

**HTS 3082 A — SOCIOLOGY OF SCIENCE  
GEORGIA INSTITUTE OF TECHNOLOGY  
SPRING 2014**

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**Office:** Old Civil Engineering Bldg. G-22

**Meeting Time:** Tues & Thurs, 1:35 – 2:55 pm  
**Room:** DM Smith, Rm. 304  
**Office Hours:** Tues. & Thurs.: 3:05- 4:35 pm  
or by appointment

**How to contact the instructor:** Please contact Professor Singh by using the T-Square site dedicated to the course. I will respond to your e-mails within 36 hours.

**COURSE DESCRIPTION**

The aim of this course is to undertake a detailed examination of the sociological contributions to the analysis of science. Students will be able to describe the social, political, and economic forces that influence social behavior through the examination of complex relationships between science and society and a sociological examination of the process by which knowledge is produced. Students will demonstrate that they have met the Area E social science learning outcome by writing five critical analyses based on weekly assigned readings; a written sociological analysis of a controversial scientific issue; and an 8-10 page paper and poster presentation that describes, analyzes and discusses science using theories and/or concepts learned in the course. The students will also engage in contemporary scientific issues by picking a media representation of science and relating it to course content in a ten-minute discussion to the class.

This course will take up two primary lines of inquiry.

- 1) How is scientific knowledge produced? In what ways, if any, does sociological analysis of the production of scientific knowledge illuminate dimensions of social structure and social process?
- 2) How do sociologists explain the role and consequences of scientific knowledge in contemporary society? What do we learn from such analyses about contemporary social life?

Because these are not only empirical, but also deeply theoretical questions, answering them requires that we read across the history and philosophy of science, in addition to engaging with contemporary writings in the sociology of science and science and technology studies (STS). This semester, the course will focus specifically on science and technology in relationship to health, illness, and medical practices.

## **COURSE OBJECTIVES**

In addition to Area E social science learning objective described above, because of taking this course, students will:

1. Have an understanding of key conceptual, theoretical, and empirical developments in the sociology of science from the mid 20<sup>th</sup> century to the early 2000s;
2. Develop analytical skills to compare, contrast, and apply approaches in the sociology of science;
3. Be able to reflect on own assumptions about the relationships among knowledge, science, medicine, politics, and publics;
4. Have an understanding of how science works as a social process;
5. Be able to distinguish and critique the norms and boundaries of science;
6. Be able to identify social factors that shape the content of science;
7. Become familiar with the range of theoretical approaches to the sociology of scientific knowledge, including feminist studies of science;
8. Apply sociological definitions and concepts to analyze scientific issues, including a scientific controversy;
9. Develop individual critical thinking, analytical, reading and writing skills.

## **REQUIRED TEXTS**

The following books are required for the course and are available at Georgia Tech Book Store (Barnes and Nobles) and at the Engineering Book Store located at 748 Marietta Street NW.

Sergio Sismondo. 2010. *An Introduction to Science and Technology Studies Second Edition*. 2010. Malden: Wiley Blackwell.  
ISBN-10: 1405187654 | ISBN-13: 978-1405187657

Steven Epstein. 1996. *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press.  
ISBN-10: 0520214455 | ISBN-13: 978-0520214453

Ruha Benjamin. 2013. *People's Science: Bodies and Rights on the Stem Cell Frontier*. Stanford: Stanford University Press.  
ISBN-10: 0804782970 ISBN-13: 978-0804782975

## COURSE REQUIREMENTS

### **1. Class Participation (5%) and Reading Responses (20%)**

Class participation includes keeping up on assigned readings and contributing effectively to class discussions. Students are expected to do all the assigned reading thoroughly before coming to class and be prepared to participate actively in class discussions. Most class meetings will involve some group discussion of the readings.

To help prepare for class participation, you should reflect on the following questions for each assigned reading:

- 1) What question is the author trying to answer? What is the intellectual history of this question? That is, in what sociological (or other) traditions is it located?
- 2) What is the author's definition of "science" or "technology" (or the aspect of science and/or technology on which she or he focuses, e.g., knowledge, expertise, practice, etc.)?
- 3) If the paper is empirical, what is the nature of the author's evidence and how does she or he bring that to bear on the research questions? If it is theoretical, how tight are the connections between the links in the argument? What, if any, premises are smuggled in unheralded?
- 4) Whether empirical or theoretical, how satisfactorily does the author link the evidence and arguments to the conclusions?
- 5) What does the reading accomplish? What contribution does it make to sociology? What have you learned from it? How might you use it in your work?
- 6) What comparisons can you draw from previous readings?

Reading Responses: Each student is responsible for turning in 5 one to two-page written responses based on selected articles and/or book chapters indicated by a \* in the syllabus. Two of your responses must be from the books we read at the end of the class. Responses should include: 1) citation of the assigned reading; 2) major concepts and/or theories addressed; 3) a critique of the reading using the questions above; and 4) two thoughtful questions for the class – these will be the basis of our class discussion. Please do not write extended summaries of the readings. **All reading responses must be posted by 11am the day of class on T-Square blogs.**

No credit will be given to responses turned in late or that do not meet the above criteria. Only excellent responses will receive complete credit. You may not make up responses at the end of the semester.

By having prepared a response to the material in advance and sharing your responses with the rest of the class, it is my hope that you will be better prepared to engage in productive class discussions and that you will gain more from each other's analyses than you would otherwise. I will be looking for clear intellectual engagement.

## 2. Attendance Policy

Attendance will be taken and is part of your final grade. Beginning with the 4<sup>th</sup> absence 1% will be deducted from your final grade. For each successive absence an additional percentage point will be deducted from your final grade. For example, 5 absences would result in a 2% deduction from your final grade; 6 absences would result in a 3% deduction, and so on. Absences as defined by the University Senate (serious illness, illness or death of a family member, university related trips, major religious holidays) will be excused.

## 3. Writing Assignments (65%)

You are required to write two papers for this course:

1. Controversy Paper (15%). This paper will be a sociological analysis of a scientific controversy – The Vaccine Wars or Climate of Doubt – two PBS Frontline documentaries that discuss current controversial topics. You will be responsible for viewing one of these documentaries and writing a 5 page analysis consisting of:

- 1) Introduction to the controversy – brief.
- 2) The major stakeholders involved – who are they, what position of power do they hold, what is their social location?
- 3) How is science used to support or reject the controversial claims? What type of science (and whose expertise) counts as legitimate?
- 4) In your analysis draw on at least two concepts discussed in class: paradigm shift, normative science, normal science, thought styles, boundary work, interpretive flexibility, black box, etc. Describe the sociological concept and directly relate it to the controversy. See questions below for help in analysis.
- 5) Conclusion – Based on your analysis, what conclusions can you draw about the scientific controversy in question? What is your position on this controversy? Indicate your reasons for the position you take about this controversy even if you are still undecided? How does your social location and understanding of the topic influence the position you take in this controversy? What role does science (and whose science) contribute to your conclusions?
- 5) Cite all references: Documentary, any resources used from class in your analysis.

**DUE DATE: Tuesday, Feb. 4, 2013 – 5pm in T-Square Drop Box**

2. Final Paper (8-10 pages) (50%) – See grading rubric below.

The goal of the paper is to illustrate that you can describe, analyze, and discuss science from a sociological perspective using any theme or topic of the course as a starting point. You may do this by picking an aspect of science such as objectivity, truth, facts, authority, standards, 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. Please include a clear introduction, supporting paragraphs, a conclusion and a bibliography that includes at least 5 class readings, and at least 5 readings from the

sociology of science that you found outside of class readings that supplement and contribute to your essay in a meaningful way. The paper is to be 8-10 pages double-spaced.

Here are some key questions to think about as a starting point for the analysis of your paper (edited from Callon 1995)

- What does scientific (or knowledge) production consist of? What is the nature of scientific (knowledge) production?
- Who are the actors and what competence (skills/expertise) do they have? What level of agency/power is given to human and non-human actors?
- How does one define the underlying dynamics of scientific (knowledge) development?
- How is agreement obtained?
- What forms of social organization (internal or external) are assumed?
- How are the overall dynamics of science described?
- What is the relationship between science/technology and society, how is science/technology explained within a social context?

**DUE DATES: Submit all parts of the paper in Tsquare/Drop Box by midnight**

**Feb. 18, 2014** - Hand in a one-page summary of paper topic: – see topic ideas below.

**March 13, 2014 (10%)** - Annotated Bibliography and Endnote file – Details forthcoming.

**April 15 and April 17 (10%)**– Poster Presentation of Final Paper – Details forthcoming.

**April 29, 2014 (30%)**- Final Paper due

In order to receive full credit, all sections of the paper must be turned in on time.

### **Topic Ideas**

Getting started with your final paper...

Add @sciencemagazine,

@NYTimesScience and/or

@NatureMagazine to your Twitter feed and tune into current science news to find an area, controversy, or case that interests you.

Browse online resources for STS bibliographies on topics that you get excited about. The Syllabus Collection on the 4S website (4sonline.org) or the STS Wiki, (stswiki.org) both have terrific lists of readings and writing topics that can inspire.

Consult the STS Handbooks for more grounding in your choice of theoretical perspective or empirical site.

### **4. Media Representation of Science (10%)**

Starting Week 2 of the course, each student is required to post at least 2 articles (or videos) about science to share with the class. In order to do this, you must use the T-square blog to post an article or video that you want to share with the class. It should be relevant to the course content and represent a contemporary example of science that the class can use for discussion. In the comment section, describe why you picked the article

and how it relates to the class by drawing on at least one sociological concept or idea we have discussed in class. You will be responsible to using one of your posted articles to discuss in class (at least 10 minutes). I will distribute a sign up sheet the first week of class. All articles discussed in class must be read by the entire class and must be posted 48 hours before class to allow enough time to read/view.

**COURSE EVALUATION**

		<b><u>Calculate your grade</u></b>
<b>Participation/Reading Responses</b>	<b>25%</b>	<b>(your grade)(.25) = a</b>
<b>Paper 1: Controversy Paper</b>	<b>15%</b>	<b>(your grade)(.15) = b</b>
<b>Paper 2: Final Paper (3 parts)</b>	<b>50%</b>	<b>(your grade)(.50) = c</b>
<b>Sociology of Science Post/Discuss</b>	<b>10%</b>	<b>(your grade)(.10) = d</b>
<b>Attendance (deduct % points based on # of absences)</b>		<b>= f</b>
 <b>Total</b>	 <b>100 %</b>	 <b>(a+b+c+d) – f = your grade</b>

**Course grade: 90-100=A 80-89=B 70-79=C 60-69=D Lower than 60=F**

**POLICIES FOR WRITTEN WORK**

All written papers (including the final exam) are to be typed, double-spaced, using 12-pt. time New Roman font, and must include page numbers, proper use of citations, and bibliographies. Please use ASA citation style. I have posted a quick guide to ASA citation style on T-Square/Resources/ASA citation.

All assignments will be turned in through T-square. The reading responses will be written as blogs and all other writing assignments and poster file (if applicable) will be turned in to your T-square drop box. Late assignments will be deducted 5% each day it is late. If you have a personal or family emergency and are unable to complete an assignment, you must speak with me as soon as possible so we can discuss how and when you will complete the assignment. **Do not assume that you may hand in all of your assignments at the end of the course, or that you will be granted an extension.**

**Research/Writing Resources at Georgia Tech:** <http://libguides.gatech.edu/research>: This guide will help you learn how to conduct research, how to write well, and how to avoid plagiarism by citing your sources.

The Communication Center at Clough Commons also provides tutoring in communication-related assignments or projects regardless of discipline. The **CommLab** is located on the 4th floor of the Clough Commons: <http://www.communicationcenter.gatech.edu/>

For international students, there is a writing center that will help you with your written reports. Please see the Language Institute about writing services: <http://www.esl.gatech.edu/esl/communication-center>

## ACADEMIC HONOR CODE

Academic Integrity Statement: Students are expected to act according to the highest ethical standards. The immediate objective of an Academic Honor Code is to prevent any Students from gaining an unfair advantage over other Students through academic misconduct. The following clarification of academic misconduct is taken from Section XIX Student Code of Conduct, of the Rules and Regulations section of the Georgia Institute of Technology General Catalog: Academic misconduct is any act that does or could improperly distort Student grades or other Student academic records. Such acts include but need not be limited to the following:

**Plagiarism:** Plagiarizing is defined by Webster's as "to steal and pass off (the ideas or words of another) as one's own: use (another's production) without crediting the source." I will check all papers for plagiarism and your papers will be considered as "plagiarized" in part or entirely if you do any of the following:

- Submit a paper that was written by someone other than you.
- Submit a paper in which you use the ideas, metaphors or reasoning style of another, but do not cite that source and/or place that source in your list of references.
- Submit a paper in which you "cut and paste" or use the exact words of a source and you do not put the words within quotation marks, use footnotes or in-text citations, and place the source in your list of references.

If caught plagiarizing, you will not receive credit for the assignment and you will be dealt with according to the GT Academic Honor Code.

**Working with other students:** Unless specifically identified as group work, all assignments are to be completed alone.

**Cheating:** Cheating off of another person's test or quiz is unethical and unacceptable. Cheating off of anyone else's work is a direct violation of the GT Academic Honor Code, and will be dealt with accordingly.

Unauthorized use of any previous semester course materials, such as tests, quizzes, homework, projects, and any other coursework, is prohibited in this course. Using these materials will be considered a direct violation of academic policy and will be dealt with according to the GT Academic Honor Code.

For any questions involving these or any other Academic Honor Code issues, please consult me, my teaching assistants, or visit [www.honor.gatech.edu](http://www.honor.gatech.edu)

## CLASSROOM CONDUCT

- Do not talk during lecture, while other students are asking questions, or during movie/video presentations.
- Please **silence** cell phones, and **turn off** iPods, or other electronics during class.
- Computers are allowed in class to take notes only. Please refrain from using e-mail, Facebook, You-Tube, or any other non-related electronic material. It disrupts not only your learning but also the learning of those around you. If it becomes apparent that you are using your computer in class to surf the web and are disengaged in class, I will ask you to close your computer and you will no longer be able to bring it to class.
- Late arrivals & early departures disrupt not only me, but also other students; therefore, if you know you will be late or need to leave early—please talk to me *before* class (or email me).
- Since this course discusses controversial issues, I expect you to respect and listen to everybody's opinions and perspectives. I value and respect your contributions. Please do the same for others in the class. Our class is a space free of sexist, racist or other offensive comments.

## ACCOMMODATIONS

Students with disabilities needing reasonable accommodations are encouraged to contact the instructor. The Office of the Dean of Students, ADAPTS Disability Services Program is available to assist us with the reasonable accommodations process. More information at: <http://www.adapts.gatech.edu/index.php>.

## ADDITIONAL RESOURCES

### **Professional Associations and STS Wiki**

- <http://www.4sonline.org> - The Society for Social Studies of Science, the primary professional association for sociologists of science. Lots of great information online.
- <http://www2.asanet.org/sectionskat/> - The Science, Knowledge and Technology Section of the American Sociological Association.
- The STS Wiki ([www.stswiki.org](http://www.stswiki.org)) is a consolidated, community based resource for STSers, including lists of readings and previews of Science Studies programs worldwide.

### **Journals**

Sociologists of science publish in a variety of journals. Look for the top articles in these publications:

- Social Studies of Science ([sagepub.com/sss](http://sagepub.com/sss))
- Science, Technology, and Human Values ([sagepub.com/sth](http://sagepub.com/sth))
- Science Studies
- Science as Culture (cultural studies of science)
- Science Communication (public understanding of science)
- Science and Public Policy (policy issues)
- Minerva (gender and science)

- Configurations (science, art, and literature)
- Signs
- Social Epistemology
- Bulletin of Science, Technology and Society
- Studies in History and Philosophy of Science
- Isis
- Studies in Sociology of Science

### **Sociology of Science Programs**

- Cornell University Science & Technology Studies: <http://sts.cornell.edu/>
- MIT Program in Science, Technology, and Society: <http://web.mit.edu/sts/>
- Rensselaer Polytechnic Science and Technology Studies: <http://www.sts.rpi.edu/>
- University of California, San Diego's Science Studies: <http://sciencestudies.ucsd.edu/>
- University College London Science and Technology Studies: <http://www.ucl.ac.uk/sts/>
- University of Edinburgh Science Studies Unit: <http://www.stis.ed.ac.uk/>
- University of Oxford, Said Business School: <http://www.sbs.ox.ac.uk/research/sts>

### **Georgia Tech Library Resources**

- Medical Journal Searches: [PubMed](#)
- Media searches: [Lexis-Nexus Academic Database](#)
- Social Science Databases: [JSTOR](#) and/or [Web of Science](#)
- Endnote referencing software free download - <http://www.library.gatech.edu/search/endnote.php>

## **COURSE SCHEDULE AND READING ASSIGNMENTS**

The instructor reserves the right to make changes to the reading schedule as needed.  
All assignment dates will remain the same.

### **WEEK 1: INTRODUCTION TO SOCIOLOGY OF SCIENCE**

*What is science?*  
*Why take a sociological approach to science?*

#### **January 7**

Browse the following websites and be prepared to talk about your observations and/or responses:

- Society for Social Studies of Science (4S) (<http://4sonline.org/>).
- STS Wiki ([http://www.stswiki.org/wiki/Main\\_Page](http://www.stswiki.org/wiki/Main_Page)).
- Wikipedia STS ([http://en.wikipedia.org/wiki/Science\\_and\\_technology\\_studies](http://en.wikipedia.org/wiki/Science_and_technology_studies))

#### **January 9**

Sismondo, Sergio. 2008. "Science and Technology Studies and an Engaged Program" In *The Handbook of Science and Technology Studies*, Hackett, E. Amsterdamska, O., Lynch, M. and Wajcman, J. (Eds.). Cambridge and London: The MIT Press (pg. 13-17). (T-square)

Sismondo, Sergio. 2010. *An Introduction to Science and Technology Studies*. Malden, MA: Blackwell. Pp. 1-12.

Class Video – Island of Flowers <http://vimeo.com/53862971>

## WEEK 2: SCIENCE AS A SOCIAL PROCESS

*In what ways is the production of scientific knowledge a social process?  
How are scientific changes of revolutionary order rooted in the characteristics of the  
scientific community?  
How did Fleck and Kuhn's theories challenge the rationality and progress of science?*

### January 14

- White, Kevin. 2002. "The Sociology Of Medical Knowledge." Pp. 23-31 in his An Introduction to the Sociology of Health and Illness. London: Sage. [Originally published in 1991 as "Ludwik Fleck and the Sociology of Medical Thought. Pp. 58-70 in his "The Sociology of Health and Illness." [A major overview with STS orientation] Current Sociology 39:1-115.] (T-square)
- Lowy, Ilana. 1988. Ludwik Fleck on the Social Construction of Medical Knowledge. *Sociology of Health and Illness* 10(2):133-155. (T-square)

### January 16

- Sismondo, Sergio. 2010. An Introduction to Science and Technology Studies. Malden, MA: Blackwell. Chapter 2: The Kuhnian Revolution.
- Thomas S Kuhn (1963) "Scientific Paradigms" pp 80-104 in *Sociology of Science* edited by Barry Barnes, Middlesex: Penguin Books 1972

### WEEK 3: SCIENCE AS COMMUNITY

*What are the norms (or ethos) of science?  
Are norms of science constant through history and across science?  
What did Merton's norms imply about the institution of science?  
How do scientists police and transgress their borders?  
In what ways is "boundary work" connected to authority?*

#### January 21

Sismondo Ch. 3: Questioning Functionalism in the Sociology of Science

Merton, Robert K. 1973. Robert K. Merton--The Sociology of Science: Theoretical and Empirical Investigations. Norman W. Storer (ed.) Chicago: U. of Chicago Press. Chapter 13, "The Normative Structure of Science" (pp. 267-278) (T-square)

#### January 23

Gieryn, T. F. 1983. Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists. *American Sociological Review* 48 (6): 781-795. (Web of Science)

Fishman, J.R., Binstock, R.H. and Lambrix, M. A. Anti-aging science: The emergence, maintenance, and enhancement of a discipline. *Journal of Aging Studies*. 22:295-303.

Recommended:

Gieryn, T. F., Bevins, G. M., and S. Zehr. 1985. Professionalization of American Scientists: Public Science in the Creation/Evolution Trials. *American Sociological Review* 50(3): 392-409. (Web of Science)

Jasanoff, Sheila. 1987. Contested Boundaries in Policy-Relevant Science. *Social Studies of Science* 17(2): 195-230. (Web of Science)

## WEEK 4: SOCIOLOGY OF SCIENTIFIC KNOWLEDGE

*What factors shape the content of science?  
How is the SSK different than the Sociology of Science promoted  
by American Sociologists (Mertonian Sociology)?  
What are the major approaches to the SSK?*

### **January 28**

Hess, D. 1997. *Science Studies: An Advanced Introduction*. New York: NYU Press  
Chapter 4 – Social Studies of Knowledge

Recommended:

Shapin, Steven. 1995. Here and Everywhere: Sociology of Scientific Knowledge. *Annual Review of Sociology* 21:289-321.

### **January 30 – No Class Meeting – Please watch documentary on your own.**

Sismondo Ch.11: Controversies

Watch either of these PBS Frontline Documentaries:

Autism Wars <http://www.pbs.org/wgbh/pages/frontline/vaccines/view/>

OR

Climate of Doubt

<http://www.pbs.org/wgbh/pages/frontline/climate-of-doubt/>

Write Short Essay based on either of these controversies. See Course Requirements/Written Papers for details. **Paper is due Feb. 4, 2013.**

## **WEEK 5: SOCIAL CONSTRUCTION OF SCIENTIFIC REALITIES**

*Who usually shapes what kinds of knowledges are produced?  
What key assumptions are embedded in “social constructivism?”  
How do various knowledges about medicine and health come into being?*

### **February 4 – Controversy Papers are due in Drop Box by 5 pm.**

Discuss Controversies in Class

Sismondo - Ch. 6 – The Social Construction of Scientific and Technological Realities

### **February 6**

Casper, Monica J. and Marc Berg. 1995. "Introduction to Special Issue on Constructivist Perspectives on Medical Work: Medical Practices in Science and Technology Studies." *Science, Technology and Human Values* 20(4): 395-407.

Figert, Anne E. 1995. “The three faces of PMS: the professional, gendered and scientific structuring of a psychiatric disorder.” *Social Problems* 42(1): 56-73.

#### **Recommended:**

Wright, Peter, and Andrew Treacher. 1982. “Introduction.” Pp. 1-22 in *The Problem of Medical Knowledge: Examining the Social Construction of Medicine*, edited by Peter Wright, and Andrew Treacher. Edinburgh: Edinburgh University Press.

Shim, Janet K. 2005. Constructing 'Race' across the Science-Lay Divide: Racial Formation in the Epidemiology and Experience of Cardiovascular Disease.” *Social Studies of Science* 35(3): 405-36.

## WEEK 6: GENDER AND FEMINIST STS

*How does our cultural understanding of gender affect our scientific knowledge?  
How is science used to shape gender?  
In what ways would science and technology be qualitatively different if women were  
better represented?*

### **February 11**

Sismondo Ch. 7: Feminist Epistemologies of Science

Keller, Evelyn Fox. 1987. The Gender/Science System; Or, is Sex to Gender as Nature is to Science? Pp. 234-242 in The Science Studies Reader. M. Biagioli (Ed). New York: Routledge. (T-Square/Resources)

### **February 13**

Emily Martin, "The Egg and the Sperm: How Science Constructed a Romance Based on Stereotypical Male-Female Roles," Signs 16 (1991), 485–501. (Web of Science)

Haraway, Donna. [1988] 1999. "Situated Knowledges: The Science Question in Feminist and the Privilege of Partial Perspective." Pp. 172-188 in Biagioli, Mario (Ed.) The Science Studies Reader. NY: Routledge. (T-square)

Or

Ann Fausto-Sterling, "Sexing the Brain: How biologists make a difference," Ch. 5 in *Sexing the Body* (Basic Books, 2000), 115-145.

Schiebinger, L. "More Than Skin Deep: The Scientific Search for Sexual Difference," in *The Mind Has No Sex?: Women in the Origins of Modern Science* (Harvard, 1989), pp. 190-213.

## WEEK 7 - STUDIES OF LABORATORIES

*Where does science take place and what happens there?  
How are scientific facts constructed?  
How might scientific practices be studied like any other cultural practice?*

### **February 18**

Sismondo – Ch. 10: Studying Laboratories

Latour, Bruno and Steve Woolgar. [1979] 1987. *Laboratory Life: The Social Construction of Scientific Facts*. Princeton U. Press. Pp. 15-51 and 167.

**\*\*\*\*\*Feb. 18, 2014 - Hand in a one-page summary of paper topic\*\*\*\*\***

### **February 20**

Latour, Bruno. "Give me a laboratory and I will raise the world," (1983) in Knorr-Cetina, K. D. and Mulkay, M. *Science Observed: Perspectives on the Social Study of Science*. London: Sage Publications.

Clarke, Adele and Joan Fujimura. 1992. "Introduction: What Tools? Which Jobs? Why Right?" Pp. 3-46 in Clarke and Fujimura (Eds.) *The Right Tools for the Job: At Work in Twentieth Century Life Sciences*. Princeton: Princeton University Press.

## WEEK 8: ACTOR NETWORK THEORY

*What is technoscience?*

*What is meant by heterogeneous actors?*

*How can objects be part of social networks?*

*In what capacity can nonhumans act or participate in systems and/or networks?*

*How are material tools used for disciplining and maintaining nature?*

*What is “ready made science” and “science in the making”?*

### **February 25**

Sismondo Ch. 8: Actor-Network Theory

Callon, Michel (1999 [1985]). Some Elements of a Sociology of Translation: Domestication of the Scallops and the Fishermen of St. Brieuc Bay. Pp. 67-83 in *The Science Studies Reader*. M. Biagioli (Ed). New York: Routledge.

Movie Clip - Witness

### **February 27**

Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers Through Society*. Cambridge: Harvard University Press. Introduction – “Opening Pandora’s BlackBox” (pg. 1-17)

Hall, Edward. 2005. “The ‘Geneticization’ of Heart Disease: A Network Analysis of the Production of New Genetic Knowledge.” *Social Science and Medicine* 60: 2673-2683.

### **February 28 - Drop Courses with a “W” Deadline**

## WEEK 9: SYMBOLIC INTERACTIONIST STUDIES OF SCIENCE & TECHNOLOGY

*What are social worlds and arenas?*

*What are “sensitizing concepts” and how can they be used as a theory-methods toolkit for studying science and technology?*

*How are Social Worlds/Arenas and Actor Network Theory similar and different?*

### **March 4**

Clarke, Adele and Susan Leigh Star. 2007. The Social Worlds Framework: A Theory/Methods Package. Pp. 113-138 in *The Handbook of Science and Technology Studies*, Third Edition, Edward J. Hackett, Olga Amsterdamska, Michael Lynch and Judy Wajcman (Eds). Cambridge, MA: MIT Press.

Casper, Monica J. and Adele E. Clarke. 1998. “Making the Pap Smear into the ‘Right Tool’ for the Job: Cervical Cancer Screening, 1940-1995.” *Social Studies of Science* 28(2): 255-290.

### **March 6**

Fujimura, J. (1988) The Molecular Biological Bandwagon in Cancer Research: Where Social Worlds Meet. *Social Problems*, Vo. 35, No.3, pp.261-283.

Garrety, Karin. 1997. “Social Worlds, Actor-Networks and Controversy: The Case of Cholesterol, Dietary Fat and Heart Disease.” *Social Studies of Science* 27: 727-73. (Web of Science).

**WEEK 10 – PUBLIC UNDERSTANDING OF SCIENCE, EXPERTISE, AND  
PUBLIC PARTICIPATION**

*How do social processes shape popular science?  
What is the nature of expertise?  
Whose expertise counts as legitimate in scope and authority?  
In what ways does lay expertise or local knowledges interact with the different stages of  
the production and application of knowledge?  
How is science altered by public participation of citizens?*

**March 11: Public Understanding of Science**

Sismondo Ch. 15: The Public Understanding of Science

Brian Wynne, “Misunderstood Misunderstanding: Social identities and public uptake of science,” *Public Understanding of Science* 22 (1992), 281-304.

**March 13: Expertise and Public Participation**

**Sismondo Ch. 16: Expertise and Public Participation**

Brown, Phil, Sabrina McCormick, Brian Mayer, Stephen Zavestoski, Rachel Morello-Frosch, Rebecca Gasior Altman, and Laura Senier. 2006. “ ‘A Lab of Our Own’: Environmental Causation of Breast Cancer and Challenges to the Dominant Epidemiological Paradigm.” *Science, Technology and Human Values* 31: 499-536.

Callon, M. and V. Rabeharisoa (2008). “The growing engagement of the emergent concerned groups in political and economic life: Lessons from the French Association of Neuromuscular Disease Patients.” *Science, Technology, and Human Values* 33:230-61

**\*\*\*\*\*Due: March 13, 2014 Annotated Bibliography and Endnote file \*\*\*\*\***

**March 13 – Withdrawal Deadline**

**Week 11 – \*\*\*\*SPRING BREAK\*\*\*\***

**March 17-21 – SPRING BREAK**

**\*\*Start reading case studies: Impure Science and Science for the People**

## WEEK 12 – POLITICAL ECONOMY OF KNOWLEDGE

*What are the new knowledge economies of the 21<sup>st</sup> century?  
In what ways do different actors treat scientific knowledge as a resource?  
How has the commercialization of biotech and medical research affected the production,  
distribution, and consumption of knowledge?*

### **March 25**

Sismondo Ch. 17: Political Economy of Knowledge (189-195 only)

Kleinman, Daniel Lee (1998). “Untangling Context: Understanding a University Laboratory in the Commercial World.” *Science, Technology, & Human Values* 23(3): 285-314.

### **March 27**

Fishman, Jennifer. (2004) “Manufacturing Desire: The Commodification of Female Sexual Dysfunction.” *Social Studies of Science* 34(2): 187–218.

Fisher, J. A. and Kalbaugh, C. A. (2012) United States Private-Sector Physicians and Pharmaceutical Contract Research: A Qualitative Study. *PLOS Medicine*. Vol 9, Issue 7.

## WEEK 13 – CASE STUDY: IMPURE SCIENCE

### **April 1**

Steven Epstein. 1996. *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press. Introduction and Chapter 1 and 2

### **April 3**

Steven Epstein. 1996. *Impure Science: AIDS, Activism, and the Politics of Knowledge*. Berkeley: University of California Press. Chapter 3 and 4, Conclusion

## WEEK 14 – CASE STUDY: THE PEOPLE’S SCIENCE

### **April 8**

Ruha Benjamin. 2013. *People's Science: Bodies and Rights on the Stem Cell Frontier*. Stanford: Stanford University Press. Introduction, Chapters 1 and 2.

### **April 10**

Ruha Benjamin. 2013. *People's Science: Bodies and Rights on the Stem Cell Frontier*. Stanford: Stanford University Press. Chapters 3-6.

## **WEEK 15 – CLASS POSTER SESSION**

**April 15 – half of class will present posters in class**

**April 17 – half of class will present posters in class**

## **WEEK 16 – THE FUTURE OF SOCIOLOGY OF SCIENCE**

**April 22**

Frickle, S. and Moore, K. (Eds.)(2005) *The New Political Sociology of Science: Institutions, Networks, and Power*. Madison: The University of Wisconsin Press.  
Introduction (pg. 3-31).

**April 24 – Wrapping up and looking forward**

**April 29 – Turn in Final Paper by midnight – T-square/Drop Box**

HTS 3082: Controversy Analysis.

1. What controversy did you investigate?
  
2. What were the major points of the controversy?
  
3. How many different perspectives were represented (Interpretive Flexibility)?
  
4. Who was part of the core set for each side of the controversy?
  
5. What tools (e.g., rhetorical, empirical studies, personal experience, etc.) do actors employ to further their position?
  
6. How is the legitimacy (or illegitimacy of) science (or people) used to convince people of one side of the controversy?
  
7. Does background of actors based on social class, race, religion, political orientations, etc. shape one side of the controversy? If so, how?
  
8. What other ideas from class did you use for your analysis?

## Sociology of Science Paper/Poster Grading Rubric

\_\_\_\_\_ (10 pts.) **Introduction and Purpose of Paper**

- Does the introduction hook the reader – make it inviting to the reader.
- Statement of the purpose of the paper. What is the main argument of your paper?
- Summary of sociological concepts and factors that will be discussed in the paper

\_\_\_\_\_ (15 pts.) **What is the Scientific Issue and why is it important?**

- What is the scientific issue, problem, conflict, etc. Be specific and focus on the most pertinent aspects you will use for your analysis.
- What specific aspect of science does the paper address (objectivity, truth, facts, authority, standards, expertise, peer review, controversy, practices, norms, and/or power, economics of knowledge, public understanding, lay knowledge, feminist epistemologies, revolutions, paradigms, etc.)
- Why is this an important topic for sociology of science? What questions does it address?
- Be sure to indicate what resources were used for your analysis (i.e., primary or secondary) and cite appropriately.

\_\_\_\_\_ (35 pts.) **Sociological Analysis**

At least 3 concepts or theories in the sociology of science included in your analysis

- Summarize the sociological concepts and/or theories, cite your sources, and suggest how the theories and/or concepts might explain your scientific issue.
- Draw on specific examples that connect to the sociological concept/theory.
- 5 class readings and 5 sources outside course, preferably in Sociology of Science or STS resources (see syllabus).

\_\_\_\_\_ (5 pts.) **Conclusion**

- A summary of findings and statement of central argument that matches the introduction?
- A statement about how you could enhance this analysis (interviews, observations, archives, other data?).
- Reflection statement on what was most challenging aspect of this paper and what you learned in the process.

\_\_\_\_\_ (10 pts.) **Overall quality of paper**

Paper is free of grammar and spelling errors, proper citation and referencing, etc. Please read over or have someone read over your final paper. Services available in Clough.

\_\_\_\_\_ (25 pts.) **Poster**

\_\_\_\_\_ (6) A brief introduction and purpose of the poster

\_\_\_\_\_ (7) A brief description of scientific issue and why it is important for STS?  
Visuals are welcomed.

\_\_\_\_\_ (7) Sociological Analysis – There should be at least 3 sociological concepts in your analysis. Briefly define the concept and draw connections to your scientific issue.

\_\_\_\_\_ (2) List of all references, including sociological sources and any data used for analysis (smaller text if fine)

\_\_\_\_\_ (3) Overall appearance/presentation of the poster