



CORNELL

# Comm 694: Public Engagement in

## Science

Spring 2003

Thursday, 7:00 pm -- 10:00 pm

Location: Kennedy 211

Prof. [Bruce Lewenstein](#)

321 Kennedy Hall

255-8310 (phone)

BVL1@cornell.edu (e-mail)

Office hours: Weds., 2:30-4:30 or by appointment

### [What's new on this website?](#)

[The most up-to-date syllabus will be online at

<http://instruct1.cit.cornell.edu/courses/comm694>; .pdf version of 8 Feb 2003

version available [here](#).]

The traditional label of "public understanding of science" has always been problematic (not least because of its acronym, PUS). In the last few years, the label of "public engagement in/with science and technology" has become more popular (though already at least [one website](#) is making fun of *its* acronym, PEST, while simultaneously providing some helpful links). This seminar will explore some of the recent publications justifying, proposing, describing, evaluating, and seeking the meaning of various approaches to "public engagement in science." Is the label any less problematic than PUS? What activities are contemplated under the label of public engagement? How might one measure public engagement? Some of the activities to be explored include local and national "public consultations"; deliberative polling; citizens' juries, consensus conferences,

foresight exercises, citizen science, and science shops.

[After the first two weeks of the seminar, it has become clear that we need to expand our definition of "engagement" -- to include both *political* engagement and *educational* engagement. Thus this version of syllabus contains additional readings in educational theory and engagement.]

The seminar will meet once a week for 3 hours. Students will be assigned responsibility for leading the discussions each week. Indeed, students will also be assigned responsibility for exploring issues about which the instructor (Bruce Lewenstein) knows little but which are clearly relevant to discussions of public engagement. (Two specific examples: (1) General political theory on citizen engagement is clearly relevant, and has a long history -- someone will need to find appropriate readings and present them. (2) Similarly, the formal extension system has been actively seeking to create public engagement, but no readings on extension currently appear on the syllabus; someone will need to identify and present that material.)

This is an advanced course on public engagement in science. Discussions will assume that you are already familiar with at least some of the literature on public understanding of science; in particular, I will assume that people have already read Gregory and Miller (1998). Other background readings include the two readers compiled by Scanlon (1998, 1999), as well as chapters and articles by Wynne (1992) and Ziman (1991, 1992).

## Schedule and Readings

A full bibliography of readings appears [here](#).

### ***Week 1, 23 January: Discussion***

What is public engagement in science? How is it different than "public understanding" of science or "popularization" of science? Is "PEST" any better than "PUS" as an acronym? (Personally, I prefer "pub-science" -- much more appealing connotations.) Beyond the

narrow "public understanding" literature, what topics do we need to know more about (see the comments above about political theory and about the cooperative extension system).

Prep: Read about [public inquiry into primate center in Cambridge, UK](#).

### **Week 2, 30 January: Public engagement in science**

Hamlett, P. W. (2003). Technology Theory and Deliberative Democracy. *Science, Technology & Human Values*, 28(1), 112-140. [Journal [available online](#); .pdf of article is [here](#) for those registered for class]

Joss, S. (editor) (1999). Public participation in science and technology [special issue]. *Science and Public Policy*, 26(5), 290-373. [Journal [available online](#).]

### **Week 3, 6 February: Democratic theory and participation**

Fishkin, J. S. (1997). *The Voice of the People: Public Opinion & Democracy* (2nd ed.). New Haven: Yale University Press. (chs. [1](#), [2](#), [afterword](#))

Yankelovich, D. (1991). *Coming to public judgment : making democracy work in a complex world* (1st ed.). Syracuse, N.Y.: Syracuse University Press. ([chs. 1-4, 19](#))

Supplementary: Merkle, Daniel M. 1996. The National Issues Convention Deliberative Poll. *Public Opinion Quarterly*, 60:588-619. [review of Fishkin's NIC experiment] [.pdf of article is [here](#) for those registered for class]

### **Week 4, 13 February: Implementing engagement**

#### *Political engagement*

House of Lords. (2000). *Science and Society*. London: UK House of Lords. (Includes laundry list of public engagement activities).

Available at <http://www.parliament.the-stationery-office.co.uk/pa/ld199900/ldselect/ldsctech/38/3801.htm>. See also

government response at

<http://www.dti.gov.uk/scienceind/report3response.htm>.

### Educational engagement

American Association for the Advancement of Science. 1993. *Benchmarks for Science Literacy*. New York: Oxford University Press. [[available online](#)]

National Research Council. 1996. *National Science Education Standards*. Washington: National Academy Press. [[available online](#)]  
(Read introduction, chapters 1 and 2)

Project 2061. 1989. *Science for All Americans*. Washington, D.C.: AAAS. [[available online](#)]

### Supplementary reading on educational theory

Strike, Kenneth A., and George J. Posner. 1992. A Revisionist Theory of Conceptual Change. In *Philosophy of science, cognitive psychology, and educational theory and practice*, edited by R. A. Duschl and R. J. Hamilton. Albany: State University of New York Press. [.pdf of article is [here](#) for those registered for class]

Brooks, Jacqueline Grennon, Martin G. Brooks, and NetLibrary Inc. 1999. *In search of understanding the case for constructivist classrooms*. Alexandria, Va.: Association for Supervision and Curriculum Development. [.pdf of chapters 1-4, 10 is [here](#) for those registered for class]

**Week 5, 20 February: NO CLASS**

**Week 6, 27 February: Consensus conferences**

Einsiedel, Edna F. (2002). *Assessing a controversial medical*

technology: Canadian public consultations on xenotransplantation. *Public Understanding of Science*, 11(1): 1-17. [Journal [available online](#); .pdf of article is [here](#) for those registered for class]

Einsiedel, Edna, and Deborah L. Eastlick. (2001). Consensus conferences as deliberative democracy: A communications perspective. *Science Communication* 21 (4):323-343.

Einsiedel, E., Jelsøe, E., & Breck, T. (2001). Publics at the technology table: The consensus conference in Denmark, Canada, and Australia. *Public Understanding of Science*, 10(1), 83-98. [Journal [available online](#); .pdf of article is [here](#) for those registered for class]

Joss, S., & Durant, J. (1995). The UK National Consensus Conference on Plant Biotechnology. *Public Understanding of Science*, 4(2), 195-204. [Journal [available online](#); .pdf of article is [here](#) for those registered for class]

**Week 7: 6 March: Citizen science, version 1 (politics)**

Irwin, A. (2001). Constructing the scientific citizen: Science and democracy in the biosciences. *Public Understanding of Science*, 10(1), 1-18. [Journal [available online](#); .pdf of article is [here](#) for those registered for class]]

Sclove, R. (1995). *Democracy and Technology*. New York: Guilford. [Table of contents and excerpts from 2 chapters available at <http://www.loka.org/pubs/book.htm>; also explore Sclove's ideas through the links at <http://www.alteich.com/links/sclove.htm>.] [For those registered for class, [chapters 1-3](#) and [chapters 12-13](#) are available online.]

Epstein, S. (1996). *Impure science : AIDS, activism, and the politics of knowledge*. Berkeley, University of California Press. [For those registered for class, the [introduction](#) and the [conclusion](#) are available

online.]

Supplementary readings

Australian Cooperative Research Centre for Coastal Zone, Estuary and Waterway Management, website on citizen science:

[http://www.coastal.crc.org.au/citizen\\_science/](http://www.coastal.crc.org.au/citizen_science/).

Feynman, Richard Phillips. 1998. *The meaning of it all : thoughts of a citizen scientist*. Reading, Mass.: Addison-Wesley

Irwin, A. (1995). *Citizen science : a study of people, expertise, and sustainable development*. London ; New York: Routledge.

Von Hippel, Frank. 1991. *Citizen scientist, Masters of modern physics*. New York, NY: American Institute of Physics.

Schneider, Mycle (2001). "The Takagi Fund for Citizen Science,"

<http://www.wise-paris.org/english/reports/011008TakagiFundSpeech3.pdf>.

Schneider, Stephen H. 1986. Both Sides of the Fence: The Scientist as Source and Author. In *Scientists and Journalists: Reporting Science as News*, edited by S. M. Friedman, S. Dunwoody and C. L. Rogers. New York: The Free Press. [.pdf of article is [here](#) for those registered for class.]

**Week 8: 13 March: Citizen science, version 2 (education, "student-scientist partnerships") [Valery, Kerry]**

Brossard, D., Lewenstein, B., & Bonney, R. (in revision). Scientific Knowledge and Attitude Change: The Impact of a Citizen Science Project. *Science Education* (in revision). [Available [online](#) for those registered for class.]

Tinker, R., & Barstow, D. (Eds.). (1997). *Proceedings of the National Conference on Student & Science Partnerships*. Cambridge, MA: TERC. Available online at <http://www.terc.edu/spp/spp.html>.

### Supplementary readings

Cohen, K. C. (1997). *Internet links for science education : student-scientist partnership*. New York ; London: Plenum Press. [This is the edited and published version of Tinker & Barstow 1997, above.] [Table of contents and Introduction available [here](#) for those registered for class.]

Rob Ross and Paul Harnik from PRI have recently edited a special edition of the *Journal of Geoscience Education* on student-scientist partnerships. Some of their articles related to that issue are:

- Harnik, P. G., & Ross, R. M. (2003). Assessing Data Accuracy When Involving Students in Authentic Paleontological Research. *Journal of Geoscience Education*, 51(1), 76-84. [Available [online](#) for those registered for class.]
- Harnik, P. G., & Ross, R. M. (2003). Developing Effective K-16 Geoscience Research Partnerships. *Journal of Geoscience Education*, 51(1), 5-8. [Available [online](#) for those registered for class.]
- Ross, R. M., & Harnik, P. G. (2003, February). Student-scientist partnerships. *Geotimes*, 13, 37. [Available [online](#) for those registered for class.]
- Ross, R. M. et al. (2003). The Mastadon Matrix Project: An Experiment with Large-Scale Public Collaboration in Paleontological Research. *Journal of Geoscience Education*, 51(1), 39-47. [Available [online](#) for those registered for class.]

**SPRING BREAK, 20 March: NO CLASS**

**Week 9, 27 March: Participatory activities [Karen]**

Living knowledge: <http://www.scienceshops.org/> (Science Shops site;

see especially the SCIPAS [Study and Conference on Improving Public Access to Science] reports funded by European Commission). See also <http://www.ncsu.edu/chass/mds/scishop.html> and the database at <http://livingknowledge.org/>.

Wachelder, J. (2003). Democratizing Science: Various Routes and Visions of Dutch Science Shops. *Science, Technology & Human Values*, 28(2), 244-273. [.pdf of article is [here](#) for those registered for class.]

### Supplementary material

Bibliography on public participation, available from [University of Cincinnati Center for Environmental Communication Studies](#) (click on "Environmental communication bibliographies" button on lefthand side).

Joss, S. (editor) (1999). Public participation in science and technology [special issue]. *Science and Public Policy*, 26(5), 290-373. [Journal [available online](#).]

**Week 10, 3 April: Measuring engagement [Janie, Joanna]**

**[NOTE: THIS CLASS WILL BE RESCHEDULED TO A DIFFERENT DAY/TIME]**

Brossard, D., & Shanahan, J. (2003). Do They Want to Have Their Say? Media, Agricultural Biotechnology, and Authoritarian Views of Democratic Processes in Science. *Mass Communication and Society*, forthcoming. [.pdf of article is [here](#) for those registered for class]

Lauber, T.B. and B.A. Knuth. 1999. Measuring fairness in citizen participation: a case study of moose management. *Society and Natural Resources*. 12:19-37. [.pdf of article is [here](#) for those registered for class.]

Rowe, G., & Frewer, L. (2000). Public participation methods: A framework for evaluation. *Science, Technology & Human Values*, 25(1), 3-29.[Journal [available online](#); .pdf of article is [here](#) for those registered for class]

***Week 11, 10 April: Presentations***

***Week 12, 17 April: Presentations***

***Week 13, 24 April: Field trip to Sciencenter for opening of nanobiotech exhibit***

***Week 14, 1 May: Wrap up***

***Finals week, 15 May***

Final paper due

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For information, contact Bruce Lewenstein ([BVL1@cornell.edu](mailto:BVL1@cornell.edu))