Online Ethics Center
FOR ENGINEERING AND SCIENCE

Public and Community Engagement Subject Aid

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Description

A short guide to some key resources and readings on the topic of public and community engagement in research and practice.

Body

“Public engagement with science describes intentional, meaningful interactions that provide opportunities for mutual learning between scientists and members of the public.”

> American Association for the Advancement of Science, Center for Public Engagement with Science and Technology

Public engagement in science (PES) “is characterized by mutual learning by publics and scientists—and in some cases, policy makers….PES experiences allow people with varied backgrounds and scientific expertise to articulate and contribute their perspectives, ideas, knowledge, and values in response to scientific questions or science-

related controversies. PES thus is framed as a multi-directional dialogue among people that allows all the participants to learn."

Center for the Advancement of Informal Science Education (CAISE) Inquiry Group Report

Subject Overviews

American Association for the Advancement of Science, Center for Public Engagement with Science and Technology. "Why Public Engagement Matters." Last updated May 16, 2016.

A well-written summary defining public engagement, articulating its importance for society and for scientific progress, and identifying how scientists can benefit from being involved in these kinds of projects and outreach.

Collins, Darron. 2017. "Hard Data and Human Empathy." *Science .* 358 (6359): 142. doi: 10.1126/science.358.6359.142

This column describes the need for conservation scientists (and others) to be cultural translators if they are to reach towards a successful future.

Kyle, Renee and Susan Dodds. 2009. "Avoiding empty rhetoric: Engaging publics in debates about nanotechnologies." *Science and Engineering Ethics.* 15(1):81-96.

In this paper, the authors articulate why public engagement in debates about nanotechnology is important, drawing on literature on public engagement and science policy debate as well as deliberation about public policy development. They also explore the significance of timing in engaging the public and make some suggestions for ways to effectively engage multiple and diverse publics. Their conclusions indicate the importance of including scientific researchers, policy makers, and representative consumer groupings in public reasoning about technological development, and suggest the need for better public policy framework for these discussions. Although the paper focuses specifically on nanotechnology, the findings are relevant to other fields.

McCallie, Ellen, Larry Bell, Tiffany Lohwater, John H. Falk, Jane L. Lehr, Bruce V. Lewenstein, Cynthia Needham and Wiehe, B. 2009. *Many Experts, Many Audiences: Public Engagement with Science and Informal Science Education. A CAISE Inquiry Group Report*. Washington, D.C.: Center for Advancement of Informal Science Education (CAISE).

> This report provides an overview of the concepts and context for public engagement with science, particularly in relation to informal science education. The goal of the work is to broaden the kinds of professionals and stakeholders who participate in these conversations and to encourage more efforts to engage the public with science. The authors argue that informal science institutions such as science museums are well positioned to bring together public audiences, scientists, and engineers, and that public engagement with science is aligned with these institutions' missions and area of expertise.

The National Academies of Science, Engineering and Medicine. 2015. *Public Engagement on Genetically Modified Organisms: When Science and Citizens Connect: A Workshop Summary*. Washington D.C. National Academies Press.

> The National Research Council's Roundtable on Public Interfaces of the Life Sciences held a 2-day workshop on January 15-16, 2015 in Washington, DC to explore the public interfaces between scientists and citizens in the context of genetically engineered (GE) organisms. The workshop presentations and discussions dealt with perspectives on scientific engagement in a world where science is interpreted through a variety of lenses, including cultural values and political dispositions, and with strategies based on evidence in social science to improve public conversation about controversial topics in science. The workshop focused on public perceptions and debates about genetically engineered plants and animals, commonly known as genetically modified organisms (GMOs), because the development and application of GMOs are heavily debated among some stakeholders, including scientists. For some applications of GMOs, the societal debate is so contentious that it can be difficult for members of the public, including policy-makers, to make decisions. [A]lthough the discussions are particularly relevant for anyone involved with the GMO debate, the workshop focused on issues related to public interfaces with the life science that apply to many science policy debates. The workshop

summary provides conceptual and practical take-homes for scientists who might want to engage in dialogues about GMOs.

The National Academies of Science, Engineering and Medicine. 2013. *Perspectives on Research with H5N1 Avian Influenza: Scientific Inquiry, Communication, Controversy: Summary of a Workshop*. *Washington D.C. National Academies Press.*

When, in late 2011, it became public knowledge that two research groups had submitted for publication manuscripts that reported on their work on mammalian transmissibility of a lethal H5N1 avian influenza strain, the information caused an international debate about the appropriateness and communication of the researchers' work, the risks associated with the work, partial or complete censorship of scientific publications, and dual-use research of concern in general. This report provides a comprehensive overview of the workshop convened by the National Academies in response.

Nisbet, Matthew C. and Dietram A. Scheufele. 2009. "What's next for science communication? Promising directions and lingering distractions." *American Journal of Botany.* 96(10): 1767-1778.

In this essay, the authors review research from the social sciences on how the public makes sense of and participates in societal decisions about science and technology. They specifically highlight the role of the media and public communication in this process, challenging the still-dominant assumption that science literacy is both the problem and the solution to societal conflicts. After reviewing the cases of evolution, climate change, food biotechnology, and nanotechnology, they offer a set of detailed recommendations for improved public engagement efforts on the part of scientists and their organizations. They emphasize the need for science communication initiatives that are guided by careful formative research, span a diversity of media platforms and audiences, and facilitate conversations with the public that recognize, respect, and incorporate differences in knowledge, values, perspectives, and goals.

Policy or Guidance

AAAS Center for Public Engagement with Science & Technology 2016. "Communication Toolkit" Last modified May 16, 2016.

> AAAS' Center for Public Engagement with Science & Technology focuses on providing scientists and scientific institutions with the resources they need to have meaningful conversations with the public. The Center's Communication Toolkit provides guidance for scientists who want to build skills to effectively communicate and engage with public audiences.

National Coalition for Dialogue and Deliberation. 2009. *Core Principles for Public Engagement*.
Bowling Springs, PA. Last accessed 21 June 2016.

> Developed by the National Coalition for Dialogue and Deliberation, the International Association for Public Engagement, and the Co-Intelligence Institute along with a large number of leaders in the field, this short document lays out key principles and guidelines for planning an effective public engagement event.

Presidential Commission for the Study of Bioethical Issues. 2016. *Bioethics for Every Generation: Deliberation and Education in Health, Science and Technology*. May. Washington, D.C. Last accessed 18 May 2016.

> In *Bioethics for Every Generation: Deliberation and Education in Health, Science, and Technology*, the Bioethics Commission demonstrates how democratic deliberation and ethics education can go hand-in-hand to solve some of the most intractable problems in bioethics and beyond. The Bioethics Commission offers eight recommendations to strengthen and advance deliberation and education to improve policy-making in bioethics, and to create a more democratic and just society.

Bibliography

Online Ethics Center for Engineering, National Academy of Engineering. 2010. "Public and Community Engagement."
https://onlineethics.org/cases/public-engagement-science-and-technology-policy-decision-making-bibliography

An extensive bibliography looking at public and community engagement from different disciplines and perspectives. Includes web sites, books, journal articles and guidance documents.

Nisbet, Matthew C. and Ezra Markowitz. 2015. *Public Engagement Research and Major Approaches.* Washington, D.C: American Association for the Advancement of Science.
http://www.aaas.org/sites/default/files/content_files/Biblio_PublicEngagement_FINA

This bibliography compiles recent research done in the area of public engagement. It is meant to serve as a resource for the broader community of public engagement practitioners, researchers, and scientists doing public engagement.

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Resource Type

Bibliography

Parent Collection

OEC Subject Aids

Topics

Communicating Science and Engineering

Discipline(s)

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Engineering
Life and Environmental Sciences
Social and Behavioral Sciences
Computer, Math, and Physical Sciences
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