new and old connections made and enough proposal ideas generated and shared for a decade of funding solicitation cycles, participants went out into the late summer D.C. heat, their heads and hearts full.

For comprehensive documentation of the meeting, visit:
informalscience.org/about/about-caise/pi-meetings/nsf-aisl-pi-meeting-2014