Welcome to the 2019 Advancing Informal STEM Learning (AISL) Program Principal Investigators (PI) Meeting.

This 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 aquariums; botanical gardens, and nature centers; universities; libraries; youth, community, and after-school programs; technology, digital media, and gaming organizations; public participation in scientific research, broadcast media, and science communication. Some of you also have active science and engineering research careers.

In addition, colleagues representing other federal and private funding agencies are participating. We want to welcome our colleagues from the Wellcome Trust and the Economic and Social Research Council. Together, we partnered to fund Science Learning+, a set of five US-UK collaborations to strengthen informal STEM learning research and practice. 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 learning and engagement.

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. The AISL program, along with others in EHR, has funded groundbreaking and life-changing work. It is work that has opened up opportunities in STEM to new generations of people, and work that has fundamentally changed what and how we bring science to life for people of all ages and backgrounds. We need to keep pushing the boundaries in the research we fund, especially ensuring that we are on the forefront of educational delivery innovations and new ways of understanding human learning and behavior.

Special thanks for planning and hosting the PI Meeting go to PI and project director Jamie Bell and the Center for Advancement of Informal Science Education (CAISE) team members Rachel Diamond and Melissa Ballard, CAISE co-PIs and task force members, 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,

Karen Mannouglie
Assistant Director
February 11, 2019

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Sincerely,

Karen Menendez
Assistant Director

2415 Eisenhower Avenue | Alexandria, VA 22314
Dear Colleagues,

The Center for Advancement of Informal Science Education (CAISE) welcomes you to the 2019 National Science Foundation (NSF) Advancing Informal STEM Learning (AISL) Program and Science Learning+ Principal Investigator meeting. Since 2008, CAISE has had the privilege and opportunity to bring together the AISL community every couple of years to meet new and old colleagues, share work, discuss common issues and challenges, and hear about current directions in and opportunities for future funding. We also invite perspectives from those whose work can inform and inspire our thinking and help us all to continue to build knowledge through practice, research, and evaluation.

Participants in this meeting are collectively working on 202 NSF AISL-funded projects, representing the rich variety of designed experiences, activities, and settings in which diverse audiences of all ages are learning science, technology, engineering, and math (STEM). We hope that you will embrace this moment to inform, challenge, and learn from each other in ways that will connect and advance the professional fields dedicated to enhancing lifelong STEM engagement.

As a resource center for the AISL Program, CAISE has been developing materials and tools that can help broaden participation in STEM, perform evaluation and measurement, and improve research and practice. We will be sharing throughout the meeting. We welcome your feedback on these, as well as any thoughts you have about how work in our field can be better connected, documented, and disseminated.

CAISE is deeply grateful to NSF, the Wellcome Trust, and the Economic and Social Research Council for their many years of enlightened investment in this work. We thank all attendees for bringing your ideas, expertise, and innovative projects to share with the wider community.

Jamie Bell, CAISE Project Director and Principal Investigator

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CAISE thanks the Kavli Foundation for its commitment to science communication and informal STEM learning and its assistance with the 2019 NSF AISL PI meeting.

WELCOME

Statement on Harassment

The 2019 AISL PI meeting is dedicated to providing a harassment-free experience for everyone in attendance. We do not tolerate harassment of meeting participants in any form. As CAISE is housed at the Association of Science–Technology Centers, we have adapted their conference harassment policy, as shown below.

The code of conduct that follows is part of CAISE’s mission to provide spaces for those who conduct and/or study informal STEM learning and science communication and public engagement activities to come together to address the common challenges, build new professional relationships, and strengthen existing connections. Our world is rich in diversity, and CAISE embraces those differences, including in ability, age, color, ethnicity, race, family or marital status, sex, gender identity and expression, sexual orientation, pregnancy and related medical conditions, language, national origin, political affiliation, religion, socioeconomic status, veteran status, health status, and other dimensions of diversity.

As an attendee at the 2019 AISL PI Meeting, I will:

• Conduct myself with integrity, respect, honesty, and credibility.
• Approach all events in accordance with the highest ethical standards of professionalism and personal conduct.
• Avoid all activities that will cause damage to or discredit to my organization, CAISE, or myself.
• Embrace our diverse community of professionals and learners, and be inclusive of all audiences in my presentations, demonstrations, and conversations.

This code of conduct is in place to protect the safety of all attendees. Contact, language, or imagery of a violent, threatening, sexual, discriminatory, demeaning, or disruptive nature is not appropriate for any meeting component, including keynotes, sessions, networking and evening events, Twitter, and other online media.

Attendees who are asked to stop any harassing or discriminatory behavior are expected to comply immediately. CAISE staff may take action to redress any situation that is disrupting the meeting or making the environment unsafe for participants, including asking participants to leave the meeting.

This harassment policy is open to suggestions for improvement and refinement. The above policy also aligns with NSF 19-1 Proposal & Award Policies & Procedures Guide (PAPPG). Please let a CAISE staff member know if you have any comments, or email caise@informalscience.org.

SPONSORS
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ABOUT CAISE

CAISE works to build and advance the informal STEM education (ISE) field by providing infrastructure, resources, and connectivity for educators, researchers, evaluators, and other interested stakeholders. We seek to characterize, highlight, and connect quality, evidence-based informal STEM learning work—work that is supported by a diversity of federal, local, and private funders.

Through InformalScience.org, we provide access to an ever-growing repository of more than 8,000 resources, including project descriptions, research literature, evaluation reports, and other documentation. In addition to hosting the AISL PI meetings, CAISE convenes task forces and workshops that are designed to facilitate discussion and identify needs and opportunities for informal STEM learning researchers and practitioners.

CAISE has a core staff based at the Association of Science–Technology Centers in Washington, D.C., with co-Principal Investigators at academic institutions and other organizations across the United States. If you have questions, concerns, or kudos during or after the meeting, please let us know!

CAISE STAFF

Jamie Bell  
Project Director and  
Principal Investigator

Rachel Diamond  
Project Manager

Melissa Ballard  
Communications and Community Manager

Michelle Choi  
Program Manager  
University of Washington

CAISE CO-PRINCIPAL INVESTIGATORS

Bronwyn Bevan  
University of Washington

Cecilia Garibay  
Garibay Group

Kevin Crowley  
University of Pittsburgh

Martin Storksdieck  
Oregon State University

New Resources

Our 2016 NSF award allowed CAISE to begin exploring opportunities for synergy among those who conduct and/or study informal STEM learning, science communication (SciComm), and public engagement activities.

We collected data about the state of connectivity across the fields and formed three task forces focused on addressing common challenges. Below are our most recent publications and news.

1 Broadening Perspectives on Broadening Participation in STEM  |  bit.ly/broadening-perspectives-stem
To help you reflect on and strengthen efforts to broaden participation in STEM, the CAISE Broadening Participation in STEM Task Force developed a suite of professional development tools. Use them to plan and lead reflective discussions about current practices, with an eye to developing goals, strategies, and priorities that can make ISE and science communication work more inclusive.

2 Interview Series on STEM Identity, Interest, and Engagement  |  bit.ly/eval-measure
As these three constructs have become increasingly important in ISE and science communication, the CAISE Evaluation and Measurement Task Force interviewed experts to provide professionals in the field with an overview of how the constructs are being designed for and measured.

3 Baseline Studies of Connectivity  |  bit.ly/baseline-studies
CAISE conducted a survey of leading ISE and science communication researchers and practitioners and a bibliometric analysis of selected research journals to gain a clearer picture of where the fields diverge and converge.

4 Access Your Favorite Journals  |  bit.ly/ebsco-access
Members of InformalScience.org have free access to the full text of more than 2,000 journals within science education and the learning sciences, via EBSCO’s Education Source database. These journals include Science Communication, Curator: The Museum Journal, and the Journal of Research in Science Teaching.

Subscribe to CAISE’s Monthly Newsletter to stay connected to ideas, knowledge, and conversations within the ISE and science communication fields.

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MEETING GOALS

In cooperation with the AISL Program, CAISE has designed the meeting so that attendees can:

1. Discuss current topics and approaches in ISE and the issues, challenges, and opportunities that arise in designing, researching, and evaluating this work, across settings and sectors, during the concurrent sessions.
2. Share the problems of practice and theoretical foundations of their project work with colleagues and other stakeholders, and experience the richness and diversity of the AISL portfolio during the project showcase.
3. Be informed and inspired by talks and presentations by field leaders, funders, and advisory and expert committee members about STEM education, communication, and engagement during the plenary sessions.
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We’d like your feedback on the PI Meeting. At the end of the meeting, please complete Inverness Research’s questionnaire: www.surveymonkey.com/r/2019_AISL_PI

AGENDA

MONDAY, FEBRUARY 11

Registration is open | Second Floor of Westin Alexandria

Science Learning+ PIs Only

8:30 a.m.–1:00 p.m. | Curie
Science Learning+ (SL+) Meeting
Invitation only. Breakfast and lunch provided

Pre-Meeting Sessions
Please note that lunch will not be provided.

1:00–1:15 p.m. | Edison Ballroom
Welcome from CAISE and NSF

1:15–2:15 p.m. | Edison Ballroom
Presentation: Grant and Fiscal Management
Daniel McEnrue and Rashawn Farrior, NSF Division of Grants and Agreements

2:20–3:15 p.m. | Edison Ballroom
Presentation: NSF Opportunities, Directions, and Big Ideas
AISL and Division of Research on Learning in Formal and Informal Settings Program Officers

3:15–3:30 p.m. | Edison Ballroom
Refreshment Break

3:30–4:30 p.m. | Edison Ballroom
Panel Discussion: Key Issues in ISE Evaluation
In this roundtable session, a group of experienced evaluators will lead discussions with PIs about key evaluation issues and current trends pertinent to a range of informal STEM education settings/environments.
Organizer: Cecilia Garibay, Garibay Group
Panelists: Sue Allen, Maine Mathematics and Science Alliance; Archana Kannan, Stanford University; Karen Peterman, Karen Peterman Consulting; Katrina Bledsoe, Education Development Center

4:30 p.m. | Edison Ballroom
Adjourn

5:00–6:30 p.m. | Trademark Restaurant bar area of the Westin Alexandria
Informal Gathering for First-Time AISL and SL+ PIs
Join CAISE co-PIs and staff in the Trademark Restaurant bar area of the Westin Alexandria for networking and relationship building.

Dinner is on your own. See the neighborhood guide on page 26 for restaurants in walking distance.
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# Agenda

## Tuesday, February 12

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>7:45 a.m.</td>
<td>Registration is open</td>
</tr>
<tr>
<td>8:15 a.m.</td>
<td>Networking Breakfast</td>
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<tr>
<td>9:00-9:30 a.m.</td>
<td>Welcome and Morning Plenary</td>
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<tr>
<td></td>
<td>Jamie Bell, CAISE</td>
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<td>Evan K. Heit, Division Director for NSF Division of Research on Learning in Formal and Informal Settings</td>
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<tr>
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<td>Sylvia M. James, Deputy Assistant Director for NSF Directorate for Education &amp; Human Resources</td>
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<tr>
<td>9:30-9:50 a.m.</td>
<td>Introduction to the Day</td>
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<td>Overview of the agenda, Jamie Bell, CAISE</td>
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<td>Interactive introductions, Bronwyn Bevan, University of Washington</td>
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<tr>
<td>9:50-10:00 a.m.</td>
<td>Transition to Concurrent Sessions</td>
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<tr>
<td>10:00-11:15 a.m.</td>
<td>Concurrent Sessions, Round 1</td>
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<td></td>
<td>Small breakout sessions themed around cross-cutting topics and issues reflected in the current NSF AISL portfolio of projects</td>
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<tr>
<td></td>
<td>See page 13 for descriptions and locations</td>
</tr>
<tr>
<td>11:15-11:30 a.m.</td>
<td>Break and Transition Back to Edison Ballroom</td>
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<tr>
<td>11:30 a.m.-12:30 p.m.</td>
<td>Keynote Remarks: Cultivating Learning</td>
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<td>Identities in the Context of Social Inequality</td>
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<td>Dr. Na’Ilah Suad Nasir is the sixth President of the Spencer Foundation, which supports research about education. She was a faculty member at the University of California, Berkeley, from 2008 to 2017, and she served as Vice Chancellor of Equity and Inclusion at UC-Berkeley from November 2015. Dr. Nasir earned her PhD in Educational Psychology at UCLA in 2000 and was a member of the faculty in the School of Education at Stanford University from 2000 to 2008. Her work focuses on issues of race, culture, learning, and identity. She is the author of Racialized Identities: Race and Achievement among African American Youth (2011) and has published numerous scholarly articles. Dr. Nasir is a member of the National Academy of Education and a fellow of the American Educational Research Association (AERA). In 2016, she received the AERA Division G Mentoring Award.</td>
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<td>12:30-1:30 p.m.</td>
<td>Working Lunch</td>
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<td>Small-group discussions on the role of ISE in broadening participation in STEM</td>
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<td>1:30-2:45 p.m.</td>
<td>Concurrent Sessions, Round 2</td>
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<td>Small breakout sessions themed around cross-cutting issues reflecting the current NSF AISL portfolio of projects</td>
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<tr>
<td>2:45-3:00 p.m.</td>
<td>Refreshment and Networking Break</td>
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<td>3:00-3:45 p.m.</td>
<td>Flash Talks: Relevant Reports for the STEM Engagement Community</td>
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<td>Learning Through Citizen Science: Enhancing Opportunities by Design</td>
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<td>Encountering Science in America</td>
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<td>Federal STEM Education 5-Year Strategic Plan</td>
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<td>3:45-4:00 p.m.</td>
<td>Instructions on Project Showcase</td>
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<tr>
<td>4:00-4:55 p.m.</td>
<td>Prepare for Project Showcase and Pre-Showcase Break</td>
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<tr>
<td></td>
<td>Find your assigned room, set up your poster, and take a break</td>
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<tr>
<td>5:00 p.m.</td>
<td>Project Showcase and Reception</td>
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<td>See page 18 for more details</td>
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<td></td>
<td>5:00-5:30 p.m.: Affinity Groups</td>
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<td></td>
<td>5:30 p.m.: Refreshments available</td>
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<tr>
<td></td>
<td>5:45-6:15 p.m.: Rotation 1 of Project Presentations</td>
</tr>
<tr>
<td></td>
<td>6:30-7:00 p.m.: Rotation 2 of Project Presentations</td>
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  Small breakout sessions themed around cross-cutting topics and issues reflected in the current NSF AISL portfolio of projects
  See page 13 for descriptions and locations

11:15–11:30 a.m.

11:30 a.m.–12:30 p.m. | Keynote Remarks: Cultivating Learning | Edison Ballroom
  Identities in the Context of Social Inequality
  Dr. Na'ilah Suad Nasir, the Spencer Foundation
  Dr. Na’ilah Suad Nasir is the sixth President of the Spencer Foundation, which supports research about education. She was a faculty member at the University of California, Berkeley, from 2008 to 2017, and she served as Vice Chancellor of Equity and Inclusion at UC-Berkeley from November 2015. Dr. Nasir earned her PhD in Educational Psychology at UCLA in 2000 and was a member of the faculty in the School of Education at Stanford University from 2000 to 2008.
  Her work focuses on issues of race, culture, learning, and identity. She is the author of Racialized Identities: Race and Achievement among African American Youth (2011) and has published numerous scholarly articles. Dr. Nasir is a member of the National Academy of Education and a fellow of the American Educational Research Association (AERA). In 2016, she received the AERA Division G Mentoring Award.

12:30–1:30 p.m. | Working Lunch | Edison Ballroom
  Small-group discussions on the role of ISE in broadening participation in STEM

1:30–2:45 p.m. | Concurrent Sessions, Round 2 | Breakout Rooms
  Small breakout sessions themed around cross-cutting issues reflecting the current NSF AISL portfolio of projects
  See page 16 for descriptions and locations

2:45–3:00 p.m. | Refreshment and Networking Break

3:00–3:45 p.m. | Flash Talks: Relevant Reports for the STEM Engagement Community | Edison Ballroom
  Learning Through Citizen Science: Enhancing Opportunities by Design
  Tina Phillips, Cornell Lab of Ornithology
  Encountering Science in America
  Erica Kimerling, American Academy of Arts and Sciences
  Federal STEM Education 5-Year Strategic Plan
  Rob Semper, Exploratorium

3:45–4:00 p.m. | Instructions on Project Showcase | Edison Ballroom

4:00–4:55 p.m. | Project Showcase and Pre-Showcase Break
  Find your assigned room, set up your poster, and take a break

5:00 p.m. | Project Showcase and Reception | Second Floor of Westin Alexandria
  See page 18 for more details
  Dinner is on your own. See the neighborhood guide on page 26 for restaurants in walking distance.
## AGENDA

### WEDNESDAY, FEBRUARY 13

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:00 a.m. – 1:00 p.m.</td>
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<tr>
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<td>9:00–9:10 a.m.</td>
<td>Introduction to Day and Goals</td>
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<td>Kevin Crowley, University of Pittsburgh</td>
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<td>9:10–10:25 a.m.</td>
<td>Interactive Session: Tools You Can Use to Expand Your Efforts to Broaden Participation in STEM</td>
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<td>CAISE co-PIs and Broadening Participation Task Force Members</td>
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<tr>
<td>10:25–10:45 a.m.</td>
<td>Break</td>
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<tr>
<td>10:45 a.m. – 12:00 p.m.</td>
<td>Interactive Session: Exploring Assessments for Impact in ISE and Science Communication</td>
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<td>Discuss a session topic that you would like to dive into further with your colleagues</td>
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<tr>
<td>2:15–2:30 p.m.</td>
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<tr>
<td>2:30–3:00 p.m.</td>
<td>Sharing, Next Steps, and Closing Remarks</td>
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<td>Jamie Bell, CAISE</td>
</tr>
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<td>3:00 p.m.</td>
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Documentation of the 2019 AISL PI meeting, along with past meetings, will be posted here: informalscience.org/about-caise/pi-meetings

### SESSIONS

#### Concurrent Sessions

These sessions are intended to catalyze thinking and discussions that can continue beyond the meeting and generate new ideas for future work and collaborations. The topics were identified through a process that included a September 2018 questionnaire sent to AISL PIs, a review of the current AISL program portfolio of projects, and input from NSF program directors. Each concurrent session was organized by an AISL PI, who invited AISL-funded colleagues to co-facilitate.

#### TUESDAY MORNING – 10:00-11:15 A.M.

**Addressing Current Socio-Scientific Issues #1: Implications for Science Literacy** | **Curie**
---|---
**Organizer:** | Billy Spitzer, New England Aquarium
Many ISE and science communication organizations are seeking to broaden and deepen their impact, especially with respect to equity and inclusion. Innovative and inspiring projects have been developed over the years, but many come and go with funding. Recently, NSF has invested in several long-term capacity-building efforts meant to effect change at the institutional and leadership levels in ways that can advance sustainable progress in broadening participation. In this session, we discuss capacity building needs within ISE institutions, among collaborating ISE institutions, and beyond the walls of ISE institutions. In group discussions, we will identify additional capacity-building issues and needs that remain unaddressed.

**Building Institutional Capacity and Change** | **Curie**
---|---
**Organizer:** | Bronwyn Bevan, University of Washington
The need for asset- and need-based approaches to science communication and literacy have been identified and articulated in two reports from the National Academies: Communicating Science Effectively (2017) and Science Science Literacy: Concepts, Contexts and Consequences (2016). In light of these developments, how are institutions and individuals in ISE and science communication dealing with controversial or socio-scientific topics? How are we thinking about our roles and professional identities, given the finding that more and better information alone is not sufficient to facilitate societal dialogue? In this session, participants will have the opportunity to hear about some examples of evidence-informed practice, and to discuss and consider the relevance to their own work.
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TUESDAY MORNING – 10:00-11:15 A.M.

Designing for Equitable Early and Family STEM Learning | EDISON F
ORGANIZER: Carrie Tzou, University of Washington - Bothell
What is the current state of research and practice around early and family STEM learning, and what are the compelling and challenging issues that those working with these audiences are facing? What conversations should we be having across early STEM learning and family STEM learning? In this session, we will explore what new types of partnerships, theories of learning, and modes and models of we need in order to design just and equitable experiences and environments for all learners.

Designing for Science in Natural Settings | WHITNEY
ORGANIZER: Martha Merson, TERC
The possibilities for engaging public audiences in STEM learning in natural settings are numerous, with potential impacts on interest, curiosity, awe, knowledge gain, stewardship, and STEM identity. However, these effects are often difficult to quantify. What do we know about learning in and from authentic settings for scientific research, such as parks, field stations, and marine labs? Participants in this session 1) meet others, exchanging recommendations for existing resources; 2) describe how individual projects will contribute to the knowledge base; and 3) envision how findings will accrue and accumulate, affecting the sum total of what is known about learning in outdoor settings in two years.

Reaching New Audiences in Unexpected Places | EDISON E
ORGANIZER: Mark Rosin, Guerilla Science
Informal STEM learning continues to blossom and thrive in increasingly diverse settings. How can we present science in ways that capture the attention, time, and interest of people engaged in everyday and non-science activities, from muddy music festival fields and deaf discos to street installations, and unusual digital channels? In this session we will lead a discussion of best practices, the challenges of defining and measuring impact, and defining a forward-looking research agenda for the field.

Supporting Gender Equity in STEM, ISE, and Science Communication | WRIGHT
ORGANIZER: Karen Peterson, National Girls Collaborative Project
Current models of gender inclusion—specifically those aimed at engaging girls and women in STEM—are breaking new ground. We’ll look at the specific ways these models are contributing to advancing gender equity in ISE and how these strategies and program elements can be adapted by others. Participants will engage in both discussion and visioning to identify how the AISL community can address gender imbalances in not only who participates, but who will ultimately lead STEM education and engagement in the future.

Technology Enhanced Informal STEM Learning | BANNEKER
ORGANIZER: H. Chad Lane, University of Illinois, Urbana-Champaign
The use of advanced technologies (AR/VR, visualization, AI, games, etc.) in informal learning contexts can greatly enhance learning experiences, but it also brings new challenges. This session will address questions related to the design, deployment, and study of technology use by practitioners and researchers across various informal learning contexts. How are these approaches being used, with which topics, and for which audiences? What are the opportunities for practice and research going forward? Panels will focus on the potential of advanced learning technologies to improve informal STEM learning, research and evaluation, and the unique challenges that technology-based solutions present.

Teens and Community Engagement: Reimagining the Future | BELL
ORGANIZER: Angela Calabrese Barton, Michigan State University
Teens from historically underrepresented groups engage with STEM across a variety of programs as they explore, understand, and transform their local communities in equitable and consequential ways. What are teens learning in these STEM programs, and are they able to transform that knowledge into something of personal value and use? Researchers and practitioners working in both community-based and design-based informal science learning settings, will share insights and tools from their AISL projects to foster dialogue on these questions.
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TUESDAY AFTERNOON – 1:30–2:45 P.M.

Addressing Current Socio-Scientific Issues #2: Climate Change | EDISON G

Billy Spitzer, New England Aquarium
The challenges of engaging the public with socio-scientific or controversial topics vary depending on the issues and the audiences being addressed. Using the specific lens of climate change, how can cognitive and social science research inform the practice in informal STEM and science communication? In this session, participants will have the opportunity to learn some of the key cognitive/social science research findings relevant to public engagement in climate change; hear how this research has been put into practice in diverse ISL settings; reflect and discuss how this knowledge could be applied in their own work; and identify potential future research needs.

Designing for Computational Thinking in Informal STEM Learning Settings, Activities, and Experiences | EDISON E

Mike Horn, Northwestern University
Computational thinking is being fostered in informal STEM learning settings, activities, and experiences. Questions and issues that may arise in the process include broadening participation in computing through informal learning experiences; creating novel forms of engagement and exploration; conceptualizing computational thinking / literacy in out-of-school spaces; and thinking about the intersection of computing and arts, science, and humanities in informal learning. This panel will discuss goals, challenges, and opportunities in fostering computational literacy and computational thinking across a variety of informal learning settings and experiences.

Equity and Inclusion Theory: Integrating STEM and Social Justice Perspective | BELL

Edna Tan, University of North Carolina at Greensboro
Theorizing science engagement through a justice-oriented perspective changes what we notice, design and document in science communication/ISE. What are the ways in which STEM education researchers across informal settings frame issues of equity and justice? What kinds of research methodologies and partnerships with communities attend to dynamics pertinent to research centered on equity, justice and STEM engagement? This session invites participants to consider social justice-oriented perspectives in STEM research, including theoretical framing, methodological considerations, the nature of partnerships with communities, including tensions, construands, and considerations.

Learning about STEM in Rural Places | WHITNEY

Jan Mokros, Science Education Solutions
Collaboration and knowledge sharing among projects engaged in rural STEM work can help situate the work in an ecosystem perspective that encompasses informal and formal education, childhood through adult education; and economic development, as well as family and community education. Panelists in this session will share effective ways of building on rural communities’ strengths and addressing their challenges and will facilitate a discussion about the diversity of rural communities and the places in these communities where STEM is taking root.

Public Participation In Scientific Research (PPSR) / Citizen Science as a Force for Change | CURIE

Heidi Ballard, University of California - Davis
PPSR / “citizen science” presents opportunities for authentic science engagement and science learning. Employing this approach in a more than cursory way raises fundamental questions about who determines what science is being done and for what purpose. How can addressing these questions, and engaging communities at the outset, create opportunities for new forms of science learning and new models of scientific research? This session will involve a discussion of these questions and others.

Supporting Scientists in Outreach and Engagement through Their Broader Impacts Work | EDISON F

Susan Renoe, University of Missouri
Scientists are increasingly expected to include the public in their research, in part to fulfill the NSF Broader Impacts criterion but also to serve as a first contact and authentic voice for science. This session will explore how the ISE community works with established and emerging scientists to develop their public engagement skills—including how institutions incentivize public engagement by researchers—and will highlight programs and resources available to researchers. The interactive session will also discuss how scientists can develop and articulate an “impact identity” that encompasses both their research topics and personal characteristics/experiences that will make their public engagement more authentic.

Understanding Interest and Identity as Outcomes in Informal Science Learning and Science Communication | WRIGHT

Martin Storksdieck, Oregon State University
Over the last 18 months, the CAISE Evaluation and Measurement Task Force has met to explore key constructs that ISE and science communication practitioners and researchers have identified as goals for learning and measuring in settings and experiences. This session will provide an overview of multiple perspectives on STEM identity and interest and share resources that are useful for developing projects and designing measurement strategies.

What Do We Mean When We Talk About Transmedia? | BANNEKER

Ed Finn, Arizona State University
Audiences today are increasingly conversant with entertainment, advertising, and games that jump across contextual and media boundaries. When informal STEM and science communication experts talk about transmedia, what are we really talking about? This panel will establish a common language and baseline understanding of how social media, online communities, and public engagement intersect with transmedia. Panelists will share their experiences with transmedia research and engagement, discuss emerging opportunities and challenges, identify shared foundations and best practices, and explore promising directions for future research.

NSF AISL PI MEETING 2019
SECTIONS

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**PROJECT SHOWCASE**

**Tuesday**

The Project Showcase is an opportunity to meet colleagues, share your work, receive feedback on particular issues related to your work from colleagues in ISE and science communication, and gain a sense of the richness of the NSF AISL portfolio.

Your assigned affinity group, location, and presentation rotation assignment will be in a separate, printed Project Showcase Guide. CAISE will make these available Tuesday afternoon February 12.

**PART 1: AFFINITY GROUPS | 5:00–5:30 P.M.**

These small-group conversations will allow you to get to know each other’s projects and challenges in a focused setting. We hope this interaction will seed useful conversations!

- Once everyone in your group has arrived, start by going around in a circle with brief introductions. Try giving a two-minute “elevator speech” that communicates the focus of your project, and the question, challenge, or claim you want to propose to your group.
- Any remaining time can be used as the group sees fit.

**PART 2: SHOWCASE ROTATIONS | 5:45–6:15 P.M. AND 6:30–7:00 P.M.**

- Next, all attending projects will showcase their work via two 30-minute rotations (with time for transition). If you are in group 1, you’ll need to be ready at 5:45 p.m.—so quickly grab some refreshments, then head to your showcase space. If you are in group 2, make sure you’re ready at your showcase space by 6:30 p.m.
- If you are not representing an AISL or SL+ project you are free to discover and engage throughout the showcase time. The Project Showcase Guide can be used to locate projects you’d like to explore.

**NEED TO PRINT HANDOUTS?**

Visit the FedEx Office Print & Ship Center at 2241 Eisenhower Ave. (6-minute walk from the Westin). Additionally, the hotel may be able to accommodate small requests. Unfortunately, CAISE is unable to make copies for you on site.

**AFTER THE MEETING**

- Don’t want to take your poster home? AISL Program Director Ellen McCallie will gladly take them for use at NSF-related events—look for the drop-off box near the meeting registration table!
- Update your project page on InformalScience.org. We encourage you to upload a PDF of your poster and/or add the URL of your digital representation. Make sure you are logged into the website, and then click “Submit a Resource”. If you experience any difficulties, please email librarians@informalscience.org.

**OPEN SPACE SESSIONS**

**Wednesday**

Open spaces offer meeting participants the opportunity to nominate discussion topics in informal STEM learning and science communication. Some attendees may arrive with ideas in mind. For others, topics of interest and importance may emerge during a pre-meeting or concurrent session or through interactions with colleagues. Open space sessions are a time to continue to discuss issues and challenges with your colleagues on Wednesday afternoon (1:00–2:15 p.m.).

**HOW ARE OPEN SPACE TOPICS NOMINATED AND SELECTED?**

Near the meeting registration table, there will be a board where attendees can suggest topics and vote on ones they would like to discuss.

If you wish to nominate a topic, please complete a nominating form and post it to the open space sessions board. You may nominate as many sessions as you like. Please note that while you do not need to lead the session you nominate, you will be responsible for identifying a facilitator if the topic is chosen.

Meeting attendees will be able to nominate topics for open space sessions starting Tuesday morning, through the end of the Project Showcase. Please don’t wait until the end of the day! Throughout Tuesday, meeting attendees can vote on their favorite Open Space topics by putting a stickie dot on the nominating form. The longer your nominated topic is posted, the more time your colleagues will have to vote for your open space idea.

**ANNOUNCEMENT OF THE WINNING SESSION TOPICS**

The eight most popular session topics and their locations will be announced and posted on Wednesday morning. Nominators of the chosen sessions will have the opportunity to pitch their sessions to their fellow attendees at lunch on Wednesday.

The process will be explained in detail during the plenary sessions on Tuesday, and CAISE staff will be available throughout the meeting to help with the process.
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- If you are not representing an AISL or SL+ project you are free to discover and engage throughout the showcase time. The Project Showcase Guide can be used to locate projects you’d like to explore.

**NEED TO PRINT HANDOUTS?**

Visit the FedEx Office Print & Ship Center at 2241 Eisenhower Ave. (6-minute walk from the Westin). Additionally, the hotel may be able to accommodate small requests. Unfortunately, CAISE is unable to make copies for you on site.

**AFTER THE MEETING**

- Don’t want to take your poster home? AISL Program Director Ellen McCallie will gladly take them for use at NSF-related events—look for the drop-off box near the meeting registration table!
- Update your project page on InformalScience.org. We encourage you to upload a PDF of your poster and/or add the URL of your digital representation. Make sure you are logged into the website, and then click “Submit a Resource”. If you experience any difficulties, please email librarians@informalscience.org.

**OPEN SPACE SESSIONS**

**Wednesday**

Open spaces offer meeting participants the opportunity to nominate discussion topics in informal STEM learning and science communication. Some attendees may arrive with ideas in mind. For others, topics of interest and importance may emerge during a pre-meeting or concurrent session or through interactions with colleagues. Open space sessions are a time to continue to discuss issues and challenges with your colleagues on Wednesday afternoon (1:00–2:15 p.m.).

**HOW ARE OPEN SPACE TOPICS NOMINATED AND SELECTED?**

Near the meeting registration table, there will be a board where attendees can suggest topics and vote on ones they would like to discuss.

If you wish to nominate a topic, please complete a nominating form and post it to the open space sessions board. You may nominate as many sessions as you like. Please note that while you do not need to lead the session you nominate, you will be responsible for identifying a facilitator if the topic is chosen.

Meeting attendees will be able to nominate topics for open space sessions starting Tuesday morning, through the end of the Project Showcase. Please don’t wait until the end of the day! Throughout Tuesday, meeting attendees can vote on their favorite Open Space topics by putting a stickie dot on the nominating form.

The longer your nominated topic is posted, the more time your colleagues will have to vote for your open space idea.

**ANNOUNCEMENT OF THE WINNING SESSION TOPICS**

The eight most popular session topics and their locations will be announced and posted on Wednesday morning. Nominators of the chosen sessions will have the opportunity to pitch their sessions to their fellow attendees at lunch on Wednesday.

The process will be explained in detail during the plenary sessions on Tuesday, and CAISE staff will be available throughout the meeting to help with the process.
See the Project Showcase Guide for attendees’ AISL project information and contact details.
## PARTICIPANT LIST

### A-De

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tr>
<td>Jennifer Adams</td>
<td>University of Calgary</td>
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<td>Tom Akiva</td>
<td>University of Pittsburgh</td>
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<td>Rashada Alexander</td>
<td>National Institutes of Health</td>
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<td>Sue Allen</td>
<td>Main Mathematics and Science Alliance</td>
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<td>Katherine Allen</td>
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<td>Joelle Alley</td>
<td>Earth Team</td>
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<td>Gingras Andrea</td>
<td>Inner Space Center, University of Rhode Island</td>
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<td>Louise Archer</td>
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<td>Monica Arkin</td>
<td>Child Trends</td>
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<tr>
<td>Tatuleni Asino</td>
<td>Oklahoma State University</td>
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<tr>
<td>Jennifer Atkins</td>
<td>Mains Mathematics &amp; Science Alliance</td>
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<tr>
<td>Jeremy Babendre</td>
<td>SciTech Institute</td>
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<tr>
<td>Heidi Ballard</td>
<td>University of Iowa</td>
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<td>Susan Assouline</td>
<td>University of Iowa</td>
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<tr>
<td>Brenda Carpenter</td>
<td>NSF Albert Einstein Distinguished Educator Fellow</td>
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<td>University of Nebraska-Lincoln</td>
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<td>Imran Khan</td>
<td>Wistron Trust</td>
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<td>Erica Klimminger</td>
<td>Annenburg Academy of Arts and Sciences</td>
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<td>Rebecca Kipling</td>
<td>Museum of Science, Boston</td>
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<td>Marda Kin</td>
<td>EinArts Connections</td>
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<td>Eve Klein</td>
<td>Institute for Learning Innovation</td>
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<td>Kim Koin</td>
<td>Chicago Children's Museum</td>
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<td>Elizabeth Kollmann</td>
<td>Museum of Science, Boston</td>
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<td>Michelle Kortenar</td>
<td>Scientist</td>
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<td>Anita Krishnamurthi</td>
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<td>Maker Trust</td>
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<tr>
<td>Kielann LaConte</td>
<td>National Center for Instruction Learning/Space</td>
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<td>Kathy Fallon Lambert</td>
<td>Science Impact Group</td>
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<td>Susan Land</td>
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<td>Ashley Landrum</td>
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<td>H. Chad Lane</td>
<td>University of Illinois, Urbana-Champaign</td>
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<td>Sonja Latimore</td>
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<td>Lisa Leombruni</td>
<td>BRICK School, U.C.</td>
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<td>Marc Lesser</td>
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<td>James Lester</td>
<td>North Carolina State University</td>
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**NSF AISL PI MEETING 2019**
PARTICIPANT LIST

Le-Sh

Brady Lewenstein Cornell University
Emily Lindsay La Brea Tar Pits and Museum
Breanne Litts Utah State University
Mart Louw Carnegie Mellon University
LouAnn Lyon ETR
Brian Magerko Georgia Tech / Earsketch
Ru Mahoney Jackson Hole WILD
Andrew Marches University of Edinburgh
Lesley Markham Association of Science-Technology Centers
Rabiah Mayas Northwestern University
Michael Mayhew Science Education Solutions
Sue Ellen McCann KQED
Dale McCready Discovery Center at Murfree Spring
Megan Mc Kinley Boston College
Tom McKinley The Finding Group
Emily McLeod Techbridge Girls
Shannon McManimon SUNY New Paltz
Katherine McMillan Celp
New Hall of Science
Sunshine Menezes Metlakatla Institute, University of Rhode Island
Martha Merson TERC
Justin Meyer Center of Science and Industry
James Middleton Arizona State University
Babette Moeller Education Development Center
Jan Mokros Science Education Solutions
Kris Mooney Fleet Science Center
Savitha Moorthy Digital Promise
Alison Mroczkowski Museum of Science and Industry, Chicago
Christa Mulder University of Alaska Fairbanks
Kelly Lynn Mulvey North Carolina State University
Perla Myers University of San Diego
Nalini Nadkarni University of Utah
Kevin Niemi University of Wisconsin-Madison
Michael Nitsche Georgia Institute of Technology
Julia Parrish University of Washington
Patti Parson PBS NewsHour/WETA
Dennis Patterson Texas Tech University
Scott Pattison TERC
Leigh Peake Gulf of Maine Research Institute
Frederick Peck University of Montana
Karen Peterman Center of Science Consulting Co
Karen Peterson National Gitti Collaborative
Tina Phillips Cornell Lab of Ornithology
Bryan Pijanowski Purdue University
Claire Pillsbury Exploratorium
Vitaliy Popov University of San Diego
Robert Powell Clinton University
aaron price Museum of Science and Industry, Chicago
Edward Price California State University San Marcos
Liza Pryor Science Museum of Minnesota
Karen Purcell Cornell Lab of Ornithology
Karen Rader Virginia Commonwealth University
Deborah Raksany Giant Screen Films
Monica Ramirez University of Arizona
Stefan Rahn Drexel University
Elizabeth Record Indiana University, CNS
Susan Renee University of Miamai
Kelli Riedingy Oregon State University
Lucy Robinson National History Museum London
Frederick Peck University of Montana
Karen Peterman Karen Petersen
Elizabeath Rowe Educational Gaming Environment (EaGE) group at TERC
Tina Phillips Georgia Institute of Technology
Bryan Pijanowski Purdue University
Claire Pillsbury Exploratorium
Vitaliy Popov University of San Diego
Robert Powell Clinton University
aaron price Museum of Science and Industry, Chicago
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Lucy Robinson National History Museum London
Frederick Peck University of Montana

Sh-Zu

Linda Shore Astronomical Society Of The Pacific
David Paige IMDG International
Jeremy Singer Mark Cerny
David Sittenfeld Museum of Science, Boston
Julia Skolnik The Franklin Institute
Brooke Smith The Kavli Foundation
Gillian Smith Worcester Polytechnic Institute
Lisa Soep YR Media (formerly Youth Radio)
Patricia Solis Texas Tech University
Folashade Solomon TERC
Gerhard Sonnent Flahertys Education
Katie Spellman University of Alaska Fairbanks
Billy Spitzer New England Aquarium
Heidi Schweingruber National Academies of Science, Engineering and Medicine
Marc Stern Virginia Polytechnic Institute and State University
Kristen Scopinich Max-Auburn
Ken A. Searle University of Maryland
Tiana Schaefer National Federation of the Blind
Meeta Sharma-Holt Techbridge Girls
Clytia Styfinski University of Maryland Center for Environment Science
Jeyamkondan Subbiah University of Nebraska-Lincoln
Anne Sullivan Georgia Institute of Technology
Susan Sunbury Smithsonian Astrophysical Observatory
Bill Tally Education Development Center, Inc
Edna Tan University of North Carolina at Greensboro
Travis Tangen Wisconsin Alumni Research Foundation
Tiera Tansley University of California, Los Angeles
Josh Taylor 9 Date
Karen Tingley Wildlife Conservation Society
Katie Todd Museum of Science, Boston
Aliça Torres Child Trends
Lynn Tran UC Berkeley, Lawrence Hall of Science
Laura Trouille Adler Planetarium
Blakely Tsursukai University of Washington Bothell
Eli Tucker-Raymond TERC
Carrie Tzou University of Washington Bothell
Jennifer Urban Montclair State University
Cathlyn Styfinski Institute for Learning Innovation
Judy Vesel TVER
John Volin University of Connecticut
Erin Walker University of Pittsburgh
Justice Walker University of Pennsylvania
Deborah Wasserman COST Center for Research and Evaluation Lifelong Learning Group
Danielle Watt University of California, Irvine
Caitlin Weber STEM Ambassador Program, University of Utah
Bobby Wilson Metro-Atlanta Urban Farm
Marisa Wolsky WGBH Educational Foundation
Bernadette Woods Placky Climate Central
Tracey Wright TERC
Ruth Wynle Arizona State University
Charles Xie Concord Consortium
Sara Yeo Communication, University of Utah
Mark Yu University of California, Irvine
Jill Zarestky Colorado State University
Heather Zimmerman Penn State University
Tricia Zucker UT Health Science Center Houston

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NSF ASSL PROGRAM DIRECTORS

Julie L. Johnson AISL Program Lead
Alphonse T. DeSena CAISE Cognizant Program Officer
Catherine Eberbach David Haury
Paul (Wyn) Jennings Jolene K. Jesse
Valentine H. Kass Ellen McCallie
Monya Ruffin-Nash Robert Russell
Chia Shen Sandy Welch
Amy Wilson-Lopez

NSF ASSL PROGRAM SPECIALISTS

Katelyn Schreyer

NSF AFFILIATE PROGRAM DIRECTORS

Amy Baylor
John Cherniavsky
Wu He
Ferdinand (Ferdie) Rivera
Marilyn Suiter
Sarah-Kay MacDonald
Jeremy Walker
Amy Wilson-Lopez
PARTICIPANT LIST

Le-Sh

Bruce Lewenstein
Carroll University

Emily Lindsey
La Brea Tar Pits and Museum

Breanne Litts
Utah State University

Marit Louw
Carnegie Mellon University

LouAnn Lyon
Etkin

Brian Magerko
Georgia Tech / EarSketch

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Andrew Manges
University of Edinburgh

Lesley Markham
Association of Science-Technology Centers

Rabiah Mayas
Northeastern University

Michael Mayhew
Science Education Solutions

Sue Ellen McConnell
KETC

Dale McCreedy
Discovery Center at Murfree Spring

Megan McKinley
Boston College

Tom McKlin
The Finds Group

Emily McLeod
Techology Girls

Shannon McManimon
SUNY New Paltz

Katherine McMillan
Culp

New York Hall of Science

Sunshine Menezes
Metall Institute, University of Rhode Island

Martha Merson
T ERC

Justin Meyer
Center of Science and Industry

James Middleton
Arizona State University

Babette Moeller
Education Development Center

Jan Mokros
Science Education Solutions

Kris Mooney
Feel Science Center

Savitha Moorthy
Digital Promise

Alison Moczowsk
Museum of Science and Industry, Chicago

Christa Mulder
University of Alaska Fairbanks

Kelly Lynn Mulvey
North Carolina State University

Perla Myers
University of San Diego

Nan limestone
University of Utah

Kevin Niemi
University of Wisconsin-Madison

Michael Nitsche
Georgia Institute of Technology

Julia Parrish
University of Washington

Patti Parson
PBS Newshour/WETA

Dennis Patterson
Texas Tech University

Scott Patterson
T ERC

Leigh Peake
Gulf of Maine Research Institute

Frederick Peck
University of Montana

Karen Peterman
Kansas State University

Karen Peterson
National Grid Collaborative

Tina Phillips
Cornell Lab of Ornithology

Bryan Pijanowski
Purdue University

Claire Pillsbury
Exploratorium

Vitaliy Popov
University of San Diego

Robert Powell
Cornell University

Aaron Price
Museum of Science and Industry, Chicago

Edward Price
California State University San Marcos

Liza Pryor
Science Museum of Minnesota

Karen Purcell
Cornell Lab of Ornithology

Karen Rader
Virginia Commonwealth University

Deborah Raksany
Giant Screen Films

Monica Ramirez
University of Arizona

Stefan Rank
Drexel University

Elizabeth Record
Indiana University, CNS

Susan Renee
University of Miami

Kelly Riedinger
Oregon State University

Lucy Robinson
Natural History Museum London

Pamela Rosenblum
NOW!WGBH

Mark Rosin
Goddard Space Flight Center

Elizabeth Rowe
Educational Gaming Environment (EaGE) group at T ERC

Shawn Rowe
Oregon State University

Jonathan Rowe
North Carolina State University

Andrew Ruis
University of Wisconsin-Madison

Adam Rutland
University of London, Goldsmiths

Min jung Ryu
Purdue University

Philip Sadler
Harvard Smithsonian Center for Astrophysics

Gillian Smith
Washington Polytechnic Institute

Lindsey Soep
YR Media (formerly Youth Radio)

Patricia Solis
Texas Tech University

Folashade Solomon
T ERC

Gerhard Sonnert
Harvard University

Karen Spelman
University of Alaska Fairbanks

Billy Spitzer
New England Aquarium

Dennis Schatz
Science Center

Heidi Schweingruber
National Academies of Science, Engineering and Medicine

Marc Stern
Virginia Polytechnic Institute and State University

Katie Stofker
University of Florida

Martin Storksdieck
Oregon State University

Craig Strong
Lawrence Hall of Science

Rhoda Struminger
Texas A&M University

Cathlyn Styinski
University of Maryland Center for Environment Science

Jyankondan Subbiah
University of Nebraska-Lincoln

Anne Sullivan
Georgia Institute of Technology

Susan Sunbury
Smithsonian Astrophysical Observatory

Bill Tally
Education Development Center, Inc

Edna Tan
University of North Carolina at Greensboro

Travis Tingen
Wisconsin Alumni Research Foundation

Tiera Tanksley
University of California, Los Angeles

Josh Taylor
9 Dot

Karen Tingley
Wildlife Conservation Society

Kathleen Towd
Museum of Science, Boston

Alicia Torres
Children’s Museum of Sonoma County

Luke Tran
UCLA, Lawrence Hall of Science

Laura Truhle
Adler Planetarium

Blakey Tsurusaki
University of Washington

Terry Tuyen
UC Berkeley, Lawrence Hall of Science

Folashade Solomon
T ERC

Gerhard Sonnert
Harvard University

Karen Spelman
University of Alaska Fairbanks

Billy Spitzer
New England Aquarium

Dennis Schatz
Science Center

Heidi Schweingruber
National Academies of Science, Engineering and Medicine

Marc Stern
Virginia Polytechnic Institute and State University

Katie Stofker
University of Florida

Martin Storksdieck
Oregon State University

Craig Strong
Lawrence Hall of Science

Rhoda Struminger
Texas A&M University

Cathlyn Styinski
University of Maryland Center for Environment Science

Jyankondan Subbiah
University of Nebraska-Lincoln

Anne Sullivan
Georgia Institute of Technology

Susan Sunbury
Smithsonian Astrophysical Observatory

Bill Tally
Education Development Center, Inc

Edna Tan
University of North Carolina at Greensboro

Travis Tingen
Wisconsin Alumni Research Foundation

Tiera Tanksley
University of California, Los Angeles

Josh Taylor
9 Dot

Karen Tingley
Wildlife Conservation Society

Kathleen Towd
Museum of Science, Boston

Alicia Torres
Children’s Museum of Sonoma County

Luke Tran
UCLA, Lawrence Hall of Science

Laura Truhle
Adler Planetarium

Blakey Tsurusaki
University of Washington

Terry Tuyen
UC Berkeley, Lawrence Hall of Science

Folashade Solomon
T ERC

Gerhard Sonnert
Harvard University

Karen Spelman
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NEIGHBORHOOD GUIDE

AMERICAN

Café Gallery & Market
2141 Jamieson Ave
(1/2 block)

Cold Stone Creamery
229 Swamp Fox Road
(4 blocks – 8 min. walk)

Foster’s Grille
2004 Eisenhower Ave
(2 blocks)

Jerry’s Subs & Pizza
510 John Carlyle St
(3 blocks – 7 min. walk)

Joe Theismann’s
1800 Diagonal Rd
(5 blocks - 10 min. walk)

La Porta Restaurant
1600 Duke St
(4 blocks – 8 min. walk)

Pizzeria Venti
301 John Carlyle St
(3 blocks – 7 min. walk)

Plaza Gourmet
at Carlyle
1940 Duke St (2 blocks)

Potbelly Sandwich Works
401 John Carlyle St
(2 blocks)

Quiznos Sub / Einstein Bros Bagels
401 Dulany St (2 blocks)

Robeks Juice
1931 Ballenger Ave
(2 blocks)

Ruby Tuesday
200 Swamp Fox Road
(4 blocks – 10 min. walk)

Starbucks
2040 Jamieson Ave.
(Connected to hotel)

Subway
2361 Eisenhower Ave
(2 blocks)

Ted’s Montana Grill
2451 Eisenhower Ave
(4 blocks – 8 min. walk)

Galae Thai
215 Swamp Fox Road
(4 blocks – 8 min. walk)

Pasara Thai Restaurant
2051 Jamieson Ave
(1/2 block)

Sushi Naru
540 John Carlyle St
(3.5 blocks)

ASIAN

Galae Thai
215 Swamp Fox Road
(4 blocks – 8 min. walk)

Pasara Thai Restaurant
2051 Jamieson Ave
(1/2 block)

Sushi Naru
540 John Carlyle St
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MEDITERRANEAN

Mezza
1725 Duke Street

Della’s Mediterranean Grill & Brick Oven Pizza
209 Swamp Fox Road
(4 blocks – 8 min. walk)

Quattro Formaggi Italian Restaurant
1725 Duke St
(5 blocks - 10 min. walk)

SOUTHWESTERN/MEXICAN AND SPANISH

Austin Grill
801 King Street

California Tortilla
301 Swamp Fox Road
(4 blocks – 8 min. walk)

La Tasca
607 King Street

San Antonio Bar & Grill
200 Swamp Fox Road
(4 blocks – 8 min. walk)

For more information on things to do and see in Old Town Alexandria, explore their website: www.visitalexandriava.com/old-town-alexandria

CONFERENCE ROOM MAP
NEIGHBORHOOD GUIDE

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CONFERENCE ROOM MAP

This document contains approximate measurements and square footage that are for illustrative purposes only. We cannot guarantee the floor plan accuracy or completeness, therefore encourage you to review the space to make sure it is suitable for your event.