

JCOM 640: Science Communication

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This syllabus is available in alternative formats upon request. Students with disabilities are responsible for making their needs known to the instructor and seeking assistance in a timely manner. Any student who feels he/she may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs, or contact the office for disability services at 292-3307 in Room 150 Pomerene Hall to coordinate your documented disabilities.

Academic Misconduct:

All students at the Ohio State University are bound by the Code of Student Conduct (see <http://www.osu.edu/units/stuaff/csc.php>). Violations of the code in this class, especially pertaining to 3335-23-04 Section A on Academic Misconduct, will be taken through the procedures the university has set up to deal with violations of the Code. Academic misconduct is any activity that compromises the academic integrity of the institution or subverts the educational process. Examples of academic misconduct include, but are not limited to:

- 1) Violation of course rules as contained in this course syllabus or other information provided.
- 2) Providing or receiving information during examinations, or providing or using unauthorized assistance on individual assignments.
- 3) Plagiarism, including the use of information from any uncredited source.
- 4) Alteration of grades or marks in an effort to change the earned grade or credit.
- 5) Failure to report incidents of academic misconduct.

In short, don't cheat on exams or assignments, don't plagiarize yourself or others, and treat everyone in this class with the respect they deserve. Take particular note of #5 above; if you observe others engaging in academic misconduct, you are required to let me know, otherwise you become a party to the misconduct. Students are encouraged to talk with the course instructor if they have any doubt about practices that might result in charges of academic misconduct against them. If I suspect an instance of academic misconduct in this class, I am required to notify the University

Committee on Academic Misconduct, in accordance with The Ohio State University Code of Student Conduct and rules of faculty governance.

Course Objectives

- 1) Understand the central function of communication in the relationship between science and the public.
- 2) Understand the central function of the mass media and journalists as intermediaries in the science communication process.
- 3) Understand the central function of communication in science policymaking and relative to science controversies.
- 4) Understand the varying roles that scientists and science communicators play as a profession in the above topics.
- 5) Continue to develop analytical, written, and oral skills.
- 6) Prepare you to work with a faculty member on research in a science communication-related area.
- 7) Introduce you to the field of science communication as a profession.

Course Description:

The aim of the course is to explore the structure, meanings, and implications of "science communication." We will investigate how values, attitudes, social structure, and communication affect public perceptions of science and technology. A primary focus will be mass media's impact in shaping public perceptions of science and technology, how the media portray science and technology, and a discussion of the role of scientists, journalists, science communicators, and policymakers in this process. The course will cover the function of public participation in science policymaking as well as the public's relationship to science-related controversies, such as the teaching of evolution in schools, or the debates over agricultural and reproductive biotechnologies.

Required Text:

- * Gregory, J. & Miller, S. (1998). Science in Public: Communication, Culture, and Credibility. New York: Plenum.

Texts on Reserve

- * Blum, D. & Knudson, M. eds. (1997). A Field Guide for Science Writers. New York: Oxford University Press.
- * Greenberg, D.S. (2003). Science, Money, and Politics: Political Triumph and Ethical Erosion. University of Chicago Press.
- * Kleinman, D.L. (2000). Science, Technology, & Democracy. Albany, NY: State University of New York.

Course Requirements for Undergraduate Students

Reaction Papers (30%): By the eighth week of class, you will need to have submitted 6 short reaction papers in which you address the readings, current news events, and corresponding class discussion for the first seven weeks of the quarter. Three of the focus papers should focus specifically on the assigned course readings. And the other three should focus on analysis of news and commentary articles appearing in either the *New York Times*, *Washington Post*, *Science*, or *Nature* during the quarter. This analysis of news coverage should apply the readings and discussion from class. The reaction papers should be approximately 800-1200 words in length. Do not summarize the readings or news reports, rather, instead describe your critical reaction to the readings and class discussion, the thoughts the readings provoked, and their relevance to the study of science communication.

Midterm (30%): The midterm will be in-class and consist of short answer essay questions that will ask you to analyze and integrate the readings in class to date.

Final (40%): The final will be in-class and will consist of short answer essay questions that will ask you to analyze and integrate the readings since the beginning of the quarter.

Course Requirements for Graduate Students

Reaction Papers (30%): By the eighth week of class, you will need to have submitted 6 short reaction papers in which you address the readings, current news events, and corresponding class discussion for the first seven weeks of the quarter. Three of the focus papers should focus specifically on the assigned course readings. And the other three should focus on analysis of news and commentary articles appearing in either the *New York Times*, *Washington Post*, *Science*, or *Nature* during the quarter. This analysis of news coverage should apply the readings and discussion from class. The reaction papers should be approximately 800-1200 words in length. Do not summarize the readings or news reports, rather, instead describe your critical reaction to the readings and class discussion, the thoughts the readings provoked, and their relevance to the study of science communication.

Take Home Final (30%): In the take home final, you will have your choice to answer three out of five essay questions that will ask you to analyze and integrate the readings in class.

Literature Review (40%): This paper will be a literature review and analysis of a topic covered in the course, approximately 20 pages in length. The paper is not a summary of the literature, but rather an integrated analysis. A paper could be "theoretical" in nature, covering the dimensions of theory and research in the area, posing a critical assessment of research to date, and offering directions for future theorizing and research, perhaps serving as the basis for an Honors thesis on the topic. Or the paper could be "applied" in nature, adapting the literature to improving the practice of science communication. It is important that you start thinking about your topic early. A one-page discussion of your chosen topic is due by the end of the sixth week of class, and you are encouraged to discuss topics with me before then.

COURSE SCHEDULE

WEEK 1 Introduction to Science Communication

- * Burns, T.W., O'Connor, D.J., & Stocklmayer (2003). Science Communication: A Contemporary Definition. Public Understanding of Science, 12, 183-202.
- * Lewenstein, B. V. (1994). A Survey of Public Communication of Science and Technology Activities in the United States. In B. Schiele (Ed.), When Science Becomes Culture (pp. 119-178). Boucherville, Quebec: University of Ottawa Press.

WEEK 2 Introduction to Science Communication (Continued)

- * Gregory, Jane, and Miller, Steve. (1998). Science in Public: Communication, Culture, and Credibility. New York: Plenum.

WEEK 3 Communication and Public Opinion About Science

- * Hilgartner, S. (1990). The Dominant View of Popularization: Conceptual Problems, Political Uses. Social Studies of Science, 20 (3), 519-539.
- * National Science Board (2004). Science and Engineering Indicators 2004. Washington, DC: National Science Foundation (Chapter 7).
- * Nisbet, M.C., Scheufele, D.A., Shanahan, J.E., Moy, P., Brossard, D., and Lewenstein, B. (2002). Knowledge, Reservations, or Promise? A Media Effects Model for Public Perceptions of Science and Technology. Communication Research, 29, 504-608.

WEEK 4 Science and the Media

- * Conrad, P. (1999). Uses of Expertise: Sources, Quotes, and Voice in the Reporting of Genetics in the News. Public Understanding of Science (8), 4, 285 - 302.
- * Dunwoody, S. (1980). The Science Writing Inner Club: A Communication Link Between Science and the Lay Public. Science, Technology, and Human Values, 30, 14-22.
- * Dunwoody, S. & Peters, H.P. (1992). Mass Media Coverage of Technological and Environmental risks: A Survey of Research in the United States and Germany. Public Understanding of Science, 1, 199-230.
- * Logan, R.A. (2001). Science Mass Communication: Its Conceptual History. Science Communication, 23 (2), 135-163.

WEEK 5 Science and the Media (Cont.)

- * Hilgartner, S. & Bosk, C.L. (1988). The Rise and Fall of Social Problems: A Public Arenas Model. American Journal of Sociology, 94, 53-78.

- * McComas, K. & Shanahan, J.E. (1999). Telling Stories about Global Climate Change: Measuring the Impact of Narratives on Issue Cycles. Communication Research, 26 (1), 30-57.
- * Nisbet, M.C., Brossard, D., & Kroepsch, A. (2003). Framing Science: The Stem Cell Controversy in an Age of Press/Politics. Harvard International Journal of Press/Politics, 8(2), 36-70.

WEEK 6 Science from the Perspective of the Journalist

- * Greenberg, D.S. (2003). Science, Money, and Politics: Political Triumph and Ethical Erosion. University of Chicago Press.
- * Blum, D. & Knudson, M. eds. (1997). A Field Guide for Science Writers. New York: Oxford University Press (Select Chapters).

WEEK 7 Science, Deliberation, and Public Participation

- * Kleinman, D.L. (2000). Science, Technology, & Democracy. Albany, NY: State University of New York.

WEEK 8 Science, Deliberation, and Public Participation (Cont.)

- * 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).
- * McComas, K.A. (2001). Theory and Practice of Public Meetings. Communication Theory, 11 (1), 36-55.

WEEK 9 Science as Public Controversy

- * Lewenstein, B. (1995). From Fax to Facts: Communication in the Cold Fusion Saga. Social Studies of Science, 25(3), 403-436.
- * Nelkin, D. (1995/2002). Science controversies: The dynamics of public disputes in the United States. In S. Jasanoff et al., (eds), Handbook of Science & Technology Studies, revised edition. Thousand Oaks, CA: Sage.

WEEK 10 Science Communication and the Case of Biotechnology

- * 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, 6 (3): 291-312.
- * Gaskell, G. & Allum, N. (2003) Europeans and Biotechnology in 2002: Eurobarometer 58.0. DG Research European Commission.
- * Marris, C., Wynne, B., Symmons, P. & Weldon, S. (2001). Public Perceptions of Agricultural Biotechnologies in Europe. Final Report of the PABE Research Project. Available at <http://www.checkbiotech.org/pdf/pubperc.pdf>.

