

## *Sociology of Science*

HTS 3082

3:05 pm - 4:25 pm TR  
Molecular Sciences & Engr 1201A

Jan 10, 2011 - May 06, 2011

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**Introduction:** My objective in teaching this course is to introduce you to using a sociological, cultural, philosophical and historical imagination to explore science and society through classroom discussions, readings and assignments. We will explore and analyze what science is as well as how it works.

### Learning Outcomes:

- Complete an annotated bibliography.
- Examine and analyze science from a sociological perspective by applying sociological definitions and concepts.
- Describe the interdependence/co-construction of science and society.
- Apply a historical and socio-cultural framework to describe a scientific discovery, concept or application.
- Analyze a current issue in science with regards to public understanding of science, authority, risk, ethics, and inequality.

### Book:

Ravetz, Jerome. 2006. *The no-nonsense guide to science*. Oxford: New Internationalist.

Additional readings in the Library, see list at the end.

### Course Requirements:

#### **Attendance and Participation:**

You are expected to be present for the entire class to be counted as present and to receive 1 pt. You must be present for the entire class period to submit work timely on the due date. In addition class participation is valued at 1 pt per day.

**Critical Reflection Papers** (10 pts each) will be submitted every Thursday starting 27 Jan until 30 March 2011. A critical reflection paper is a one page, single space word essay that analyzes your thoughts and questions about that readings assigned that week (touch upon as many of the weeks readings as possible and still create coherent paragraphs). The CRP includes the reading scheduled for the day it is due. Critical reflection papers are a chance for you *to think critically* about the readings. Questions to ask yourself while writing: why it is the way it is? What are implications of this idea? What is the reading telling me about science? society? Identify and explore patterns that tell you something about the relationship of science and society, and provide support for your ideas. Think about how science has

changed and why? Or the ways we think about science? Please use proper citation methods in your paper. (This is a single authored assignment if you would like to incorporate ideas from another, illustrate that with a reference.) For help with your writing consult: *A rulebook for arguments* / Anthony Weston. Edition: 4th edition. Publisher: Indianapolis: Hackett Pub., c2009.

**Class Presentations 30pts:** Working in pairs/triads you will pick one of the sociological concepts listed in Table 1 to present the concept to the class along with three examples of how this concept has been used to study, analyze, interpret and or explain science (or some aspect of it.) Please visit the approved journals, in order to find a research example of the concept being used and applied in the sociology of science. Please ensure that one copy of the presentation is submitted via the drop box in T-Square before class on the day of your presentation, include a bibliography and names of all partners.

Please visit any of the following approved journals for this assignment:

*Science as Culture; Science, Technology and Human Values; Social Studies of Science; Social Epistemology; Bulletin of Science Technology and Society; Signs; Studies in History and Philosophy of Science; Isis; Science Communication, Studies in Sociology of Science*

**Annotated Bibliography Assignment Due 19 April (50 pts):**

The annotated bibliography should provide the full reference material for at least **twenty (20)** journal articles, books, or other material on your selected topic within the sociology of science. Please submit an email by the 19 March to the instructor on your topic for approval. The references may be formatted according to ASA, APA, MLA or Chicago style, but must be consistent throughout. Eighty percent of the references should be academic or research articles from peer reviewed journals such as the journals listed in the class presentation assignment. The remaining 20% references may refer to materials in the popular press, video recordings, or electronic resources.

1. **Annotation:** Each reference should be followed by a 3-5 sentence description of the material, including a **summary** and **evaluation**.
2. **Organization:** After annotating all of the references, review the summaries looking for common themes (at least three). These themes can be substantive, theoretical, methodological, or some combination. Then divide all your references into these categories and list them alphabetically by first author.
3. **Introduction:** The final stage of the annotated bibliography is to write a two to three paragraph introduction to the bibliography. In this introduction you will: briefly describe significance of the topic to the sociology of science; explain the organization of the bibliography and the importance of the themes; and identify any gaps in the literature. Finally, before each new theme provide a two to three sentence description of that theme.

For information about what an annotated bibliography is please visit:

- <http://www.library.cornell.edu/olinuris/ref/research/skill28.htm>
- <http://lib.calpoly.edu/research/guides/bibliography.html>

**Poster Session (26, 28 April):** 25pts. Prepare a presentation using paper, computer or some other artifact that will be presented to one or two people simultaneously that (1) illustrates a concept from our readings and discussion that reflects a more nuanced understanding of science or of science in society OR (2) presents and summarizes your final paper.

**Final Paper (80 pts):** Due 4th May at 12 noon – this is to be submitted via the drop box in T-Square. The paper is to be 8-10 pages double spaced. Please include a clear introduction, supporting paragraphs, a conclusion and a bibliography that includes at least 5-8 class readings, and at least 3 readings from science studies that you found outside of class readings that supplement and contribute to your essay in a meaningful way.

The goal of the paper is to illustrate that you can describe, analyze and discuss science from a sociological imagination. You may do this by picking an aspect of science such as objectivity, truth, facts, authority, expertise, peer review, controversy, practices, norms, and/or power to name just a few to illustrate what it means to apply the sociological imagination to studying science.

- c. Wright Mills: **sociological imagination** – enables us to understand the larger historical/social picture and its meaning in our own lives. Our experiences are personal, however, it is possible to also view them as products of society. Sociology can help us interpret our lives and social experiences.

**TABLE 1**

Week	Reading Tuesday	Reading Thursday	Sociological Concept	Who
11, 13 Jan		Newman Part I	Sociological Imagination	
18, 20 Jan	Newman Part II,	Latour, Khalifa	Science as an Institution	
25, 27 Jan	Ravetz chp 1 & 2	Kuhn, Spanier	Cultural Variation	
1, 3 Feb	National Sci. Acad. Lynch and Law,	Ravetz chp 3 & 4	Norms and Values	
8, 10 Feb	Collins, Latour and Woolgar	Lampland and Star,	Science as Culture	
15, 17 Feb	Ravetz chp 5 & 6	Callon	Socialization	
22, 24 Feb	Ravetz chp 7, 8 & 9	STHV Vol 36, no 3 May 2011	Social Control	
1, 3 Mar	Traweek, Keller	Hood, Creese, Hilts	Life Course	
8, 10 Mar	Lewontin et al.,	Haraway	Stratification/ Inequality	
15, 17 Mar	Martin, B. <i>Norms of Sci 1-5</i>	Hackett-18 <i>Peer Review 6-10</i>	Organizational Culture	
	🌸 Spring 🌸	🌸 Break 🌸		
29, 31 Mar	Slayton, <i>Politics &amp; Sci 11-13</i>	Stepan, E. Martin <i>Metaphors 14-15</i>	Social Structure	
5, 7 April	Merton, Rossiter <i>Matthew/Matilda 16-17</i>	Karnik <i>Public Participation 18 -22</i>	Deviance	
12, 14 Apr	Barbot and Dodier <i>Classification 23-26</i>	Mody <i>Big vs Little Science 27-29</i>	Social Interaction	
19, 21 Apr	Rawling, Hackett-19 <i>International Science 29-35</i>	Epstein, S. <i>Alternative Science 36-42</i>	Social Change	
26, 28 Apr	Poster Session	Poster Session		

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### Readings accessible through the library EBook:

*National Academy of Sciences* "Methods and Values in Science." Pages 341-343 in Harding, Sandra G. 1993. *The "Racial" economy of science toward a democratic future*. Bloomington: Indiana University Press. <http://www.netlibrary.com/urlapi.asp?action=summary&v=1&bookid=1265>.

*R. C. Lewontin, Steven Rose, and Leon J. Kamin* "IQ: The Rank Ordering of the World." Pages 142-160 in Harding, Sandra G. 1993. *The "Racial" economy of science toward a democratic future*. Bloomington: Indiana University Press. <http://www.netlibrary.com/urlapi.asp?action=summary&v=1&bookid=1265>.

*Nancy Leys Stepan* "Race and Gender: The Role of Analogy in Science." Pages 359-377 in Harding, Sandra G. 1993. *The "Racial" economy of science toward a democratic future*. Bloomington: Indiana University Press. <http://www.netlibrary.com/urlapi.asp?action=summary&v=1&bookid=1265>.

### Readings accessible through JSTOR:

The Matthew Effect in Science, II: Cumulative Advantage and the Symbolism of Intellectual Property  
Author(s): Robert K. Merton Source: *Isis*, Vol. 79, No. 4 (Dec., 1988), pp. 606-623  
Published by: The University of Chicago Press on behalf of The History of Science Society Stable  
URL: <http://www.jstor.org/stable/234750>.

The Matthew Matilda Effect in Science Author(s): Margaret W. Rossiter Source: *Social Studies of Science*, Vol. 23, No. 2 (May, 1993), pp. 325-341 Published by: [Sage Publications, Ltd.](#) Stable  
URL: <http://www.jstor.org/stable/285482>

The Construction of Lay Expertise: AIDS Activism and the Forging of Credibility in the Reform of Clinical Trials Author(s): **Steven Epstein** Source: *Science, Technology, & Human Values*, Vol. 20, No. 4, Special Issue: Constructivist Perspectives on Medical Work: Medical Practices and Science and Technology Studies (Autumn, 1995), pp. 408-437 Stable URL: <http://www.jstor.org/stable/689868>

The AIDS Virus Dispute: Awarding Priority for the Discovery of the Human Immunodeficiency Virus (HIV) Author(s): **Alison Rawling** Source: *Science, Technology, & Human Values*, Vol. 19, No. 3 (Summer, 1994), pp. 342-360 Stable URL: <http://www.jstor.org/stable/690029>

Locating HIV/AIDS and India: Cautionary Notes on the Globalization of Categories  
Author(s): **Niranjan S. Karnik** Source: *Science, Technology, & Human Values*, Vol. 26, No. 3 (Summer, 2001), pp. 322-348 Stable URL: <http://www.jstor.org/stable/690266>

Multiplicity in Scientific Medicine: The Experience of HIV-Positive Patients  
Author(s): **Janine Barbot and Nicolas Dodier** Source: *Science, Technology, & Human Values*, Vol. 27, No. 3 (Summer, 2002), pp. 404-440 Stable URL: <http://www.jstor.org/stable/690251>

Sticking a Needle into Science: The Case of Polio Vaccines and the Origin of AIDS  
Author(s): Brian Martin Source: *Social Studies of Science*, Vol. 26, No. 2, Special Issue on 'The Politics of SSK: Neutrality, Commitment and beyond' (May, 1996), pp. 245-276 Stable  
URL: <http://www.jstor.org/stable/285419>

Khalifa, Kareem. "Social Constructivism and the Aims of Science." *Social Epistemology* 24.1 (2010): 45-61. *Academic Search Complete*. EBSCO. Web. 28 Apr. 2011.

Rebecca Slayton Discursive Choices: Boycotting Star Wars between Science and Politics  
 Author(s): Source: Social Studies of Science, Vol. 37, No. 1 (Feb., 2007), pp. 27-66  
 Published by: Sage Publications, Ltd. Stable URL: <http://www.jstor.org/stable/25474497>

Cyrus C. M. Mody The Sounds of Science: Listening to Laboratory Practice  
[Science, Technology, & Human Values](#) Vol. 30, No. 2 (Spring, 2005) (pp. 175-198)

## Library Reserve:

1. Thomas S Kuhn (1963) "Scientific Paradigms" pp 80-104 in *Sociology of Science* edited by Barry Barnes, Middlesex: Penguin Books 1972
2. Bruno Latour and Steve Woolgar *Laboratory Life: The construction of a scientific fact*. Princeton: Princeton 1986. Chp 2 & 6
3. Michel Callon, "Some Elements of a sociology of translation: Domestication of the Scallops and the Fishermen of St Brieuc Bay", in John Law (ed) *Power, Action and Belief: A New Sociology of Knowledge?*, (1986), 196-233.
4. Bruno Latour, "Give me a Laboratory and I will Raise the World", in Knorr-Cetina and Mulkay (eds) *Science Observed*. (1983), 141-70.
5. Michael Lynch and John Law "Pictures, Texts, and Objects: The Literary Language Game of Bird-Watching" pp 317-341 in *The Science Studies Reader* edited by Mario Biagioli, New York and London: Routledge, 1999.
6. Emily Martin "Toward an Anthropology of Immunology: The Body as Nation State" pp 358-371 in *The Science Studies Reader* edited by Mario Biagioli, New York and London: Routledge, 1999.
7. Donna Haraway "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective" pp 172-188 in *The Science Studies Reader* edited by Mario Biagioli, New York and London: Routledge, 1999.
8. Sharon Traweek "Pilgrim's Progress: Male Tales Told during a Life in Physics" pp 525-542 in *The Science Studies Reader* edited by Mario Biagioli, New York and London: Routledge, 1999.
9. Evelyn Fox Keller "From Working Scientist to Feminist Critic" pp 59-62 in *The Gender and Science Reader* edited by Muriel Lederman and Ingrid Bartsch, London and New York: Routledge 2001.
10. Bonnie Spanier "From Molecues to Brains, Normal Science Supports Sexist Beliefs about Difference" pp 367-372 in *The Gender and Science Reader* edited by Muriel Lederman and Ingrid Bartsch, London and New York: Routledge 2001.
11. H.M. Collins "Tacit Knowledge and Scientific Networks" pp 44-64 in *Science in Context* edited by Barry Barnes and David Edge, Milton Keynes: The Open University Press, 1982.
12. Martha Lampland and Susan Leigh Star. 2009. *Standards and their stories: how quantifying, classifying, and formalizing practices shape everyday life*. Ithaca: Cornell University Press. Pages 3-34.
13. David Newman 2010. *Sociology exploring the architecture of everyday life ; brief edition*. Thousand Oaks, Calif: Pine Forge Press.
14. Hood, Robert 2003. Chapter 1 "AIDS, Crisis and Activist Science" pps. 15-25 Figueroa, Robert, and Sandra G. Harding. Eds. *Science and other cultures: issues in philosophies of science and technology*. New York: Routledge.
15. Creese, A., A. Floyd, A. Alban and L. Guinness, from "Cost-effectiveness of HIV/AIDS interventions in Africa: A Systematic Review of the Evidence," *The Lancet*. Vol. 359, 2002 In Moseley's Taking Sides for Africa.
16. Hiltz, Philip J., from "Changing Minds: Botswana Beats Back AIDS." From *Rx for Survival: Why We Must Rise to the Global Challenge* (London: Penguin Books, 2005) In Moseley's Taking Sides for Africa.
17. Edward J. Hackett, "The Place of Peer Review in Science and Science Policy," in Mark Frankel and Jane Cave, eds., *Evaluating Science and Scientists*. Budapest: Central European University Press, 1997.

18. Edward J. Hackett, "A Social Control Perspective on Scientific Misconduct," Journal of Higher Education 65(3):242-260, 1994. Reprinted in John Braxton, ed., Perspectives on Scholarly Misconduct in the Sciences. Columbus, Ohio: Ohio State University Press, 1999.

**Grading Scale:**

Your Points/Total Points = 90% and above)	= A
Your Points/Total Points = 80% to 89%	= B
Your Points/Total Points = 70% to 79%	= C
Your Points/Total Points = 60% to 69%	= D
Your Points/Total Points = less than 59%	= Failing

**General Notice:**

All writing assignments are to be typed with a 10 or 12 point font. If this is a hardship for you, please see me. Please use gender neutral pronouns (i.e. he/she, they) and proper citations. All written work is to be your own original work and may not have been submitted in another class for a grade. Plagiarism violates GaTech's code of conduct and students who plagiarize will be reported to the Dean of Students. If you have any questions whatsoever, read the Honor Code and discuss it with me. It is available at: [www.deanofstudents.gatech.edu/Policy/code.in.sections.htm#AHC](http://www.deanofstudents.gatech.edu/Policy/code.in.sections.htm#AHC).

Always use proper citation practices. If you have questions about writing and citation practices, please see me and/or the library's website: [http://www.library.gatech.edu/search/citation\\_guide.php](http://www.library.gatech.edu/search/citation_guide.php). If it should happen that you need to deviate from the established syllabus in any way for any reason please be respectful of yourself, your classmates and the instructor by attending to the situation in a respectful, honest and professional manner.

Georgia Tech complies with the regulations of the Americans with Disabilities Act of 1990 and offers accommodations to students with disabilities. If you are in need of a classroom accommodation, please make an appointment with the ADAPTS office to discuss the appropriate procedures as soon as possible in order for us to make appropriate modifications to ensure your success in HTS 3082. The website for ADAPTS is: <http://adapts.gatech.edu>. Please note that accommodations can only be made for the future.

The instructor reserves the right to alter the syllabus as needed. All changes will be announced in class and on T-Square. It is the student's responsibility to stay informed.