

Spring 2010
STSS 6962-01

Office hours: For graduate students I recommend that you email me first so that we can set up a half hour or hour to talk at leisure.

Course Content and Goals. This course will introduce students to fundamental concepts in STS by contrasting different problem areas and theoretical frameworks. Another goal is to provide students with a preliminary roadmap of points of entry into literatures, so that students will have some entry points for literature reviews.

Work and Grading Policy:

65% There will be 13 weekly writing assignments. These are short essays on the readings that are due at the start of the class. (There is no written assignment for the first class.) You should not repeat the readings but evaluate the concepts, arguments, etc. and compare them with other readings.

30% You will be assigned specific readings for in-class discussion.

20% This will be a discussion-style seminar, so class attendance and participation are important. It is disruptive to arrive late. Students who arrive late regularly will lose a letter grade. Missing a class for reasons other than conferences and illness will result in a half grade deduction.

Grade modifiers are now in effect. Grades will be +/-, with the following scale: 94-100 A, 90-93.99 A-, 87-89.99 B+, 84-86.99 B, 80-83.99 B-, 78-79.99 C+, 74-77.99 C, 70-73.99 C-, 68-89.99 D+, 64-67.99 D, 60-63.99 D-. Note that a borderline grade (e.g., 89.99) is rounded down.

Intellectual honesty policy: Students are free to study with other students and are in fact encouraged to discuss the readings outside class, but they are expected to write up weekly assignments individually. Individual assignments should be substantially different from one another. Students should not copy sources or take ideas from sources without providing a full citation (either footnote or name-and-date); plagiarism is described in the student handbook. The content of all lectures and handouts prepared by the professor are his property and should not be circulated to anyone who is not in the class, either in print or via electronic means. Posting of class notes electronically and plagiarism of assignments will result in an F in the class. By taking this course, you agree to complete the assignments, abide by the intellectual honesty policy, and attend class with the weekly reading and assignment completed before class.

An asterisk denotes common reading.

1. Interests and the Sociology of Knowledge

*Marx, Karl. "Marx on the History of his Opinions," or "Preface to 'A Contribution to the Critique of Political Economy,'" pp. 3-6 in R. Tucker, ed. *The Marx-Engels Reader* (Norton).

*Marx, Karl. "Theses on Feuerbach" and "The Ruling Class and Ruling Ideas," pp. 64-68 in *The German Ideology* (International Publishers).

Boris Hessen, *The Social and Economic Roots of Newton's Principia* (New York: Howard Fertig, 1971). Section on thermodynamics.

Elizabeth Potter. 2001. *Gender and Boyle's Law of Gases*. Conclusion: PP. 180-185. Indiana University Press.

MacKenzie, Donald. 1978. "Statistical Theory and Social Interests: A Case Study." *Social Studies of Science* 8: 35-83. See electronic journal collection.

Steve Woolgar, "Interests and Explanation in the Social Study of Science." *Social Studies of Science* 11(1981): 365-394.

2. Constructivist Science Studies

Bruno Latour and Steve Woolgar. "The Transformation of Statement Types." Pp. 81-88. *Laboratory Life*. Princeton University Press.

*Bruno Latour, "Ch. 6: Give Me a Laboratory and I will Raise the World." In Karin Knorr-Cetina and Michael Mulkay (eds.), *Science Observed* (Beverly Hills, Ca.: Sage, 1983). Pp. 141-170. (You will need to use the rotation button.)

*Bruno Latour, *We Have Never Been Modern*. Pp. 13-35.

Michel Callon, "Society in the Making." In Wiebe Bijker, Thomas Hughes, and Trevor Pinch, eds. *The Social Construction of Technological Systems*. MIT Press. Pp. 83-101.

Trevor Pinch and Wiebe Bijker. "The Social Construction of Facts and Artifacts." In Wiebe Bijker, Thomas Hughes, and Trevor Pinch, eds. *The Social Construction of Technological Systems*. MIT Press. Pp. 17-47.

Callon, Michel. 2007. "What Does It Mean to Say that Economics is Performative?" In *Do Economists Make Markets? On the Performativity of Economics*, ed. by Donald MacKenzie, Fabian Muniesa, and Lucia Siu. Princeton University Press. Pp. 311-354.

3. Criticisms and Counterpoints

Harry Collins and Steven Yearley. 1991. Epistemological Chicken. In Andrew Pickering (ed.), *Science as Practice and Culture*. University of Chicago. Pp. 301-324.

Yves Gingras. 1995. "Following Scientists Through Society? Yes, but at Arm's Length!" In Jed Buchwald (ed.), *Scientific Practice: Theories and Stories of Doing Physics*. University of Chicago Press. Pp. 123-148.

David Bloor. 1999. "Anti-Latour." *Studies in History and Philosophy of Science Part A*. 30(1): 81-112.

*Daniel Lee Kleinman, "Untangling Context: Understanding a University Laboratory in the Commercial World." *Science, Technology, and Human Values* 23.3(1998): 285-314.

Mirowski, Philip, and Edward Nik-Khah. 2007. "Markets Made Flesh: Performativity, and a Problem in Science Studies, Augmented with Consideration of FCC Auctions." In *Do Economics Make Markets? On the Performativity of Economics*, ed. by Donald MacKenzie, Fabian Muniesa, and Lucia Siu. Princeton University Press. Pp. 190-224.

Harding, Sandra. 2009. Ch.1. "Modernity's Misleading Dream: Latour." *Sciences from Below*. Duke University Press. Pp. 23-48. First page was folded.

4. The Field Sociology of Science

*Swartz, David. 1997. Ch. 6: "Fields of Struggle for Power" of *Culture & Power* (U Chicago). Pp. 117-142.

*Bourdieu, Pierre. 2004. Ch. 2 "A World Apart." *Science of Science and Reflexivity* (U Chicago Press). Pp. 32-84.

Albert, Matthieu. 2003. "Universities and the Market Economy: The Differential Impact on Knowledge Production in Sociology and Economics." *Higher Education* 45: 147-182.

Hess, David. Forthcoming. "Electricity Transformed: Neoliberalism and Local Energy in the United States." in *Antipode*.

5. Neoliberalism, Ideology, and Knowledge

Foucault, Michel. *The Birth of Biopolitics*. Chs. 11, 12. Pp. 267-313.

Bourdieu, Pierre. *Acts of Resistance*. "The Invisible Hand of the Powerful." Pp. 27-37.

*Bourdieu, Pierre. *Social Structures of the Economy*. Pp. 89-122.

Harvey, David. 2005. Ch. 4: Uneven Geographical Developments. In *A Brief History of Neoliberalism*, Oxford. Pp. 87-119.

*Peck J and Tickel A. 2007. "Conceptualizing Neoliberalism: Thinking Thatcherism." In H Leitner, E Sheppard, Sziarto K and Maringanti A (eds) *Contesting Urban Futures: Decentering Neoliberalism*. Pp. 26-50. New York: Guildford

Moore, Kelly, Scott Frickel, Daniel Kleinman, and David Hess. "Science and Neoliberal Globalization."

6. Asymmetric Convergence and Academic Capitalism

Kleinman, Daniel Lee, and Vallas, Steven. 2001. "Science, Capitalism, and the Rise of the 'Knowledge worker': The Changing Structure of Knowledge Production in the United States." *Theory and Society* 30: 451-492.

Nowotny, Helga, Peter Scott, and Michael Gibbons. 2003. "Mode Two Revisited: The New Production of Knowledge." *Minerva* 41(3): 179+17.

Harding, Sandra. 2008. "Co-evolving Science and Society." *Sciences from Below*. Duke University Press. Ch. 3. Pp. 75-97.

- Slaughter, Sheila and Gary Rhoades. 2004. *Academic Capitalism and the New Economy: Markets, State, and Higher Education*. Baltimore, MD: Johns Hopkins University Press. Ch. 1, "The Theory of Academic Capitalism," pp. 1-34, and Ch. 12, "The Academic Capitalist Learning/Knowledge Machine," pp. 305-338.
- *Vallas, Steven P. and Daniel Lee Kleinman. 2008. "Contradiction, Convergence, and the Knowledge Economy: The Co-Evolution of Academic and Commercial Biotechnology." *Socio-Economic Review* 6(2): 283-311.
- Whittington, Kjersten Bunker and Laurel Smith-Doerr. 2005. "Gender and Commercial Science: Women's Patenting in the Life Sciences." *Journal of Technology Transfer* 30: 355-370.

7. The Public Understanding of Science

- Wynne, Brian. 1996. "Misunderstood Misunderstandings: Social Identities and Public Update of Science." in Irwin, Alan, and Brian Wynne (eds). 1996. *Misunderstanding Science? The Public Reconstruction of Science and Technology*. Cambridge, UK: Cambridge University Press. Pp. 19-44.
- *Durant, Darrin. 2008. "Accounting for Expertise: Wynne and the Autonomy of the Lay Public Actor." *Public Understanding of Science* 17(1): 5-20.
- *Wynne, Brian. 2008. "Elephants in the Rooms Where Publics Encounter 'Science'?: A Response to Darrin Durant, 'Accounting for Expertise: Wynne and the Autonomy of the Lay Public,'" *Public Understanding of Science* 17(1): 21-33.
- Collins, Harry, and Robert Evans. 2004. "The Third Wave of Science Studies: Studies of Expertise and Experience." *Social Studies of Science* 32(2): 235-297.
- Yearley, Steven. 2000. "Making Systematic Sense of Public Discontents with Expert Knowledge: Two Analytical Approaches and a Case Study," *Public Understanding of Science* 9(2): 105-122.

8. Public Engagement of Science

- Guston, David. 1999. "Evaluating the First U.S. Consensus Conference: The Impact of the Citizens' Panel on Telecommunications and the Future of Democracy." *Science, Technology, and Human Values* 24(4): 451-482.
- Irwin, Alan. 2001. 'Constructing the Scientific Citizen: Science and Democracy in the Biosciences,' *Public Understanding of Science* 10(1): 1-18.
- *Irwin, Alan. 2006. "The Politics of Talk." *Social Studies of Science* 36: 299-320.
- Lezaun, J. and Soneryd, L. 2007. "Consulting Citizens: Technologies of Elicitation and the Mobility of Publics." *Public Understanding of Science* 16(3): 279-297.
- Powell, M. and D. Kleinman. 2008. "Building Citizen Capacities for Participation in Nanotechnology Decision-Making: The Democratic Virtues of the Consensus Conference Model." *Public Understanding of Science* 17(3): 329-348.
- Rogers-Hayden, Tee, and Nick Pidgeon. 2007. "Moving Engagement 'Upstream'?: Nanotechnologies and the Royal Society and Royal Academy of Engineering's Inquiry." *Public Understanding of Science* 16(3): 345-364.

*Wynne, B. (2007a) 'Public Engagement as a Means of Restoring Public Trust in Science: Hitting the Notes, but Missing the Music?' *Community Genetics* 9(3): 211-220

9. Publics and Counterpublics

Habermas, Jürgen. "From a Culture-Debating to a Culture-Consuming Public." Pp. 159-175 in *The Structural Transformation of the Public Sphere*. MIT Press.

Habermas, Jürgen. 1992. 'Further Reflections on the Public Sphere.' In C. Calhoun (ed) *Habermas and the Public Sphere*, pp. 421-461. Cambridge, MA: MIT Press.

Bourdieu, Pierre. 1997. *Pascalian Meditations*. Stanford, CA: Stanford University Press. Pp. 65-73.

Fischer, Frank. 2009. Ch. 5: "Technical Knowledge in Public Deliberation"; Ch. 10 "Passionate Participants". *Democracy and Expertise*.

*Fraser, Nancy. 1997. *Justice Interruptus: Critical Reflections on the 'Postsocialist' Condition*. New York: Routledge. Ch. 3 (pp. 69-93).

*Hess, David. Forthcoming. "To Tell the Truth: On Scientific Counterpublics." *Public Understanding of Science*.

10. Knowledge, Technology, and Social Movements

Moore, Kelly. 2006. "Powered by the People: Scientific Authority in Participatory Science." Pp. 299-332 in *The New Political Sociology of Science*, ed. by Scott Frickel and Kelly Moore. Madison, WI: University of Wisconsin Press.

*Allen, Barbara. 2004. "Shifting Boundary Work: Issues and Tensions in Environmental Health Science in the Case of Grand Bois, Louisiana." *Science as Culture* 13(4): 429-448.

*Frickel, Scott. 2005. "When Convention Becomes Contentious: Organizing Science Activism in Genetic Toxicology." In *The New Political Sociology of Science*, ed. by Scott Frickel and Kelly Moore. Madison, WI: University of Wisconsin Press. Pp. 185-213.

Klawiter, Maren. 2005. "Regulatory Shifts, Pharmaceutical Scripts, and the New Consumption Junction." *The New Political Sociology of Science*, ed. by Scott Frickel and Kelly Moore. Madison, WI: University of Wisconsin Press. Pp. 432-457.

Morello-Frosch, Rachel, Stephen Zavestoski, Phil Brown, et al. 2005. "Embodied Health Movements: Response to a 'Scientitized' World." in Scott Frickel and Kelly Moore (eds), *The New Political Sociology of Science*. U Wisconsin. Pp. 244-268.

Hess, David. 2010. "Nanotechnology, Risk, and Civil Society." *Science as Culture* 19(2): 181-214.

11. Ignorance, Risk, and Undone Science

Gross, Mathias. 2010. Ch. 3: "Knowledge Production and the Recurrence of Ignorance." *Ignorance and Surprise: Science, Society, and Ecological Design*. MIT Press. Selection.

Hoffmann-Riem, Holger, and Brian Wynne. 2002. "In risk assessment, one has to admit ignorance." *Nature* 416(March 14): 123.

Levidow, Les. 2002. "Ignorance-based risk assessment? Scientific controversy over GM food safety." *Science as Culture* 11(1): 61-67.

*Brian Wynne. 2005. "Risk as Globalizing 'Democratic' Discourse? Framing Subjects and Citizens." In Melissa Leach, Ian Scoones, and Brian Wynne, eds., *Science and Citizens: Globalization and the Challenge of Engagement*. London: Zed. Pp. 66-82.

Frickel, Scott, and M. B. Vincent. 2007. "Katrina, Contamination, and the Unintended Organization of Ignorance." *Technology in Society* 29:181-188.

Frickel, Scott, Sahra Gibbon, Jeff Howard, Joanna Kempner, Gwen Ottinger, and David Hess. 2010. "Undone Science: Charting Social Movement and Civil Society Challenges to Research Agenda Settings." *Science, Technology, and Human Values* 35(4): 444-473.

Hess, David. 2009. "The Potentials and Limitations of Civil Society Research: Getting Undone Science Done." *Sociological Inquiry* 79(3): 306-327.

12. Regulation and Technology

Kinchy, Abby, Daniel Lee Kleinman, and Robyn Autry. 2008. "Against Free Markets, Against Science? Regulating the Socio-economic Effects of Biotechnology." *Rural Sociology* 73(2): 147-180.

Kleinman, Daniel Lee, and Abby Kinchy. 2007. "Against the Neoliberal Steamroller? The Biosafety Protocol and the Social Regulation of Agricultural Biotechnology." *Agriculture and Human Values* 24(2): 195-206.

Kleinman, Daniel Lee and Abby J. Kinchy. 2003. "Why Ban Bovine Growth Hormone? Science, Social Welfare, and the Divergent Biotech Policy Landscapes in Europe and the United States." *Science as Culture* 12 (3): 375-414

Kleinman, Daniel, et al. 2008. "Beyond the Precautionary Principle in Progressive Politics: Toward the Social Regulation of Genetically Modified Organisms." *Tailoring Biotechnology*. Forthcoming.

13. Review

David Hess, *Science Studies: An Advanced Introduction*. Second edition.

Brian Wynne. 2007b. "Risky Delusions: Misunderstanding Science and Misperforming Publics in the GE Crops Issue." Pp. 341-372 in *Genetically Engineered Crops: Interim Policies, Uncertain Legislation*, ed. by Iain Taylor. New York: Haworth Food and Agricultural Products Press.

Toxic Exposures and the Challenge of Environmental Health. Columbia University Press.
Hess, David. "To Tell the Truth: On Scientific Counterpublics." *Public Understanding of Science*.

Kinchy, Abby, Daniel Lee Kleinman, and Robyn Autry. 2008. "Against Free Markets, Against Science? Regulating the Socio-economic Effects of Biotechnology." *Rural Sociology* 73(2): 147-180.

Kleinman, Daniel Lee, and Abby Kinchy. 2007. "Against the Neoliberal Steamroller? The Biosafety Protocol and the Social Regulation of Agricultural Biotechnology." *Agriculture and Human Values* 24(2): 195-206.

Moore, Kelly, 2008. *Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945-1975*. Princeton: Princeton University Press. Chapter:

Gibbons, Michael, Camille Limoges, Helga Nowotny, Simon Schwartzman, Peter Scott, and Martin Trow. 1994. *The New Production of Knowledge: The Dynamics of Science and Research in Contemporary Societies*. London: Sage.

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