



The Science of Science Communication III (SSCIII)
Inspiring Novel Collaborations and Building Capacity
National Academy of Sciences; Washington, DC
November 16-17, 2017

Organizers: **Karen Cook**, Stanford University; **Baruch Fischhoff**, Carnegie Mellon University; **Alan Leshner**, American Association for the Advancement of Science (Emeritus); and **Dietram Scheufele**, University of Wisconsin–Madison

Agenda

Thursday, November 16, 2017

Moderator: **Frank Sesno** (George Washington University)

8:30-8:45 **Welcome**

Marcia McNutt, President, National Academy of Sciences

8:45-9:30

Future Directions in the Sciences of Science Communication: A Discussion of the NASEM Report Communicating Science Effectively: A Research Agenda

The new consensus study report *Communicating Science Effectively: A Research Agenda* aspires not only to expand the sciences of science communication but also to transform the practice of communicating challenging scientific issues. What are the main conclusions from this broad literature review? What do we know, and still need to know? This session will be a lively discussion among speaker, respondent, and audience.

Speaker: **Alan Leshner** (American Association for the Advancement of Science, Emeritus)

Discussant: **Baruch Fischhoff** (Carnegie Mellon University)

9:30-10:10

A View from Philanthropy on the Future of Science Communication

In order for the recommendations from *Communicating Science Effectively* to be realized, every aspect of the community needs to be inspired to do its part to make communicating with public audiences about science more productive. Deep collaboration is necessary among science communication researchers, researchers in neighboring disciplines, practitioners, content experts, and the philanthropic community. This panel of leaders in philanthropy will examine the research agenda in the consensus study report and compare and contrast it with their priorities for science communication. We will learn how this group plans to ensure that evidence-based science makes it into informed decision making.

Session Moderator: **Elizabeth Christopherson** (Rita Allen Foundation)

Discussion with **John Burris** (Burroughs Wellcome Fund) and **Marc Kastner** (Science Philanthropy Alliance).

10:10-10:40 Break

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Support for the Colloquium is provided by The Annenberg Public Policy Center of the University of Pennsylvania, Rita Allen Foundation, Science Sandbox – a Simons Foundation initiative, William and Flora Hewlett Foundation, Gordon and Betty Moore Foundation, The Kavli Foundation, Alfred P. Sloan Foundation, Burroughs Wellcome Fund, and Penn State Science Communication Program.

10:40-12:00

Creating a Collaborative Community for the Sciences of Science Communication

Historically, the sciences have often created unique collaborations when brought together for a common cause. The American Soldier Project during World War II is an exemplar of overcoming the disciplinary boundaries that can both refine and isolate scientists' thinking. In the Sackler Colloquia we have offered such a common challenge: ensuring that science fulfills its obligation to society and secures its continuing support. Effective science communication requires collaborations among scientists expert in a field's subject matter, social scientists expert in eliciting and addressing audience needs, and practitioners expert in the interfaces of science and society. Those collaborations require sustainable institutional arrangements. Here, we invite experienced scientists in organizational behavior and theory to address the opportunities for effective collaboration and the institutional frameworks that support those partnerships. Discussants will reflect on their experiences with large-scale collaborative projects, highlighting connections to the world of science communication.

Speakers:

Gerald Davis (University of Michigan)

Laurie Weingart (Carnegie Mellon University)

Discussants:

David Guston (Arizona State University)

Kathleen Tierney (University of Colorado)

12:00-1:15

Lunch

1:15-2:45

Marshalling the Troops: How Can Traditional Disciplines Help Build the Scale of Research in Science Communication?

Science communication relies on a foundation created by a broad group of researchers across the social, behavioral, and decision sciences. One way to recruit more scientists to these topics is to demonstrate that broad collaborations produce new science, different than what would have emerged from research conducted within disciplines. Teams of researchers in this session will provide the results of their joint work, each driven by the need to reach a public with scientific results that could inform its decisions and better its lives.

Session Moderator: **Ken Prewitt** (Columbia University)

Communicating with the Public About Energy

Wandi Bruine de Bruin (University of Leeds)

Granger Morgan (Carnegie Mellon University)

Communicating with the Public About Research on Immigration

Shanto Iyengar (Stanford University)

Doug Massey (Princeton University)

Communicating with the Public About Infectious Disease

Bob Hornik (University of Pennsylvania)

Susan Scrimshaw (Nevin Scrimshaw International Nutrition Foundation)

2:45-3:15

Break

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3:15-3:55 ***Building Capacity for Science Communication Partnership Award 1: Evidence-based Science Communication to Policymakers***
This project will examine the communication and use of science within the policy-making arena. Researchers will integrate existing scholarly literature with new empirical findings from a survey of science communicators, case studies of science-relevant legislating, and qualitative interviews with policymakers to propose a set of “best practices” for presenting science to policy makers.

Speakers:

Elizabeth Suhay (American University), **Emily Cloyd** (AAAS), and **Erin Nash** (Durham University)

Discussants:

Jim Cohen (The Kavli Foundation)

Fay Cook (National Science Foundation)

David Herring (National Oceanic and Atmospheric Administration)

3:55–4:55 ***Science in the News: Human Genome Editing***
This case study on human genome editing will illuminate one area of science communication that is currently “enjoying” extensive media coverage. The journalist in this session will set the stage with the story, detailing the special challenges in communicating its science. The content expert will then explain the specific aspects of the science that are most important to communicate. Finally, the science communication researcher will discuss the research that can help practitioners identify methods that are most likely to accomplish these tasks and ways to evaluate their effectiveness.

Journalist: **Cornelia Dean** (*The New York Times*)

Content Expert: **Matthew Porteus** (Stanford University)

Science Communication Researcher: **Dietram Scheufele** (University of Wisconsin–Madison)

4:55-5:00 ***Wrap-Up/Lessons Learned***

Baruch Fischhoff (Carnegie Mellon University)

5:00-6:15 ***Reception***

6:15-7:30 ***Keynote Talk***

This free event, open to the public, will bring to audience members an appreciation for how science undergirds effective science communication.

Introduction: **Alan Leshner** (American Association for the Advancement of Science, Emeritus)

Atul Gawande (Brigham and Women’s Hospital)

Friday, November 17, 2017

Moderator: **Ashley Llorens** (John Hopkins Applied Physics Lab)

7:15-8:30 ***Invitation Only Collaboration Breakfast for Leaders of Philanthropic Organizations***

8:40-8:45 ***Welcome***

Alan Leshner (American Association for the Advancement of Science, Emeritus)

- 8:45-9:20 ***Rethinking Evaluation: Using Networks, Big Data, and Social Media to Measure Dissemination and Impact***
 Science communication poses unique challenges for evaluators. It may reach different audiences through sometimes noisy and perhaps biased channels. Its message might need to include the limits to science, as well as its accomplishments. It might need to explain the nature of science and its institutions, along with specific results. And, in the end, the best laid plans may not be realized. But how do we know if science communication is successful or not? Here, we ask how science communication can be evaluated in new and changing media environments. What can we learn from the world of “big data” social media metrics?
- Session Moderator: **Arthur Lupia** (University of Michigan)
- James Fowler** (University of California, San Diego)
- 9:20-10:20 ***Science in the News: Artificial Intelligence and Driverless Cars***
 This case study on artificial intelligence and driverless cars will illuminate one area of science and technology communication that is currently “enjoying” extensive media coverage. The journalist in this session will set the stage with the story, detailing the special challenges in communicating its science. The content expert will then explain the specific aspects of the science and technology that are most important to communicate. Finally, the science and technology communication researcher will discuss the research that can help practitioners identify methods that are most likely to accomplish these tasks and ways to evaluate their effectiveness.
- Journalist: **Jack Stewart** (*Wired*)
 Content Expert: **Illah Nourbakhsh** (Carnegie Mellon University)
 Science and Technology Communication Researcher: **Peter Hancock** (MIT2 Laboratory; University of Central Florida)
- 10:20-10:45 Break
- 10:45-12:00 ***Incentives for Scientists and Engineers to Communicate About Their Research: Roundtable Discussion***
 Whether scientists and engineers engage in science communication depends on their incentives for doing so. However, as often lamented, scientists are many times discouraged from communicating with lay audiences, sometimes directly, as inconsistent with their role, and sometimes indirectly, as a distraction from activities not rewarded in promotion and tenure assessments. In recent years, though, several major institutions have begun defining scientists’ role as including communication with the public. The panel will feature scientists and engineers discussing these experiences, along with evidence on the effects of public engagement on their careers and research.
- Session Moderator: **Andrew Hoffman** (University of Michigan)
- Discussion with **Neil Donahue** (Carnegie Mellon University), **KerryAnn O’Meara** (University of Maryland), **Dietram Scheufele** (University of Wisconsin–Madison), **Ahna Skop** (University of Wisconsin–Madison), and **Emmanuel Taylor** (Energetics Incorporated).
- 12:00-1:00 Lunch

1:00-1:40

Building Capacity for Science Communication Partnership Award 2: Evaluating New Approaches to Promoting Vaccination

Little is known about how to effectively promote vaccines to hesitant parents. In this project, researchers from Dartmouth College and practitioners from the Vermont Department of Health will carry out an innovative experiment to test the effects of social cues and the correction of myths about immunization on parents' decisions.

Speakers:

Brendan Nyhan (Dartmouth College) and **Christine Finley** (Vermont Department of Health)

Discussants:

Greg Boustead (Simons Foundation)

Suzanne Ffolkes (Research!America)

Paul Hanle (Climate Central)

Doron Weber (Alfred P. Sloan Foundation)

1:40-3:05

Focus on a Communication Challenge: Threats to Science's Reputation

Reproducibility, retractions, fraud, sponsorship, and other issues surrounding the integrity of science can erode public trust in science and scientists. To lay publics, these violations of scientific integrity can be hard to distinguish from the self-correcting nature of science, which tries to replicate and falsify existing findings in the pursuit of new knowledge. How can we best define the problems associated with threats to the reputation of science? What does basic research in trust and credibility tell us about how to best address these issues as they apply to science? How can scientists best protect their reputations when communicating with their colleagues and the broader world? What science communication research should address this issue?

Session Moderator: **Kathleen Hall Jamieson** (University of Pennsylvania)

Reputation: What's at Stake?

Susan Fiske (Princeton University)

What Is the Extent of the Problem?

Kevin Finneran (*Issues in Science and Technology*)

Threats to Science: Exploring Solutions

Marcia McNutt (National Academy of Sciences)

3:05-3:35

Break

3:35-4:10

The Role of Scientists and the Media in Communicating Uncertainty

One of the goals of the science of science communication is to help people understand the relevance of scientific research to their everyday lives and decisions, building on the foundational knowledge conveyed by science education. Some of the most important decisions are those involving public policy, such as whether to approve new technologies (e.g., new generation nuclear power) and how to use existing ones (e.g., vaccines). Using the science well requires acknowledging its strengths and limitations. Policy makers can go astray if they let their intuitions override sound science or if they treat the science as more definitive than is warranted (and then blame it for unpleasant surprises). This talk will describe research on how to characterize and communicate science in terms relevant to policy makers.

Session Moderator: **Laura Helmuth** (*The Washington Post*)

Charles Manski (Northwestern University)

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4:10-5:10

Science in the News: Gene Drive

This case study on gene drive will illuminate one area of science communication that is currently “enjoying” extensive media coverage. The journalist in this session will set the stage with the story, detailing the special challenges in communicating its science. The content expert will then explain the specific aspects of the science that are most important to communicate. Finally, the science communication researcher will discuss the research that can help practitioners identify methods that are most likely to accomplish these tasks and ways to evaluate their effectiveness.

Content Expert: **Fred Gould** (North Carolina State University)

Journalist: **Pam Belluck** (*The New York Times*)

Science Communication Researcher: **Dominique Brossard** (University of Wisconsin–Madison)

5:10-5:15

Concluding Remarks

Dietram Scheufele (University of Wisconsin–Madison)