HIST 31405 STEM & Gender

Spring 2019
T/Th 9:00-9:15 2127 WALC
Course Credit Hours: 3
*fulfills University Core requirements of Humanities, and Science, Technology & Society

Sharra Vostral, PhD
Associate Professor
svostral@purdue.edu
307 University Hall
office hours: Tuesday 10:30-11:30

The course syllabus and other course materials are posted on Blackboard.

Course Description

Technological innovation has been a cornerstone of American identity. How technology matters to gender, and gender matters to technology, will be explored through studying amateur and professional scientists, industrialization, education, sexual division of labor, and home and work spaces in twentieth century America. Examining objects of technological innovation, their production, consumption, and use, reveals changing relationships between men and women.

Learning Outcomes

Students will be able to:
• appreciate the circumstances and history of technological innovation in relation to gender
• understand and recognize how assumptions about gender may influence the practice of science and development of technologies during the late 19th and 20th centuries
• analyze the design of objects to understand cultural consequences of their use
•develop skills for reading critical historical commentaries and evaluating them
•gain ability to question technological artifacts, practice, and knowledge in historical context

Assignments (100 points):

Individual Work
15%   Homework commentary (5 x 3 points each)
10%   Archival Essay
10%   Metaphor Essay
25%   Design Project
                proposal – 5 points
                critique/input to partners - 5
                individual presentation with model/mock up – 5

write up – 10

10%   Discussion support (including leading a discussion and participation)
15%   Group Project – (presentation, write up, peer evaluation)
15%   Final Project

Deadlines

1/17	8:00 am	Homework
1/29	8:00 am	Homework
2/5	8:00 am	Homework
2/12	11:59 pm	Metaphor Paper
2/19	11:59 pm	Archival Paper
2/21	8:00 am	Homework
2/28	11:59 pm	Design Proposal
3/5	In-class	Partner Check-in
3/19	8:00 am	Homework
3/26	In-class	Group Project
3/28	In-Class	Group Project
4/2	11:59	Partner Critique
4/9 & 4/11	In class	Individual Presentations
4/16	8:00 am	Homework (optional)
5/1	11:59 pm to BB	Final Individual Project

Grade Scale

A 94-100%; A- 90-93%; B+ 87-89%; B 84-86%; B- 80-83%; C+ 77-79%; C 74-76%; C- 70-73%; D+ 67-69%; D 60-66%; F 0-59%

Course Materials

Articles available as pdfs through Blackboard.

Useful link:
Writing Lab at Purdue

Participation

Just showing up is not enough. Your participation grade will reflect your overall participation in class discussions. I will also take into account office visits in which we discuss course material.

Criteria for grading this assignment: frequency of your participation (this includes asking intelligent questions); quality of your comments; your ability to get other students talking by

raising questions or debating other students directly. **Regular and alert attendance is expected and will not qualify you for full participation points.**

Policies
Assignments are due at the beginning of class on the day they are due. THERE ARE NO LATE GRADES OR INCOMPLETES. You will need a note from the Dean to explain extenuating circumstances.

Missed classes: You are not eligible for an A with more than 3 absences. You may use your 3 however you wish. Attendance is required by university policy and is expected by me.

Academic Honesty
Student-teacher relationships are built on trust. For example, students must trust that teachers have made responsible decisions about the structure and content of the courses they teach, and teachers must trust that the assignments that students turn in are theirs. Acts that violate this trust undermine the educational process.

In this class, all assignments that are turned in for a grade must represent the student's own work. In cases where help was received, or teamwork was allowed, a notation on the assignment should indicate with whom you collaborated. If you have any questions concerning this policy before submitting an assignment, please ask for clarification.

The following will be considered instances of academic dishonesty: copying a paper from another student; recycling one's own or others' papers from other courses; obtaining part or all of a paper from another source other than your own research without providing quotations and citations; direct quotation from printed, electronic or online sources without providing a citation (including rewording or "patchwork plagiarism"); and the use of specific ideas and interpretations of printed or electronic sources without citation ("theft of ideas"). Any material that you quote should be placed under quotation marks and cited with a footnote or reference immediately following the quoted portion that provides the source. Do not hide plagiarism by quoting material and then adding a vague reference at the end of the text. You may discuss homework assignments with other students, and you may prepare for papers and class with other students, but the writing assignments should be your own work. If you quote any source or even take ideas from that source, the source should be referenced completely. The penalty for plagiarism can be an F in the course.

Copying of class notes: You may make a photocopy of written class notes for friends who have been absent from class for their personal use only. Any wider distribution outside the classroom, such as posting on the Internet or via a list to anyone not in this class, is prohibited and will result in an F in the course.

In case of emergency:
In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or

other circumstances beyond the instructor's control. Here are ways to get information about changes in this course.

> Course web page (via Blackboard)
> Instructor's email (svostral@purdue.edu)
> Instructor's phone (History Department, (765) 494-4132)

Schedule
*indicates a scholarly article

1/8
This is a history-based course, but it incorporates different disciplinary approaches (anthropology, sociology, political science, etc.) each with various methods of obtaining and evaluating evidence.

- Introductions
- SNL – GE Big Boy Appliances

1/10
Gender & Identity Perspectives
- Claire Cain Miller, "Technology's Man Problem," *The New York Times* (4/5/2014)
- Alison Coil, "Why Men Don't Believe the Data on Gender Bias in Science," WIRED (8/25/17) [pdf on BB]
- "Women Engineers on the Rampant Sexism of Silicon Valley"
- *Banu Subramanium, "Snow Brown and the Seven Detergents," *Women's Studies Quarterly,* Vol. 28, No. 1/2, Building Inclusive Science (Spring - Summer, 2000), pp. 296-304.

1/15
Technology as Politics
- *Langdon Winner, "Do Artifacts Have Politics?"
- In-class Video: "New York: A Documentary Film" (Episode 7: The City and the World - Part 4 "Moses on the Move")

1/17
Gendered Technology
- *Deborah Johnson, "Sorting out the Question of Feminist Technology," in *Feminist Technology* (University of Illinois Press, 2010): 36-54.
- *Londa Schiebinger and Martina Schraudner, 'Interdisciplinary Approaches to Achieving Gendered Innovations in Science, Medicine, and Engineering', *Interdisciplinary Science Reviews* 36.2 (2011): 154–67.
- Primary Source: The Measure of Man
- Homework Due

1/22
STEM in the Archives: Stephanie Schmitz
- *Donna Drucker, "'In a Sense, It Is a Game': Women's Dormitory Life at Purdue University During the Second World War," *Indiana Magazine of History* 113 (March 2017): 1–47.
- Read: Laura Schmidt, "Using Archives: A Guide to Effective Research"
- Fill out Registration Form (pdf on BB)
- Hold Cart Item list on BB

1/24
Metaphor in Science & Technology
- *Theodore L. Brown, Chap 1 & 2 in *Making Truth: Metaphor in Science*, University of Illinois Press, 2003.
- *Upchurch and Simona Fojtova, "Women in the Brain: A History of Glial Cell Metaphors," *NWSA Journal* 21.2 (2009): 1-20.
- WATCH for metaphor: Sara Chodosh, "When you lose weight, your fat cells don't just let go of fat," *Popular Science* (1/11/18)
- WATCH for metaphor: "What Happens to your body and brain when you don't get enough sleep"
- OPTIONAL: Language as thought, Sapir Whorf Hypothesis

1/29
The Technological Fix
- *Lisa Rosner, *The Technological Fix: How People Use Technology to Create and Solve Problems*, intro, afterward.
- *Sally Wyatt, "Non-Users Also Matter: The Construction of Users and Non-Users of the Internet," in Oudshoorn and Pinch, *How Users Matter*, 67-79.
- Bryan Gruley, "Crash-Test Dummies are Getting Fatter Because We Are, Too" *Bloomberg Businessweek* (10/25/18) [pdf on BB]
- All: Brainstorm examples & consequences of the technological fix
- Homework Due

1/31
Speculative Design
- *Anthony Dunne & Fiona Raby, Chap. 5 "A Methodological Playground: Fictional Worlds and Thought Experiments," in *Speculative Everything: Design, Fiction, and Social Dreaming* (Boston: MIT Press, 2013): 69-88.
- Peruse: Gendered Innovations
- Bring to Class: Love it, Despise it objects of gendered use
- Discuss Project Assignment

2/5
Computing

- *Jennifer Light. "When Computers Were Women," *Technology and Culture* 40.3 (July 1999): 455-483.
- *Nathan Ensmenger "'Beards, Sandals, and Other Signs of Rugged Individualism'": Masculine Culture within the Computing Professions," *Osiris* 30 (2015): 38-65.
- Benj Edwards, "Rediscovering History's Lost First Female Video Game Designer," *Fast Company* (10/27/17)
- Homework Due

2/7
Representations of Scientists
- *Mary Barbercheck, "Mixed Messages, Men and Women in Advertisements in *Science*" *Women, Science & Technology Reader* (2001) Chap 10.
- *Evelyn Fox Keller, Chapter 7, "From Working Scientist to Feminist Critic" (from the *Gender & Science Reader,* 59-61)
- In class video: "Science and Gender with Evelyn Fox Keller"; Bill Moyers transcript

2/12
Metaphor
- Individual presentation: Metaphor
- Metaphor Paper due

2/14
Politics of Scientific Practice
- *Dara Horn, "The Shoulders of Giants" WST Chap 4
- *Christina Wenneras and Agnes Wold, "Nepotism and Sexism in Peer Review" WST Chap 5
- *Hilary Rose, "Nine Decades, Nine Women, Ten Nobel Prizes: Gender Politics at the Apex of Science" WST Chap 6
- Allison Arieff, "Where Are All the Female Architects?" (NYT 12/15/18) [pdf on BB]
- Aaron Caroll, "Why the Medical Research Grant System could be costing us great ideas," (NYT 6/18/18) [pdf on BB]

2/19
Labor: Space Exploration
- Margot Le Shetterly, *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race* (New York: William Morrow, 2016); chapters 1-11
- Archival Paper Due

2/21
Labor: Space Exploration

- Margot Le Shetterly, *Hidden Figures: The American Dream and the Untold Story of the Black Women Mathematicians Who Helped Win the Space Race* (New York: William Morrow, 2016); chapters 12-23
- ['Hidden Figures': How Black Women Did the Math That Put Men on the Moon](#)
- Maya Wei-Haas, [The True Story of "Hidden Figures," the Forgotten Women Who Helped Win the Space Race](#)
- <mark>Homework due</mark>

2/26
STEM Identities
- *Wendy Faulkner, "'Nuts and Bolts and People': Gender-Troubled Engineering Identities," *Social Studies of Science*, 2007, 37, 331–56.
- Podcast: ["Structural Integrity," 99% Invisible (10/12/15)](#)

2/28
CARE Education: Bystander Intervention, Molly Barnard
- <mark>Design Proposal Due</mark>

3/5
Circuits & Computing
- *Lisa Nakamura, ["Indigenous Circuits: Navajo Women and the Racialization of Early Electronics Manufacture,"](#) *American Quarterly,* 66:4, December 2014, 919-941.
- *Donna Drucker "Keying Desire: Alfred Kinsey's Use of Punched-Card Machines for Sex Research," *Journal of the History of Sexuality*, 22 (January 2013), 105-25.
- <mark>Partner Check-in</mark>

3/7
Gender & Bodies
- *Anna Creadick, "Model Bodies, Normal Curves," in *Perfectly Average: The Pursuit of Normality in Postwar America* (University of Massachusetts Press, 2010).
- *Rachel Weber, "Manufacturing Gender in Commercial and Military Cockpit Design," *Science, Technology and Human Values*," Vol. 22, No. 2 (Spring 1997): 235-253.
- [Norm & Norma](#)

Spring Break

3/19
Gender and Place
- *Judy Wajcman, "The Built Environment: Women's Place, Gendered Space" in Mary Wyer, Mary Barbercheck, Donna Giesman, Hatice Örün Öztürk, and Marta Wayne, eds. *Women, Science, and Technology: A Reader in Feminist Science Studies* (Routledge, 2001), pp. 194-208.

- *Carol Cohn, "Sex & Death in the Rational World of Defense Intellectuals" Chap 9 in *Women, Science & Technology*
- <mark>Homework due</mark>

3/21
Gender and Biology
- *Emily Martin, "The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles" (*Feminist Theory and the Body*, 179-189)
- *Cynthia Daniels, "Between Fathers and Fetuses: The Social Construction of Male Reproduction and the Politics of Fetal Harm" (*WST*, 312-331)
- Penis Fencing (watch video)
- "The Sperm's Journey" (sections TBD)

3/26
Group Projects

3/28
Group Projects

4/2
Politics & Historical Legacy: Algorithms
- *Cathy O'Neil, *Weapons of Math Destruction*, intro, ch. 2, conclusion
- Cathy O'Neil TED Talk, The Era of Blind Faith in Big Data Must End
- "Keeping Bugs out of the System"
- <mark>Partner Input/Critique Due</mark>

4/4
Politics & Historical Legacy: Algorithms
- *Safiya Noble, Algorithms of Oppression: How Search Engines Reinforce Racism, intro, ch. 1
- Watch: Safiya Noble | Challenging the Algorithms of Oppression
- Watch: Joy Buolamwini: How does facial recognition software see skin color?
- Steve Lohr, "Facial Recognition is Accurate if You're a White Guy" (NYT 2/9/18)

4/9 Individual Project Presentations

4/11 Individual Project Presentations

4/16
Politics & Historical Legacy: Medical Devices
- *Adele E. Clarke, Joan H. Fujimura, "Introduction: What Tools? Which Jobs? Why Right?" *The Right Tools for the Job: At Work in Twentieth-Century Life Sciences*

- *Terri Kapsalis, "Mastering the Female Pelvis: Race and the Tools of Reproduction," in *Skin Deep Spirit Strong*
- Alix Spiegel, "How a bone disease grew to the fit the description" NPR (12/21/09)
- Follow up: Devin Dwyer, "Supreme Court to Decide if Fosamax users can sue Merck over bone fractures" (1/7/19)
- OPTIONAL: Rose Eveleth, "Why No One Can Design a Better Speculum," *The Atlantic* (11/17/14)
- OPTIONAL: Arielle Pardes, "The Speculum Finally Gets a Modern Redesign," WIRED (10/5/17)
- <mark>Optional Homework Due</mark>

4/18
Including Different Voices
- Sharra Vostral, "Toxic Shock Syndrome, Tampons & Feminist Science," *Catalyst* (2017).
- Challenging Wikipedia
- Louise Matsakis, "Don't Ask Wikipedia to Cure the Internet," WIRED (3/15/18) [pdf on BB]

4/23 Discussion and Closing activity

4/25 – No class. Vostral travel to AAHM conference

Final Project due 5/1 by 11:59 pm

Extras:

Labor: Space Exploration
- Martha Ackman, *The Mercury 13: The True Story of Thirteen Women and the Dream of Space Flight* (Random House, 2004); chap excerpts.
- Podcast: Martha Ackman on "The Mercury 13," *To the Best of Our Knowledge*
- Rocket Girls
- EXTRA: support document: Mercury 13 Finding aid

Data Reproducibility
- Listen: Planet Money, Episode 677, "The Experiment Experiment"