

# Broader Impacts Summit 2017 Summary Brief

The fifth annual National Alliance for Broader Impacts Broader Impacts Summit was held April 25-28, 2017, hosted by Oregon State University at Skamania Lodge, in Stevenson, WA.

## HIGHLIGHTS

- Jory Weintraub, Janice McDonnell, and Oludurotimi Adetunji, chairs and members of the NABI Training Subcommittee, developed and delivered a half-day workshop: “Broader Impacts 101,” and “Setting up a BI Office.”
- Dr. Suzi Iacono spoke at the Summit and provided recently compiled data on broader impacts trends in funded proposals.
- A major panel discussion centered on the August 2017 total solar eclipse. Expert panelists Laura Peticolas, Dennis Schatz, Angela Speck gave detailed talks and demonstrations on the solar eclipse, including information on how to experience the eclipse safely, and where the best locations were to be in the path of totality. Safety glasses were donated by the University of Missouri for all participants.

## AGENDA

<b>PRECONFERENCE TUESDAY, APRIL 25</b>	
12:00 noon	<b>Registration</b>
1:00–5:00 p.m.	<b>Preconference</b> <ul style="list-style-type: none"> <li>• Introductions – Who are we? Who are you?</li> <li>• Short group activity/report-out: What are Broader Impacts?</li> <li>• Presentation: Broader Impacts 101</li> <li>• Extended group activity/report-out: Develop a BI plan based on research scenarios</li> <li>• Introduction to the BI Wizard</li> <li>• Starting up a BI Office at your Institution</li> <li>• Q&amp;A/Wrap-up</li> </ul>
<b>DAY ONE WEDNESDAY, APRIL 26</b>	
7:30 a.m.–12 noon	<b>Registration</b>
7:30 a.m.	<b>Continental Breakfast</b>
8:30–9:20 a.m.	<b>Welcome and Opening Remarks</b> <i>Julie Risien, Oregon State University and Susan Renoe, University of</i>

	<p>Missouri Cynthia Sagers, Vice President for Research, Oregon State University</p>
9:30–10:40 a.m.	<b>SESSION 1</b>
	<p><b>Workshop</b> <b>So You Think You Can Tweet?</b> Esther De Smet, Ghent University</p>
	<p><b>Workshop</b> <b>Partnerships for Impact in Citizen Science</b> Rick Bonney and Karen Purcell, Cornell University</p>
	<p><b>Combined Session</b> <b>Novel and Innovative BI Approaches</b> <i>Using Crowdfunding to Incentivize Outreach and to Build Partnerships within Academic Institutions</i> Jai Ranganathan and Anthony Salvagno, SciFund Challenge <b>Science as Cinema: Taking Broader Impacts to the Big Screen</b> David Baker and Justin Smith, Oregon State University <b>The Broader Impacts of University Based Economic Development: The Case of StartUP FIU</b> Emily Gresham and Vivian Cueto, Florida International University <b>The Power of Partnerships in Outreach and Education</b> Amelia Bachleda, University of Washington</p>
10:40–10:55 a.m.	<b>Break</b>
10:55–11:55 a.m.	<b>SESSION 2</b>
	<p><b>Coordinated Panel</b> <b>The Power of Partnerships: The UWisc.-Madison Science Alliance</b> Kevin Niemi, Karen Dunn, and Travis Tangen, University of Wisconsin-Madison</p>
	<p><b>Coordinated Panel</b> <b>Building Partnerships to Increase Chemical Science Education to Underrepresented Minorities</b> Lloyd Munjanja, Danielle Watt, and Christopher Parsons, Emory University</p>
	<p><b>Combined Session</b> <b>Graduate Student Training and Development</b> <b>Defining Mentorship for Faculty and Students</b> Liz Nysson, University of Wyoming <b>Science Communication 101: A Museum-University Partnership for Early-Stage Graduate Students</b> Rabiah Mayas, Mandy Bobrow, Heather Barnes, and Carla Thacker, Museum of Science and Industry, Chicago</p>

	<p><b><i>STEM Graduate Students as Partners: University of Missouri's Model for Training the Next Generation of BI Practitioners</i></b>  <i>Jacqueline Gamboa Varela and Anahita Zare, University of Missouri</i></p>
12:00 noon–12:55 p.m.	<p><b>Lunch</b>  <i>Sponsored by Michigan State University</i></p>
1:00–1:45 p.m.	<p><b>Keynote Speaker</b>  <i>Dr. Suzi Iacono, Director, Office of Integrative Activities (OIA), National Science Foundation (NSF)</i></p>
1:50–2:50 p.m.	<p><b>SESSION 3</b></p>
	<p><b>Evaluation Session</b>  <b>Part 1: Broader Impacts Evaluation 101</b>  <i>Douglas Spencer, Edu, Inc.; Julie Risien, Oregon State University; John Baker, University of Pennsylvania; and Monya Ruffin</i></p>
	<p><b>Coordinated Panel</b>  <b>University-Community Partnerships to Advance Community Service and Workforce Development</b>  <i>Melanie Roberts, Emerging Leaders in Science &amp; Society, American Association for the Advancement of Science (AAAS) and Jennifer Davison, University of Washington</i></p>
2:50–3:10 p.m.	<p><b>Break</b></p>
3:10–4:10 p.m.	<p><b>SESSION 4</b></p>
	<p><b>Coordinated Panel</b>  <b>The Role of Partnerships in Empowering High-Quality Outreach by Scientists: Recent and Ongoing Research</b>  <i>Martin Storksdieck, Oregon State University; Cathlyn Stylinski, University of Maryland; John Besley, Pacific Science Center; and Eve Klein, Pacific Science Center</i></p>
	<p><b>Discussion</b>  <b>Future Directions for Broader Impacts in the Engineering Directorate at the National Sciences Foundation</b>  <i>Sheldon Jacobson, University of Illinois; Andrew Johnson, Texas A&amp;M University; Jerome Hajjar, Northeastern University; Dawn Tilbury, University of Michigan; Erick Moreno-Centeno, Texas A&amp;M University; and Si Qian Shen, University of Michigan</i></p>
4:15–5:00 p.m.	<p><b>National Policy Update and Discussion</b>  <i>Toby Smith, Association of American Universities (AAU) and Geoff Hunt, American Society for Biochemistry and Molecular Biology (ASBMB)</i></p>
5:00–7:00 p.m.	<p><b>Break</b></p>

7:00 p.m.	<b>Dinner</b> <i>Sponsored by The Kavli Foundation</i>
-----------	---

<b>DAY TWO</b> <b>THURSDAY, APRIL 27</b>	
7:30 a.m.	<b>Continental Breakfast</b>
8:30–10:15 a.m.	<b>Establishing a Broader Impacts Resource Center</b>
10:15–10:30	<b>Break</b>
10:30–11:55 a.m.	<b>SESSION 5</b>
	<b>Coordinated Panel</b> <b>Engineering BI Partnerships: Using Engineering to Meet the Cross-Cutting Challenges of K-12 NGSS</b> <i>Katie Mills, University of Southern California; Sriram Sundararajan, Iowa State University; Ted Conway, Florida Institute of Technology; and Emily Ford, Columbia University</i>
	<b>Coordinated Panel</b> <b>NSF CAREER Program: A Gateway to Get Faculty "Hooked" on BI</b> <i>Kate Spohr, University of California Berkeley and Kaye Storm, Stanford University</i>
	<b>Evaluation Workshop</b> <b>Part 2: Broader Impacts Evaluation Planning and Practice</b> <i>Douglas Spencer, Edu, Inc.; Julie Risien, Oregon State University; and John Baker, University of Pennsylvania</i>
12:00 noon–1:00 p.m.	<b>Lunch</b> <i>Sponsored by Strengthening the Professoriate @ISU (SP@ISU)</i>
1:00–2:30 p.m.	<b>SESSION 6</b>
	<b>Workshop</b> <b>Broader Impacts for the 21st Century and Beyond</b> <i>Megan Heitmann, Iowa State University; Susan Renoe, University of Missouri; Julie Risien, Oregon State University; Diane Rover, Iowa State University; David Phipps, York University; and Sara Vassmer, University of Missouri</i>
	<b>Workshop</b> <b>Partnering to Inspire: Bringing Your Scientists into the Classroom</b> <i>Rachel Gesserman, Broad Institute of MIT and Harvard and Anique Oliver-Mason, Brandeis University</i>
	<b>Workshop</b> <b>Crossing Apparent Divides: Scientists' Engagement with Non-</b>

	<b>Traditional Public Audience</b> <i>Nalini Nadkarni, University of Utah; Dennis Schatz, Pacific Science Center; Becky Menlove, University of Utah; and Caitlin Weber, University of Utah</i>
2:30–5:30 p.m.	<b>Break</b>
5:30–7:00 p.m.	<b>Reception/Dinner</b>
7:00–8:30 p.m.	<b>Eclipse Panel</b> <i>Sponsored by the University of Missouri Dennis Schatz, Pacific Science Center; Angela Speck, University of Missouri; and Laura Peticolas, University of California Berkeley</i>

<b>DAY THREE</b> <b>FRIDAY, APRIL 28</b>	
7:30 a.m.	<b>Continental Breakfast</b>
8:30–9:00 a.m.	<b>Poster Session</b>
9:05–10:35 a.m.	<b>SESSION 7</b>
	<b>Workshop</b> <b>Establishing a Peer-Reviewed Broader Impacts Journal</b> <i>Kathleen Hill, Matthew M. Johnson, and Annmarie R. Ward, Penn State University</i>
	<b>Workshop</b> <b>Supporting Public Engagement of Science Within Broader Impact Efforts</b> <i>Cathlyn Stylinski, University of Maryland and Martin Storksdieck, Oregon State University</i>
	<b>Workshop</b> <b>Partnering for Public Engagement: Models, Opportunities, and Challenges</b> <i>Anna Johnson, Pacific Science Center; Ann P. McMahon, University of Washington; Bothell Amanda Fisher, Oregon Museum of Science &amp; Industry; Stephen Solovitz, Washington State University-Vancouver; and Chuck Lennox, Lennox Insites</i>
10:45–11:30 a.m.	<b>Facilitated Town Hall</b>
12 noon	<b>Adjourn/Lunch</b>

## SUMMIT PLANNING COMMITTEE

Julie Risien, Oregon State University, 2017 Chair  
Megan Heitmann, Iowa State, Co-chair  
Kevin Niemi, University of Wisconsin-Madison, Co-chair  
Victoria Bonebrake, Oregon State University  
Kristen Coakley, University of Pennsylvania  
Lenora Crabtree, University of North Carolina Charlotte  
Janice Dawe, University of Alaska  
Carrie Ferraro, Rutgers University  
Anna Johnson, Pacific Science Center  
Matt Johnson, Penn State University  
Bryan Rebar, University of Oregon  
Janice McDonnell, Rutgers University  
Susan Renoe, University of Missouri  
Laurie Van Egeren, Michigan State University  
Sara Vassmer, University of Missouri  
Jory Weintraub, Duke University  
Anahita Zare, University of Missouri

## SUMMIT PARTICIPANTS

Over 85 different universities, institutes, centers, non-profit organizations and private companies were represented over the three-day summit. There were 134 total registrants, and 23% of the total Summit registration was comprised of EPSCoR state attendees. Fourteen EPSCoR states were represented, with a total of 31 EPSCoR registrants.

Academi	Duke University
American Society for Biochemistry and Molecular Biology	Emerging Leaders in Science & Society
Arizona State University	Emory University
Association of American Universities	Florida Institute of Technology
Association of Science-Technology Centers	Florida International University
Bowerbird Communications	Georgia Institute of Technology
Brandeis University	Ghent University
Broad Institute of MIT and Harvard	Indiana University
Brown University	Iowa State University
California Institute of Technology	Metro Atlanta Urban Farm
Caltech	Michigan State University
Carnegie Mellon University	Montana State University
Case Western Reserve University	Museum of Science and Industry, Chicago
Center for Chemical Evolution	National Science Foundation
Center for Chemistry at the Space Time Limit	Natural History Museum of Utah
Columbia University	Northern Arizona University
Cornell University	Northwestern University
	Oregon Museum of Science and Industry
	Oregon State University
	Pacific Science Center

Penn State University  
Princeton University  
Project S.E.A.-Link  
Rice University  
Rutgers University  
Saturday Academy  
Science Friday Initiative  
SciFund Challenge  
South Dakota State University  
Stanford University  
SUNY Binghamton  
Texas A&M Engineering Experiment  
Station  
Texas A&M University-Corpus Christi  
The Kavli Foundation  
The Ohio State University  
UNAVCO  
University of Arizona  
University of California Berkeley  
University of Colorado, Boulder  
University of Hawaii System  
University of Idaho  
University of Illinois  
University of Maryland

University of Missouri  
University of Nebraska-Lincoln  
University of Nevada, Reno  
University of New Mexico  
University of North Carolina at Charlotte  
University of Oklahoma  
University of Oregon  
University of Pennsylvania  
University of Southern California  
University of Utah  
University of Washington  
University of Washington Bothell  
University of Washington Tacoma  
University of Wyoming  
Utah State University  
University of Wisconsin-Madison  
Vanderbilt University  
Virginia Institute of Marine Science/W&M  
Virginia Tech  
WARF  
Washington State University  
Washington University in St. Louis  
Wyoming EPSCoR  
York University

## **SUMMIT THEMES**

### *Summit Strands*

The 2017 BI Summit Planning Committee developed four summit strands for presenters to choose from, with the intention of providing well-rounded content for all NABI members. Strands included (1) Novel & Innovative BI Approaches & Activities, (2) Faculty and Student Development and Training for Broader Impacts, (3) Broader Impacts Infrastructure, Skills and Tools, and a catch-all category, (4) Other Topics. Highlighted sessions include a combined session focused on graduate student mentoring, training, and broader impacts experiences; a workshop on the success of CAREER training for early-career faculty, and steps towards the development of a broader impacts journal.

### *Special Session: Evaluation 101*

Due to increased interest in previous years' summits, the Summit Planning committee organized a two-part evaluation workshop with the help of Julie Risien (Oregon State University), Douglas Spencer (Edu, Inc.), and John Baker (University of Pennsylvania). Part one focused on bridging the gap between the researcher and the evaluation professional, and concluded with an interactive session during the second part of the series to hone participants' skills.

### *Community Engagement & Town Halls*

Two separate sessions were utilized to bring the voice of NABI to the forefront. On Thursday, a 1.5 hour facilitated session was led by Jamie Bell (CAISE) as a preliminary needs assessment from the NABI community moving forward into the NABI Broader Impacts Convening held May 30<sup>th</sup>-31<sup>st</sup> in Arlington, VA. The session focused on three questions: (1) What are your needs for resources, expertise, infrastructure? (2) What resources, infrastructure, expertise do you currently draw from? (3) What kinds of resources, expertise, infrastructure do you wish existed (or would like to know more about)?

On Friday, the Summit concluded with our annual Town Hall, where NABI members have an opportunity to voice their opinion on the direction of NABI and how to engage as a community moving forward.

## **EVALUATION**

### **Demographics**

71.4% identified as female;  
1.4% identified as Hispanic/Latino;  
1.3% identified as Asian;  
93.5% identified as White;  
6.5% identified as Black or African American  
71.8% considered themselves NABI members

### **Evaluation Themes**

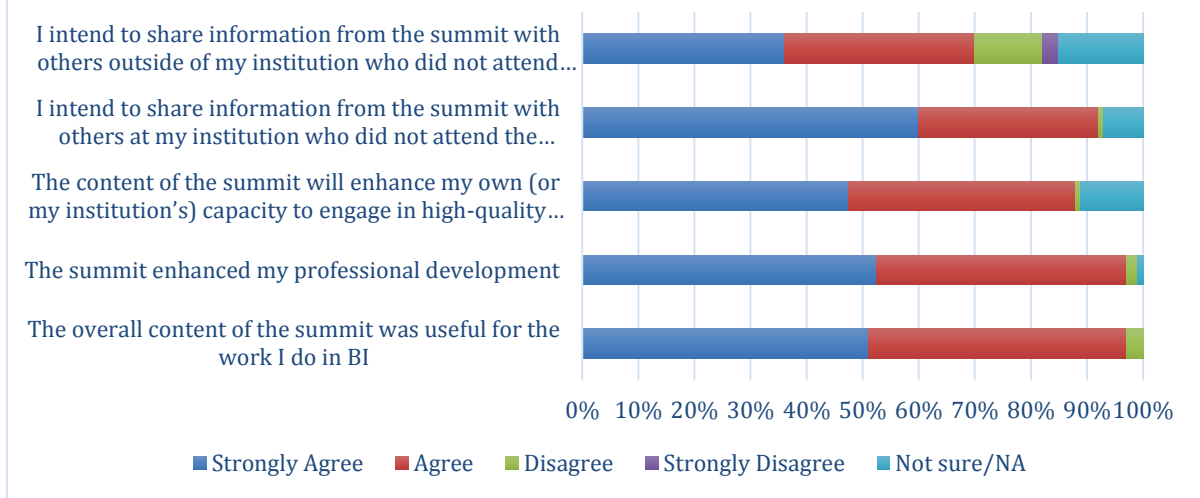
Participants were invited by email to complete an online post-summit evaluation. Ninety-two participants completed the online evaluation (69% response rate). Entering into its fifth year, the Summit has maintained its dedication to providing a BI community of practice and increasing individual and institutional BI capacity. As in previous years, the recurring theme of fostering new connections and strengthening existing network connections was reinforced in this summit evaluation.

Key findings (presented in Figures 1 and 2) include:

- 97% of respondents reported the content was useful for their BI work
- 97% of respondents agreed or strongly agreed the summit enhanced their professional development and 94% agreed or strongly agreed the content will enhance their own (or their institution's) capacity to engage in high-quality BI activities or BI research
- Respondents reported network growth and strengthening of network connections: 97% reported the summit increased the size of their professional network and 84% reported the summit strengthened connections with those already in their network
- 85% of respondents would likely attend another Summit in the future.



**Figure 1: Usefulness of Summit Content**



**Figure 2: Network Development, Collaboration, and Sharing Information**



Participants were pleased with the opportunity to network with professionals in the broader impacts community, and noted the diversity of roles participants held at their respective campuses. Attendees enjoyed keynotes from Dr. Suzi Iacono, Head of the NSF Office of Integrative Activities; established networking times; and the opportunity to talk about broader impacts and national science policy with Toby Smith (AAU) and Geoff Hunt (ASBMB).

A common theme found in responses is the challenge of creating new content for seasoned NABI members, but also meeting the needs of early-career BI professionals. Ideas for future sessions and NABI services emphasized the more practical aspects of creating broader impacts plans, including increased information about the day-to-day details of working with faculty, logistics and planning, a more applied approach to broader impacts evaluation, and creating more organized networking opportunities for participants.

Possibly reflecting this trend was found in feedback on the NABI Guiding Principles Document. The BI Guiding Principles and Questions document developed by NABI is being used and disseminated by conference participants in the following ways: distributed at grant-writing and professional development workshops, used as a resource when working on grant proposals, shared with faculty and researchers when assisting with proposal development, and distributed directly to faculty and administrators. The town hall concluded with a future call to action to produce more helpful guiding documents in the future.

#### *Preconference Evaluation*

Twenty-nine of thirty-six participants completed the online pre-conference evaluation, for an 81% response rate. 52% of attendees identified as broader impacts professionals, with the remainder of responses including research support professionals, grant writers, students and post-docs, among other roles. 96% of participants rated the pre-conference as a 'valuable use of their time,' and 90% would recommend a friend attend another pre-conference workshop. Open-ended responses highlighted the value of practical information provided by the facilitators; namely, the COSEE BI Wizard was regarded as one of the most valuable resources shared during the pre-conference. Future directions include emphasis on establishing a BI office in their home institution and less focus strictly on BI basics.

#### *Social Media Presence*

NABI live-tweeted the summit proceedings, and invited summit attendees to use the twitter hashtag: #NABI17 to consolidate their own summit-related tweets. Using Twitter analytics, during the three day conference, the @NA4BI account tweeted 45 times and averaged 2,100 impressions per day from April 25<sup>th</sup>-28<sup>th</sup>.

### **FUTURE DIRECTIONS**

Moving forward, May 30-31<sup>st</sup> NABI will convene NSF officers, policy professionals, university administrators, BI & Extension professionals, and representatives from two-and four-year institutions including HBCUs, MSIs, and HSIs in Arlington, VA for a two-day meeting to discuss the future directions of broader impacts. The convening will include a keynote address by Dr. Joan Ferrini-Mundy, a panel discussion with NSF directorate and office leadership, and facilitated working groups focused on developing a needs assessment and consensus on how to move BI forward professionally and logistically.

The next Broader Impacts Summit will be hosted by Brown University and will take place at the Providence Biltmore in Providence, RI April 25-27, 2018.