

HTS/LMC/PUBPOL 6743
Science, Technology and Society: Core Seminar
Prof. Kristie Macrakis
Fall 2017

Class Meets: Tuesday, 6:05-8:55 pm, Old CE 104

Convener: Kristie Macrakis, macrakis@gatech.edu, (404)894-2185

Office Hours: Old CE 120, Tuesday/Thursday, 4:30-5:30 or by appointment

Course Description:

Science and Technology Studies (STS) is an interdisciplinary field that merges approaches from a variety of disciplines like history, sociology, anthropology, economics and literature, to understand the role of science and technology in society as well as the influence of society on science and technology. This course examines central topics, debates and theoretical perspectives in STS. It consists of guest lecturers/ discussion leaders from a variety of schools in the Ivan Allen College of Liberal Arts who introduce students to a number of STS topics and approaches as well as to those faculty who conduct research in STS. It is the core course required for the Graduate Certificate in Science, Technology and Society.

Requirements/Grading(each worth 1/3 of final grade):

1. Class Participation/Attendance

This is a seminar that requires active student participation. Students should carefully read texts before class and be prepared for lively and sophisticated discussion.

2. Weekly Reading Responses

Students are required to write a weekly journal response of about 300-500 words and post them on the blog section of T-Square; it should be posted 24 hours before class (Monday by 6 pm). The entries should demonstrate students have done the reading, have reflected on the reading and how it relates to earlier readings/discussions and broader STS issues. Finally, the entry should include questions you'd like to raise in class

3. Take Home Exam/Alternative Paper

One mandatory comprehensive question and one specific with a number to choose from. 1500 words each. [Please note, if a student has a project they would like to work on that would incorporate issues from the class, they may consult with the professor to do a paper instead of a take home exam]

Readings & Format:

There are *no required textbooks for this course*. Each faculty member provides pdf's of articles that are posted on the T-Square website. If the student wishes to peruse some key texts as background (and these are in no way required), I recommend: Jasanoff, S., G. Markle, J.C. Petersen, and T. Pinch (eds), *Handbook of Science and Technology Studies*. Beverly Hills: Sage, 1993.

*Guest lectures will lead the first two hours of class focusing on the readings, the convener, the last hour, which pulls together the topics and how they relate to early readings.

Course Objectives:

- To examine key themes in STS from a variety of disciplinary perspectives
- To understand the way in which social, historical, economic and cultural factors affect science and technology
- To read the main foundational texts in the field of STS
- To communicate orally and writing about these issues
- To be exposed, and make contacts with, faculty across Ivan Allen College who do STS type work
-

Learning Outcomes:

- Students will learn how to think about the role of science in society drawing on a variety of disciplines
- Students will learn how to read critically & improve their writing
- Students will be able to understand the role of science and technology in society

Georgia Tech Honor Code:

Plagiarism and cheating is not tolerated and will be penalized. All students are expected to follow the Georgia Tech honor code. See www.honor.gatech.edu

Attendance Policy: Attendance is required.

ADAPTS accommodation is available for students with disabilities:
<http://www.adapts.gatech.edu/>

Schedule

Week 1: 22 August

Introduction to Course

What is STS?

Syllabus Review

Week 2: 29 August

Guest Lecturer: Anne Pollock (LMC)

Introduction to STS

Bruno Latour, "Introduction: Opening Pandora's Black Box" and "Part 1: From Weaker to Stronger Rhetoric," from *Science in Action. How to Follow Scientists and Engineers Through Society* (Harvard 1987), pp. 1-100.

Steven Shapin and Simon Schaffer, "Seeing and Believing," from *Leviathan and the Air-pump: Hobbes, Boyle, and the Experimental Life* (Princeton 1985), pp. 22-79.

Donna Haraway, "Modest_Witness@Second_Millennium," from *Modest_Witness@Second_Millennium.FemaleMan@_Meets_OncoMouse™*, (Routledge 1997), pp. 23-39.

Anne Pollock, "Places of Pharmaceutical Knowledge-Making," *Social Studies of Science* 44.6 (December 2014): 848-873.

Week 3: 5 September

Guest Lecturer: Eric Schatzberg (HSOC)

History of Technology

Edgerton, David. "From Innovation to Use: Ten Eclectic Theses on the Historiography of Technology." *History and Technology*, 16:2, 11-136.

Ruth Oldenziel, Adri Albert de la Bruhèze & Onno de Wit. "Europe's Mediation Junction: Technology and Consumer Society in the 20th Century." *History and Technology*, Vol. 21, Iss. 1, 2005, 107-139.

Heßler, Martina. "The Frankfurt Kitchen: the Model of Modernity and the "Madness" of Traditional Users, 1926-1933." In *The Cold War Kitchen*, eds. Cambridge: MIT Press, 2008, Pps. 163-184

Schatzberg, Eric. "Technik in Amerika: Changing Meanings of Technology before 1930." *Technology and Culture*, 47.3 (2006), 486-512.

Week 4: 12 September

Guest Lecturer: Nassim JafariNaimi

Artifacts

Winner, Langdon, "Do Artifacts Have Politics," in *The Whale and the Reactor* (Chicago: University of Chicago Press, 1986), pp. 19-39.

Bowker, Geoffrey C., and Susan Leigh Star, *Sorting Things Out: Classification and its Consequences*, Cambridge, MA: MIT Press, 1999, Intro and Chapt 1 (pp. 1-50).

Jain, Sarah S Lochlann, "Dangerous Instrumentality: The Bystander as Subject in Automobility," *Cultural Anthropology* 19.1(2004): 61-94.

JafariNaimi . "Our Bodies in the Trolleys Path." *Science, Technology and Human Values*, 2017, 1-22.

Week 5: 19 September

Guest Lecturer: Jennifer Singh (HSOC)

Styles of Thought & Sociology of Medicine

Fleck, Ludwick. *Genesis and the Development of a Scientific Fact*. First published by Benno Schwabe, Basel, 1935; English translation by Bardley F. and Trenn T.J., University of Chicago Press, 1979. (Read: Forward by Kuhn and pp. 1-145).

Kuhn, Thomas S. "Scientific Paradigms." In *Sociology of Science* edited by Barry Barnes, 80-104. Middlesex: Penguin Books, 1972.

Singh, Jennifer. "No Single Gene for Autism: The Emergence of Genomic Styles of Thought." In *Multiple Autisms: Spectrums of Advocacy and Genomic Science*, 83-122. University of Minnesota Press: Minneapolis and London, 2016.

Week 6: 26 September

Guest Lecturer: Carol Colatrella (LMC)

Gender and Science

Haraway, Donna. "Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective," *Feminist Studies* 14.3(1988): 575-599.

Longino, Helen, and Evelyn Hammonds, "Conflicts and Tensions in the Feminist Study of Gender and Science," in *Conflicts in Feminism*. Eds. Marianne Hirsch & Evelyn Fox Keller. Routledge, 1990: 164-183.

Balsamo, Anne. "Teaching in the Belly of the Beast: Feminism in the Best of All Places," *Wild Science: Reading Feminism, Medicine, and the Media*. Eds. J. Marchessault, K.

Sawchuk. Taylor & Francis, 2000: 185-214.

W. Faulkner and E. A. Kerr, "On Seeing Brockenspectres: Sex and Gender in Twentieth-Century Science." *Companion to Science in the Twentieth Century*. Eds. Dominique

Pestre and John Krige. London: Routledge. 2003 Description: eBook at GT Library.
Jahren, Hope, *Lab Girl*, selections Colatrella, Carol, "Feminism Meets Fiction: Seven
Novels Featuring Women Scientists," in draft.

Week 7: 3 October

Guest Lecturer: Matt Ventresca (HSOC)
Sociology, Bio-Medicine and Brain Injuries

Foucault, M. (1973). Excerpts from *The history of sexuality, Vol 1: An introduction*.

Rose, N. (2007). *The politics of life itself*. Princeton, NJ: Princeton University Press
(Introduction and Chapter 1: pp. 1-40).

Clarke, A.E., Shim, J.K., Mamo, L., Fosket, J.R., & Fishman, J.R. (2003).
"Biomedicalization: Technoscientific transformations of health, illness and U.S.
biomedicine." *American Sociological Review*, 68(2), 161-194.

Lupton, D. (2014). Critical perspectives on digital health technologies. *Sociology
Compass*, 8(12), 1344- 1359.

Thornton/Johnson, Davi. "Brain Imaging and Self-Help." *J. Med. Humanities* (2008),
29: 147-161.

Week 8: 10 October

Fall RECESS- No Class

Week 9: 17 October

Guest Lecturers: Carl Di Salvo/Yanni Loukissas
Design

Ehn, P. (2008). Participation in Design Things. In *Proceedings of the Tenth
Anniversary Conference on Participatory Design 2008 (PDC '08)*. Indiana University,
Indianapolis, IN, USA, 92-101.

Latour, B. (2009). From Realpolitik to Dingpolitik or How To Make Things Public. In
F. Candline and R. Guinds (Eds), *The Object Reader* (pp. 153-164). London:
Routledge.

Maze, R. (2016) Design and the Future: Temporal Politics of 'Making a Difference' In.
R. Smith, K. Vangkilde, M. Kjaersgaard, T. Otto, J. Halse, T. Binder (Eds) *Design
Anthropological Futures* (pp. tbd). London: Bloomsbury.

Vertesi, Janet, David Ribes, Laura Forlano, Yanni A. Loukissas, and Marisa Cohn
(2016). "Engaging, Critiquing, and Making Digital Systems: Crossings between STS
and Design," in *The STS Handbook*. Cambridge: MIT Press.

Week 10: 24 October

Guest Lecturer: Robert Rosenberger (PubPol)

Philosophy of Technology

Rosenberger, R., & P.-P. Verbeek. (2015). "A Field Guide to Postphenomenology." In: *Postphenomenological Investigations: Essays on Human-Technology Relations*, R. Rosenberger & P.-P. Verbeek (Eds.). Lexington Books, pp. 9-41.

Ihde, D. (1999). "Technology and Prognostic Predicaments." *AI & Society*. 13: 44-51. Forss, A. (2012). "Cells and the (Imaginary) Patient: The Multistable Practitioner-Technology-Cell

Interface in the Cytology Laboratory." *Medicine, Health Care, & Philosophy*. 15: 295-308.

Vallor, S. (2015). "Beyond Ordinary Givenness? Postphenomenology, Digital Imaging, and Evidentiary Responsibility." In: *Technoscience and Postphenomenology: The Manhattan Papers*, J. K. B. O. Friis & R. P. Crease (Eds.). Lexington Books, pp. 19-37.

Rosenberger, R. (2014). "Multistability and the Agency of Mundane Artifacts: from Speed Bumps to Subway Benches." *Human Studies*. 37: 369-392.

Rosenberger, R. (2014). "How Cities Use Design to Drive the Homeless Away." *The Atlantic* online. 6.19.2014.

<http://www.theatlantic.com/business/archive/2014/06/how-cities-use-design-to-drive-homeless-people-away/373067/>

Week 11: 31 October

Guest Lecturer: Germán Vergara (HSOC)

STS & the Environment

McNeil, J.R. "The State of the Field of Environmental History." *Annu. Rev. Environ. Resour.* 2010. 35:345-74.

Carey, Mark. "Latin American Environmental History. Trends and Future Directions." *Environmental History* 14 (April 2009): 221-252.

Josephson, Paul. "Technology and the Environment." *A Companion to Global Environmental History*, First Edition. Edited by J. R. McNeill and Erin Stewart Mauldin.

Week 12: 7 November

Guest Lecturer: Kenneth Knoespel (LMC)

Bruno Latour in Action

Latour, B. 'Machines' (Chapter 3), *Science in Action* (Cambridge: Harvard Univ. Press, 1987)

Latour, B. 'Crisis' (Chapter 1) and 'Constitution' (Chapter 2), *We Have Never Been Modern* (Cambridge: Harvard Univ. Press, 1993)

Latour, B. 'An Exciting Innovation' (Chapter 1), *Aramis or the Love of Technology* (Cambridge, Harvard Univ. Press, 1996)

Latour, B. 'Circulating Reference: Sampling the Soil in the Amazon Forest,' *Pandora's Hope: Essays on the Reality of Science Studies* (Cambridge: Harvard Univ. Press, 1999), pp. 24-79.

Latour, B. *War of the Worlds: What About Peace* (Chicago: Prickly Paradigm Press, 2002)

Latour, B. 'Introduction' and 'Defining the Object of Inquiry' (Chapter 1), *An Inquiry into Modes of Existence: An Anthropology of the Moderns* (Cambridge: Harvard Univ. Press, 2013)

Week 13: 14 November

Guest Lecturer: Lisa Yaszek

Science Fiction

Darko Suvin, "Introduction," *Metamorphoses of Science Fiction: On the Poetics and History of a Literary Genre*.

Istvan Csicsery-Ronay, Jr. "Imaginary Science." *The Seven Beauties of Science Fiction*.
Donna Haraway, "Cyborg Manifesto."

Sheriann Lewitt, "A Real Girl"

William Gibson, "Johnny Mnemonic"

CL Moore, "No Woman Born"

Week 14: 21 November

Guest Lecturer: Mary Fox (Public Policy) & Willie Pearson (HSOC)

Sociology of Science/ Gender, Science and Equity

M. F. Fox, K. B. Whittington, and M. Linkova, "Gender, (In)Equity, and the Scientific Workforce." *Handbook of Science and Technology Studies*, MIT Press, 2017.

M. F. Fox, G. Sonnert, and I. Nikiforova, "Programs for Undergraduate Women in Science and Engineering: Issues, Problems, and Solutions." *Gender and Society* 2011.

Direct link to article - students can click

through: https://www.researchgate.net/publication/254093017_Programs_for_Undergraduate_Women_in_Science_and_Engineering_Issues_Problems_and_Solutions

--M. F. Fox, "Gender, Family Characteristics, and Publication Productivity Among Scientists." *Social Studies of Science* 2005.

Direct link to

article: https://www.researchgate.net/publication/237250025_Gender_Family_Characteristics_and_Publication_Productivity_Among_Scientists

Week 15: 28 November

Guest Lecturer: Steve Usselman

Technology, Innovation and Political Economy

Nathan Rosenberg, "Problem's in the Economist's Conceptualization of Technological Change," in his *Perspectives on Technology*, Chapter 4.

Donald MacKenzie, "Economic and Sociological Explanations of Technological Change," in his *Knowing Machines. Essays on Technical Change*, Chapter 3.

Richard R. Nelson and Sidney G. Winter, "Evolutionary Theorizing in Economics," *J. of Economic Perspectives*, 16:2 (2002), 23-42.

Alan L. Olmstead and Paul W. Rhode, "Induced Innovation in American Agriculture: A Reconsideration," *Journal of Political Economy*, 101, No. 1 (1993): 100-18.

<http://www.jstor.org/stable/2138675>

Recommended: excerpts from the Introduction to Olmstead and Rhode's recent book (PDF)

And Wrap up

Week 16: 5 December

Last Day of Class, Party, Final Exam Due

