

STS 190: HONORS SEMINAR Spring 2006

Time: Monday 4:15-6:05 pm

Place: Building 370, Conference Room

Instructor: Dr. Rebecca Slayton

Lecturer in Science, Technology and Society

rslayton@stanford.edu

Objectives

The relationship between science, technology, and society presents us with a myriad of puzzles and dilemmas. In Stanford's Science, Technology, and Society program, honors students choose one important question, tackle it with carefully formulated research methods, and publish their conclusions in an honors thesis. Honors theses represent unique contributions to our understanding of science, technology and society, and have been a source of pride for students and advisors alike. For a list of past thesis topics, see <http://cgi.stanford.edu/group/STS/cgi-bin/theses.pl>.

But how and where do you begin honors research in STS? What is a research method? What is a literature review? How do you write an original thesis? This course will address these and other questions necessary to start and finish an STS honors thesis. We will walk through the process of writing a research proposal both collectively and individually – including formulating research questions and hypotheses, developing theoretical perspectives in STS, and preparing to use quantitative and qualitative methods. At the end of the course, you will have written a proposal to conduct original research on your own area of interest. You can use this proposal to apply to the STS Honors program (see <http://sts.stanford.edu/forms/Honors.pdf>), and will also have a good start on applying for funding from the Undergraduate Research Program (see details below).

Strategy

Our reading, discussion, and writing will progress on two related levels:

- First, we will examine major themes in science and technology studies, and discuss the ways that they intersect with our own research interests. This discussion will be structured by reviews in one of our required books: Shelia Jasanoff, *et al.*, editors, *Handbook of Science and Technology Studies*, Revised Edition.
- Second, we will develop our own research proposals. We will use a book on Research Design to walk through this process, one step at a time: John W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, Second Edition. Creswell and Jasanoff's books are the only required books for the class. Our discussions will occasionally be supplemented by materials online, past STS Honors theses, and your own chosen readings.

Requirements and Grading

This course does not have a midterm or in-class final examination. Instead, grades will be based on following assignments, which are described in more detail in the schedule

that follows. Please note that the assignments are due either before the class dates under which they are listed.

- **Reviews (30%)** In each of seven weeks, we will examine a major theme in science, technology and society, and respond in writing. For most weeks (April 17-May 22), you will write a one-paragraph summary of each reading in the study, or a set of 'snapshot paragraphs.' This assignment should help you learn *not* to get bogged down in details; instead you should look for the most important sentence or passage in the text and restate it concisely in your own words. These assignments are due on CourseWork's discussion forum by midnight the day before class meets, and will be discussed in class.
- **Proposal work (30%)** A short assignment related to your proposal will be due each week. These assignments will help you write your proposal at a reasonable and measured pace, and will form the basis for our in-class discussion.
- **Final proposal (20%)** At the conclusion of the course, you will submit a 12-15-page, double-spaced research proposal. This will consolidate and improve upon the work you put into proposal writing throughout the class. Your proposal will include a specific research question, a basic literature review that articulates the significance of the question, a set of methods, and a summary of data to be collected. For guidelines on writing your proposal, and especially if you wish to apply for a grant from Stanford's undergraduate research office, consult: <http://www.stanford.edu/dept/undergrad/urp/PDFLibrary/grantstuff/ProposalWriting.pdf> Your proposal is due before midnight on the last day of finals period.
- **Presentations (10%)** On the last day of class, you will present a ten-minute summary of your research proposal.
- **Seminar responses (10%)** Stanford's new seminar series on Science, Technology, and Society will meet every Friday this spring, from 12:00 - 1:30 pm. A spectacular range of scholars will be presenting their original work. For a full schedule, see http://sts.stanford.edu/SSSTS_Spring2006.pdf Plan to attend at least two of these and write a 1-2 page response for each one. Your response should describe:
 - The methods used by the researcher
 - Major conclusions of the researcher
 - Your own questions and reactions provoked by the seminar.

Grant Proposals

Stanford's Undergraduate Research Program offers research funds in the form of quarterly grants (fall, winter, and spring deadlines) and major grants (deadline of April 10, 2006). This course will teach you necessary methods and help you write a proposal for admission to the STS Honors program. But note that you must complete additional requirements for a student grant application, such as obtaining a letter of recommendation from a faculty member and learning about restrictions on research related to human subjects. If you are interested in applying for a grant, you should review the application process at <http://www.stanford.edu/dept/undergrad/urp/StudentGrants/index.html> .

DISCUSSION, READING AND WRITING SCHEDULE

Thursday, April 6: Introduction to STS Honors Research

Monday, April 10: No Class

Monday, April 17

❖ **Review: Has STS ‘Come of Age’?**

- *Handbook*, Gary Bowden, “Coming of Age in STS: Some Methodological Musings,” pp 64-79.
- Creswell, Chapter 1, “A Framework for Design,” pp 3-24.
- Choose an STS Honors thesis and write a one page analysis of its methods. (Note that selected theses are available in the course materials section of coursework, as well as in Building 370). In one page, explain whether you believe it employs a quantitative, qualitative, or mixed methods approach. As evidence, describe the three elements of inquiry, as outlined by Creswell (types of knowledge claims, strategies of inquiry, and specific data collection methods). What do you think Gary Bowden would say about the methods in the thesis you chose?

❖ **Proposal Work**

- Use three readings that you find provocative – news articles, book chapters, or scholarly articles – to develop one or more potential questions for research. Write one page articulating your question(s), and suggest the types of methods you might use for exploring it further.

Monday, April 24

❖ **Review: Social Construction of Technology**

- *Handbook*, Chapter 12, “From ‘Impact’ to Social Process: Computers in Society and Culture,” pp 257-285.
- *Handbook*, Chapter 14, “The Human Genome Project,” pp 302-316.
- Snapshot paragraphs are due by the midnight before class meets.

❖ **Proposal Work**

- Creswell, Chapter 2, “Review of the Literature,” pp 22-47.
- Develop a working title for your research proposal.
- Find five new readings relating to your topic of interest, and write a sentence or two summarizing the main conclusions of each one.

Monday, May 1

❖ **Review: Scientific and Technical Cultures**

- *Handbook*, Chapter 7, “Laboratory Studies,” pp 140-166.
- *Handbook*, Chapter 8, “Engineering Studies,” pp 167-188.
- *Handbook*, Chapter 9, “Feminist Theories of Technology,” pp 189-204.
- Snapshot paragraphs are due by the midnight before class meets.

❖ **Proposal Work**

- Creswell, Chapter 3, “Writing Strategies and Ethical Considerations,” pp 49-68.
- Find five more readings related to your research proposal, and again write 1-3 sentences summarizing each one.

- At this point you should have at least ten references; use these to draw a map of literature related to your topic. Consider possible extensions of the map, and propose some sites for finding additional literature.
- Write one paragraph summarizing any potential ethical dilemmas that might arise in your research process.

Monday, May 8

❖ Review: Science, Technology, and Communication

- *Handbook*, Chapter 16, Bruce Lewenstein, “Science and the Media,” pp 343-360.
- *Handbook*, Chapter 17, Brian Wynne, “Public Understanding of Science,” pp 361-388.
- Robert D. Putnam, “The Strange Disappearance of Civic America,” *The American Prospect*, December 1, 1996, <http://www.prospect.org/web/printfriendly-view.wv?id=4972>
- Snapshot paragraphs are due by the midnight before class meets.

❖ Proposal Work

- Creswell, Chapter 4, “The Introduction,” pp 73-86.
- Turn in a preliminary review of literature related your chosen topic, about 1000-2000 words in length. It should include a narrative hook describing your topic, and summarize at least 10 references. You should include a statement of your question, and explain the methods that have been used to address it or similar questions.
- Identify between 1-3 professors at Stanford who you might be able to contact about your proposal.

Monday, May 15

❖ Review: Science, Technology, and Controversy

- *Handbook*, Chapter 19, Dorothy Nelkin: “Science Controversies: The Dynamics of Public Disputes in the United States,” pp 444-456.
- *Handbook*, Chapter 20, Steven Yearly, “The Environmental Challenge to Science Studies” p 457-479.
- *Handbook*, Chapter 22, Brian Martin and Evelleen Richards: “Scientific Knowledge, Controversy, and Public Decision-Making,” pp 506-526.
- Snapshot paragraphs are due by the midnight before class meets.

❖ Proposal Work

- Creswell, Chapter 5, “The Purpose Statement,” and Chapter 6, “Research Questions and Hypotheses,” pp 87-117.
- Formulate a one-page description of your research questions, using the guidelines on p 117 of Creswell.
- Schedule meetings with 1-3 potential mentors to discuss your research interests and to get suggestions for further reading in your area of interest.

Monday, May 22

❖ Review: The Global Economy of Science and Technology

- *Handbook*, Chapter 21, “Science as Intellectual Property” pp 480-505.

- *Handbook*, Chapter 28, Vittorio Ancarani, “Globalizing the World: Science and Technology in International Relations,” pp 652-670.
- Snapshot paragraphs are due by the midnight before class meets.
- ❖ **Proposal Work**
 - Creswell, Chapter 7, “The Use of Theory,” pp 119-141.
 - Submit a revised proposal. It should include:
 - A catchy introduction and statement of purpose, articulating your questions. Cite the literature when you explain and motivate your questions.
 - A more formal literature review, explaining how your work will contribute to what has already been written. Think of this as entering a conversation. Come up with what you want to say, and explain how it relates to what other people have said, providing references as you go.
 - Proposed methods. This will be rough for now, but many of you have a start and it doesn't hurt to keep working on it.
 - Hypothesis about what you might find or conclude, based upon what others have written. This final point relates to the original assignment for May 22nd: looking for theoretical perspectives related to your work. You want to find theoretical perspectives that can make predictions for your case study.
 - By this time, you should have met with at least one potential mentor to discuss additional areas of reading and research design. If the mentor appears to be a good match for you, schedule a further meeting to discuss your final proposal. If the mentor does not seem to be a good match for you, schedule meetings with other mentors.

Monday, May 29

- ❖ **Review: Science, Technology, and the State**
 - *Handbook*, Chapter 23, Susan E. Cozzens and Edward J. Woodhouse, “Science, Government, and the Politics of Knowledge,” pp 533-553
 - *Handbook*, Chapter 24, Bruce Bimber and David Guston, “Politics by the Same Means: Government and Science in the United States,” pp 554-571
 - *Handbook*, Chapter 26, Wim Smit, “Science, Technology, and the Military.” Pp 598-626.
 - Snapshot paragraphs are due by the midnight before class meets.
- ❖ **Proposal Work**
 - Creswell, Chapter 8, “Definitions, Limitations, and Significance.” Pp 142-151.
 - A revised proposal. Be sure to define your terms and the limitations of your proposed research.

Monday, June 5:

- ❖ **Proposal Work**
 - Creswell, Chapter 9, “Quantitative Methods,” Chapter 10, “Qualitative Methods,” and Chapter 11, “Mixed Methods Procedures.” Pp 153-226.
 - A revised proposal. This proposal should have a well-specified set of methods, including specific sites of research, types of data collected, and so on. Be sure to think about the availability of the data you want to collect.

Final Class (Date TBA): Student presentations

The final research proposals are due by **Wednesday, June 14**, 11:00 p.m., via e-mail. If you wish to apply for the STS Honors program, be sure to complete the full application and send them to Julie Widman at jwidman@stanford.edu (See final 2 pages at <http://sts.stanford.edu/forms/Honors.pdf>)