

SOCI 613: SOCIOLOGY OF SCIENCE

Spring 2006

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Class time: Tuesdays, 3:30 – 6 pm in Newcomb 308
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In the past two decades we have witnessed a sea change in the influence that science has in shaping the course of human life and the fabric of popular culture. From advances in molecular biology to explorations in deep space, from biological warfare to gene therapies, from nanotechnology to the internet, ours is a society organized largely by and through expert knowledge systems. Paradoxically, as society becomes increasingly dependent on scientific expertise, science itself seems increasingly vulnerable to attack. Creationism and, more recently, “Intelligent design theory” contest the basic tenets of Darwinian theories of natural selection; AIDS activists challenge the medical establishment to redesign drug-testing protocols to take patients’ lives into account (and succeed); the Bush administration rejects the Kyoto Protocol on global warming as premature despite international scientific consensus that climate change is already occurring. The past two decades also have seen a similar sea change in social studies of science and scientific knowledge. Where once social scientists accepted the notion that science was a “citadel on a hill” – apart from but kindly and reverently watching over society – deference today has given way to critical analyses of science, scientists, and the systems of knowledge production they create, maintain, and (when necessary) defend.

This course surveys recent developments in the sociological study of science and scientific knowledge. We will examine a number of critical perspectives on science that fall roughly into two sociological domains: the cultural and the political. In examining the cultures of science, questions we will want to ask include, to what extent is scientific knowledge *socially* constructed? For that matter, what makes a fact a fact? On what basis do scientists gain their cultural authority as experts and keepers of truth? A political sociology of science attends to a different, although complementary, set of questions: who decides what knowledge is made, how and where it is made, and who has access to it? Why are certain kinds of knowledge not made?

Hurricane Katrina and the subsequent drowning of New Orleans bring all of these questions front and center. While we will consider a number of topical issues throughout the semester, our central theme will be the uncertainty and risk surrounding and infusing environmental knowledge.

Required Reading

The following required books may be purchased at the University Center Bookstore.

1. Latour, Politics of Nature (Harvard, 2004)
2. Hacking, The Social Construction of What? (Harvard, 1999)
3. Kleinman, Impure Cultures (Wisconsin, 2003)
4. Allen, Uneasy Alchemy (MIT, 2004)
5. Frickel, Chemical Consequences (Rutgers, 2004)
6. Frickel and Moore, eds. The New Political Sociology of Science (Wisconsin, 2006)
7. Van Loon, Risk and Technological Culture (Routledge, 2002)* on order

Additional readings and documents will be made available through Black Board (BB).

Policy

Class meetings will center on discussion of assigned readings and the broader issues to which those readings speak. I will provide background information as needed in order to deepen the level of discussion, but will keep lectures brief. It is essential to the success of the class that participants attend class, arrive prepared, and actively and regularly participate in discussion. The typical discussion rules apply here: active participation is welcome but overly-assertive participation that discourages the involvement of others is not.

Attendance: Full and active participation in this course requires showing up for class. Attendance will factor into students' participation grade (see below).

Black Board: It is essential that students have a working Tulane R6000 email account that enables them to access Black Board. Technological difficulties with your account are your responsibility to clear up as soon as possible and do not constitute a viable excuse for missing an assignment.

Optional Service Learning Credit: This course provides an opportunity for students to earn an extra fourth credit through the Office of Service Learning. Details will be provided in class.

Honor code: Academic honesty is expected of all students at Tulane University. Your responsibilities as a Tulane student include being familiar with the honor code and the plagiarism policy of the university. Cases of cheating or plagiarism will be reported to the Honor Board and may result in a failing grade for the class, academic probation, or expulsion.

Students with disabilities: Students with disabilities should talk to me and the Office of Disability Services (865-5113) *within the first two weeks of class* so that we can establish guidelines and make any necessary arrangements.

Grading

1. Participation. This is a reading and discussion course. It is expected that students will keep up with the readings, come to class prepared, and participate in discussion. Showing up to class is crucial, so I will take attendance. Students may miss one class with no adverse effect on their grade. More than one absence will be treated as evidence of poor participation. In-class discussion is also important. Regular, high-quality input to class discussions can increase your grade, while lack of participation can lower your grade.

Undergraduates: 10%

Graduate students: not graded, but regular active participation is absolutely required and expected.

2. Reaction memos. Each week students will submit a brief memo that critically addresses that week's readings (up to two pages). Memos are designed to facilitate critical thinking about an article or book section and should not be mere summaries. Instead, engage the reading: What were the authors' main points? Were the arguments convincing? Why or why not? What was it about the readings that interested you? Why? Post these to the class discussion board on Black Board by 3:30 on Monday. This gives me (and others) 24 hours to read and grade students' comments.

I will grade memos on a scale of 0-5. At the end of the semester, I will drop the two lowest memo grades. Because this is part of course preparation, memos submitted after the deadline, but before class will automatically be reduced 2 points. Memos submitted to me personally, but not posted on Black Board will also be reduced 2 points. Memos submitted after class will not be accepted.

Undergraduates: 20%

Graduate students: 15%

3. Discussion organizer. Each week, one student will present a brief (10 minutes) synthesis of the weekly readings and pose a series of questions for class discussion. In these presentations, students should not present a blow-by-blow summary of each reading, but instead highlight the main points and discuss how the articles or chapters relate to one another, using your analysis to generate a series of questions that will guide class discussion. Other students' memos will be helpful in this respect, and some sort of warm-up exercise is often useful for getting discussion off to a good start. Be creative! I am happy to offer assistance to those who request it.

Undergraduates: 20%

Graduate Students: 15%

4. Class project. Students will prepare a collective research report that critically examines claims by local experts and public officials that New Orleans is "safe." We will use class time to organize the project, develop a strategy for research, discuss preliminary findings, and troubleshoot obstacles that arise. The final report will be made available to the public.

Undergraduates: 20%

Graduate students: 15%

5a. Final exam. Undergraduates will submit an open book essay take-home exam. Questions will be made available on Black Board 72 hours before a typed, printed copy of the exam is due. Further details will be provided in class.

Undergraduates: 30%

5b. Final term paper. Graduate students will write a 20-page term paper on a course-relevant topic of their choice. Students should discuss their ideas with me in advance. Graduate students will present their research using Power Point in a "Sociology of Science Mini-Conference" held the last day of class. Presentations will run for approximately 20 minutes, with time afterwards for audience questions and discussion.

Graduate students: Power Point presentation: 15%

Research Paper: 40%

Reading Schedule:

Week 1 (1/17): Course introduction

"Toxic Gumbo"; "NOLA is safe for kids"; NIEHS preformatted map; GIS data layer map
(all on BB, external links)

I. CULTURAL SOCIOLOGIES OF SCIENTIFIC KNOWLEDGE

Weeks 2 (1/24) and 3 (1/31): Science and the culture wars

Social Construction of What?

Weeks 4 (2/7) and 5 (2/14): The world according to Bruno Latour

Politics of Nature

Week 6 (2/21): Laboratory business

Impure Cultures

Weeks 7 (2/28) and Week 8 (3/7): Managing uncertainty

Risk and Technological Culture

II. POLITICAL SOCIOLOGY OF SCIENCE

Week 9 (3/14): Science and the market
NPSS, Introduction and Part I

Week 10 (3/21): Science and the state
NPSS, Part III

Week 11 (3/28): Science and social movements
NPSS, Part II

Weeks 12 (4/6) and 13 (4/11): Scientific Movements
“A General Theory of SIMs” (BB); additional reading TBA
Chemical Consequences

Week 14 (4/18): TBA (Movie? Press release? Field trip?)
No reading
Class project due

Week 15 (4/25): Sociology of Science Mini-Conference
Graduate student presentations
Take-home Exam/Research papers due