CAS 217: Introduction to Feminist Science Studies
Bodies, Technologies, and Environments
Dr. Evangeline (Vange) M. Heiliger

Class meets on MW 3-4:20 p.m. in Science Center A255

Office Hours: My office hours are posted on my door in King 141-E. I encourage you to come and speak with me often. I am also available for quick questions before class in A255 from 2:20-2:40, and from 4:30-5 p.m. Need more time? Come and see me in King 141-E, sign up for an appointment on my door, or email me for an appointment at: Evangeline.Heiliger@oberlin.edu

This course offers credit in CAST, GSFS and ENVS

COURSE DISCLAIMER: Students will encounter material of a sexually explicit nature. All those who enroll and remain in the course are expected to engage this content respectfully and with scholarly professionalism.

Required Texts:
Science section of The New York Times (see online for free.)
http://www.nytimes.com/section/science

Online Readings/ Course Reader—all other readings found on course website and must be printed out and brought to class.
* This text is located on reserve in the science library. You are not required to purchase it.

Course Overview:
This course serves as an introduction to feminist science studies, with a particular focus on the production of race, gender, sexuality and dis/ability in various biosciences. We will consider such questions as: What knowledges count as “science”? What is objectivity? How do cultural assumptions shape scientific knowledge production in different historical periods? What is the relationship between “the body” and scientific data? How are bodies, technologies, and environments described in scientific research? Is feminist science possible? We will read and discuss a range of sources, including: historical, cultural, sociological, and theoretical accounts of science; critiques of science; primary science publications (historical and contemporary); and the Science section of the NY Times.
How will we do this? Throughout the semester we will look at key sites and situations in which the categories of race, gender, sex, sexuality, and dis/ability are produced, contested and made meaningful. After examining the history of feminist science studies and thinking about intersectional science, we will think about three thematic areas: Bodies, Technologies, and Environments. In each unit we will explore a particular area of scholarship and scientific practice, gathering scholarship from disciplinary and interdisciplinary engagements with the topic. Furthermore, we will turn our sensory attention to the representations that we encounter – whether visual, textual, auditory or other) – and which circulate in the media, in stories that we are told, or through art and film. These will be threads which we follow throughout the course and with which we create our own webs of intersectionality.

**Structure:**
The course will have a flexible lecture/discussion format. During each class session, five students will present on the day’s readings for approximately 5 minutes each, posing discussion questions for their classmates. Their presentations will be followed by class discussion for 20-30 minutes. Each class will also hold time during the last 1/3 of class time for a brief lecture previewing the following class’s contents. In this way, students will have three ways to engage the day’s materials: from the professor’s preview lectures; through reading, writing, (and sometimes presenting) on the day’s readings; and through discussion with one’s classmates.

**Interdisciplinarity and Discussions (online and in-class)**
As a class, we come from many different academic disciplines (or perhaps no discipline at all). As such, our languages to discuss course materials are absolutely going to be different, because each field has a particular vocabulary and specialized requirements for what constitutes knowledge production. In my experience with introductory / interdisciplinary classes, it takes about three weeks for us all to learn common vocabulary and concepts enough to be on the same page for discussion. I have accounted for this in my syllabus design. You enter with knowledge and thus will know some things very well, whereas other concepts and vocabulary will be brand new to you. You may feel behind in your knowledge because others know more on a particular topic than you do, or are more savvy in their choice of vocabulary. **You are not behind.** Please be patient, kind, respectful, and curious towards your own learning and one another’s during this period and throughout the semester. It takes time and care to build interdisciplinary learning environments.

Throughout the course, we will explore a number of controversial issues about race, sexuality, gender, sex, dis/ability, inequality, and identity that may provoke heated debate, discomfort, and disagreement. I do not intend to smooth over these differences; rather we must actively and collectively work to create a space for respectful, engaged and honest dialogue and to help you develop skills to articulate your positions and engage others respectfully. I ask that each member of the class respond thoughtfully and carefully with each other and with various course topics.

Please be aware that some issues in this course may be personally difficult for people to discuss. I cannot always anticipate what those difficult topics will be, but I will do my best to respond appropriately if these situations arise, and I encourage you to come and speak with me if you have any concerns.
**Academic Incompletes**
Assignments will not be accepted past the end of reading period without an approved incomplete from the Dean of studies. Extensions of final projects need an approved incomplete from the Dean of Studies. These are College-wide policies and there are no exceptions.

**Accessibility and Accommodations for Students with Disabilities**
I want all of you to be able to learn in this class and be able to demonstrate what you are learning. I am committed to removing disability-related barriers to your learning whenever possible. Please utilize disability services in Peters G-27/G-28 if you are eligible to ensure that you accommodation needs are approved and in place to begin the term successfully. Please also meet with me during the first week of class so we can discuss your learning needs and plan accordingly. You are not expected to disclose a disability to me in order to receive accommodations. All students (with and without documented disability needs) are encouraged to meet with me during the first week of class to discuss your learning needs and plan accordingly.

**Changes to Syllabus:** The syllabus is a flexible document and will change according to class needs and in order to facilitate a better learning environment / learning outcome.

**Copyright Notice:** All lectures and lecture materials are the intellectual property of the instructor. No recording or distribution of these materials may be done without the expressed consent of the instructor.

**Honor Code:**
The policies described in the Oberlin College Honor Code and Honor System apply to this class. Written work must include proper citations and must be the product of your own work. You are also required to include the following statement on all written assignments: "I affirm that I have adhered to the Honor Code in this assignment."

If you have any questions about how to properly cite sources or about the Honor Code, please feel free to approach me. For more information on the Honor Code, see http://www.oberlin.edu/students/student_pages/honor_code2.html

**Student Athletes:**
If you are a student athlete and member of an Oberlin College sports team and your athletic schedule will cause you to miss a class, please come and speak with me.

**Assignments:**
- Daily (Mon/Weds) Reading Response Papers (1-2 pp): 15%
- Oral Presentation and Short (3-4pp) Discussion Papers (2): 10%
- Midterm (Proposal for Improving Scientific Study): 20%
- Art and Science Response Paper (3-4pp): 5%
- Environmental Dashboard/POWER Project: 15%
- Final (Revised Proposal for Improving Scientific Study): 15%
- Participation, Discussion, and Attendance: 20%
About the Assessments

Daily Reading Response Papers:
Your paper should always contain a brief (short paragraph) summary of the main points of the reading (except as noted below), questions to discuss in class, things you agree/disagree with, and things you don’t understand. You may hand your paper in electronically (due by 1 p.m. on the class discussion board) or in person (at the beginning of each class session.) **Hard copies must be stapled.** Discussion board entries, like all written work, must be spelling- and grammar- checked, typed, double-spaced, in Times New Roman 12 point font, with 1-inch margins. Entries should be approximately 1-2 pages long for each class (2-4 pp total per week).

Oral Presentation and Short (3-4pp) Discussion Papers:
You will present on the readings and lead discussion twice during the semester: once before fall break and once after. Your discussion paper is a reading response paper plus questions for discussion and a consideration of outside sources (such as news, pop culture, media, etc) in relation to your discussion. You should not only pose discussion questions, but also answer one or more of them in your short paper. A draft is due to me electronically 24 hours before your presentation day(s). The final version is due to me in class as a hard copy.

Midterm Scientific Study Proposal:
You will propose changes to an existing scientific study based on the concepts, theories, and histories you have learned during the first half of the semester. You may choose something you read about in class, in the NYT, online, around campus, or in your own life. More information will be given in early October. Your midterm will be due at the beginning of class (3 p.m.) on Weds, Oct 14, 2015. No late midterms will be accepted.

Art and Science Response Paper:
We will visit the Allen Memorial Art Museum on Weds, Oct 14 3-4:20 p.m. You will write a 3-4 pp response paper to a work or collection of works viewed during the visit, and consider these artworks in relation to concepts learned in the course. Due Mon, Oct 26, 2015 at 3 p.m. (This is the first class after fall break.)

Environmental Dashboard / POWER (Providing Oberlin With Energy Responsibly) Project:
This community-engaged-learning project will allow us to think about ways that scientific data can influence and be influenced by the social, in a very local raced/gendered/classed environmental context. This project will take place during the second half of the semester and culminate in student-generated content for Oberlin’s (town and college) Environmental Dashboard. Based on their strengths and interests, students may be asked to conduct oral interviews with local residents about sustainability, flyer Oberlin-area homes with information about free environmental services, produce a video about local sustainability measures, analyze existing data on weatherized homes in Oberlin, or other activities to be determined in conversation with POWER. Deadlines: TDB in November. Environmental Dashboard content due by Weds, Dec 2, 2015.

Final Revised Scientific Study Proposal:
You will revise your Midterm’s proposed changes to an existing scientific study based on the concepts, theories, and histories you have learned during the entire semester. You may choose something you read about in class, in the NYT, online, around campus, or in your own life. Feedback on your midterm (from the professor and small groups) will inform your revisions for the final. More information will be given in December. Your final will be due electronically by 11 a.m. on Saturday, Dec 19, 2015. No late finals will be accepted.

Participation, Discussion, and Attendance:
Come to every class. Listen carefully and ask questions. Be curious. Offer comments and thoughtful critiques. If speaking in class is difficult for you, come and see me for ideas about how to participate in other ways. See my note on “Interdisciplinarity and Discussion” for more on my expectations.
Schedule of readings (through Sept 30, 2015)

Reading Key
ANG = Feminist Science Studies: A New Generation
WST = Women, Science, Technology- 3rd Ed
WST2 = Women. Science, Technology- 2nd Ed. (In science library on reserve)
RES = The “Racial Economy” of Science (on reserve in science library)

Mon Aug 31—Introductions

Weds, Sept 2—Gendered and Racialized Science in the News
Readings:
  http://www.time.com/time/magazine/article/0,9171,921830,00.html
- A Finger on Sexuality: http://news.bbc.co.uk/2/hi/science/nature/695142.stm
- Obama effect:
- Oliver Sacks, Neurologist Who Wrote About the Brain’s Quirks, Dies at 82.
- Science Says It’s Totally Okay to Spend Your Money on Travel?
- The Thermostat in Your Office May Be Sexist.
- Why Your Office Is So Cold: Its AC System Ss Designed For Men.

Mon, Sept 7—NO CLASS FOR LABOR DAY

Part 1: History

Weds, Sept 9--What is Feminist Science Studies?
- ANG-introduction
- WST-introduction
Lecture: how do culture and politics enter scientific research?

STRONGLY RECOMMENDED:
Attend “American Injustice: Mercy, Humanity and Making a Difference” Bryan Stevenson,
founder of the Equal Justice Initiative
7:30 p.m. Finney Chapel, Weds, Sept 9, 2015
Mon, Sept 14: —Gendered and Racialized Experiences in Science Education
  • ANG-Choose 4 of the following: Ginorio, Allen, Bartsch, Clarke, Picart, Whitaker, Subramaniam, Flower
  • WST2- Choose 2 of the following: Keller, Sands, Subramaniam
Lecture: Women as subjects of scientific research: feminist empiricism and feminist standpoint methodologies

Weds, Sept 16—Can Women Be Subjects of Knowledge?
  • WST2: Longino, “Can There Be a Feminist Science?” pp 216-222
  • 2. Collins “Learning from the Outsider Within: The Sociological Significance of Black Feminist Thought”
  • WST: Ch 27, Haraway “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective”
Lecture: Postcolonial STS: Three Questions

Mon, Sept 21—Postcolonial STS
  • Sandra Harding “Seeing Ourselves as Others See Us: Postcolonial Science Studies”
  • Sandra Harding “With Both Eyes Open: A World of Sciences”
  • RES: Third World Network “Modern Science in Crisis: A Third World Response”
Lecture: Feminist Postcolonial STS: Are There Gendered Standpoints on Nature?

Weds, Sept 23- NO CLASS YOM KIPPOR

Part II Interdisciplinarity

Mon, Sept 28- Guest Lecture Dr. Rebecca Whelan
Interdisciplinary feminist science studies research
Readings: TBD

STRONGLY RECOMMENDED:
Attend An Evening with Zadie Smith. Zadie Smith, prize-winning author of White Teeth and On Beauty
7:30 p.m. Finney Chapel, Tues, Sept 29, 2015

Weds, Sept 30 —Postcolonial STS
  • Londa Schiebinger, “Feminist History of Colonial Science”
  • Linda Tuhwa Smith, “Research Through Imperial Eyes”
  • Sandra Harding, “Feminist Science and Technology Studies at the Periphery of Enlightenment”
Lecture: interdisciplinary feminist science studies
Oct-Dec, 2015 Schedule of Readings

*Note: you are required to read and respond to at least three readings for each class meeting. When there are more than three readings listed for a day, you can choose which three to read and respond to. You are encouraged to read more as it suits your interests and time.

Mon, Oct 5 – Science, Culture and Re-evaluating Objectivity in/of Science

- “Life, Sex, and Cells.” Kinsman. ANG 193-203
- “After Absolute Neutrality.” Harding. ANG 291-305
- WST Ch 16 “Science, Power, Gender: How DNA Became the Book of Life” WST 265-272

Bonus:
- WST Ch 27. “Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective” WST 455-473
- WST Ch 26. “Beyond Postcolonial Theory: Two Undertheorized Perspectives on Science and Technology” WST 431-455

Wed, Oct 7 – Feminist Frameworks, Interdisciplinarity, and Methods for (Better) Science—Tanya, Em

- WST Ch 7. “Interdisciplinary Approaches to Achieving Gendered Innovations in Science, Medicine, and Engineering” Schiebinger and Schraudner. WST 100-110
- “Over the Edge: Developing Feminist Frameworks in the Sciences and Women’s Studies” Wyer. ANG 72-80.

Mon, Oct 12 — Nonhuman Animals and (Human) Gender Categories—Madison, Sofia

- “Eluding Capture: The Science, Culture, and Pleasure of “Queer” Animals. S. Alaimo. (available online/ course website)
- “Contesting Territories: Female-Female Aggression and the Song Sparrow.” Elekonich. ANG 97-105.
- WST Ch 17. “The Bare Bones of Sex: Part I—Sex and Gender” WST 272-296
Weds, Oct 14 – **Midterm due**
  - Recommended:
  - WST Ch 17. “The Bare Bones of Sex: Part I—Sex and Gender” WST 272-296 (If you didn’t read it yet)

**Midterm assignment guidelines**

You will propose changes to an existing scientific study based on the concepts, theories, and histories you have learned during the first half of the semester. You may choose something you read about in class, in the NYT, online, around campus, or in your own life. Your midterm should contain the following:

1. 4-5 page narrative outlining your proposed changes to a scientific study that would produce new and better/more complete knowledge. This should include:
   a) a 1 page description of the original study (look at the abstract for ideas on summarizing the study);
   b) ½-1 page outlining the weaknesses of the existing study (e.g. methods, variables, research population, location, underlying assumptions, missing key questions, etc);
   c) 2-3 pp describing what and how you would change the study to make it “feminist science”;
   d) and 1 page describing the weaknesses or drawbacks of your proposed changes (but still maintaining a strong sense that your proposed changes are valuable and necessary).
   e) Note that you will need to define “feminist science” in your document, with citations to one or more class readings where appropriate. You will also need to discuss specifics of what you are proposing to change and why, again with citations to class readings. For example, are you suggesting that the study ask different questions? Investigate medical effects of a drug on a different population based on gender, race, age, sexuality, or some other category of identity? Why? What makes your proposed changes necessary and important? What makes them feminist?
2. A paper copy of the original study
3. When applicable, paper copy of any documents that led you to the original study (such as a news article, blog posting, FB meme, etc.)
4. A bibliography or works cited.

Your midterm will be due at the beginning of class (3 p.m.) on Weds, Oct 14, 2015. No late midterms will be accepted. Please note that we are meeting in the Allen Memorial Art Museum (AMAM) on the day your midterms are due, so you will give me your midterm there.

**Art and Science Response Paper:**

We will visit the Allen Memorial Art Museum on Weds, Oct 14 3-4:20 p.m. You will write a 3-4 pp response paper to a work or collection of works viewed during the visit, and consider these
artworks in relation to concepts learned in the course. Please include citations to readings from class. Due Mon, Oct 26, 2015 at 3 p.m. (This is the first class after fall break.)

Mon, Oct 26—**Scientific Research into Sex/Gender—Kris & Tess**

- **Art and science paper due**
- WST Ch 12. “Hardwired for Sexism? Approaches to Sex/Gender in Neuroscience”
- WST Ch 20. “Sexing the X: How the X Became the “Female Chromosome”” Richardson. WST 334-352
- Possible guest lecture(s)

Weds, Oct 28—**Technology and Sexuality—Sarah Larkworthy will lead**

- “Putting My Foot (Prosthesis, Crutches, Phantom) Down: Considering technology as Transcendence in the Writings of Donna Haraway.” Sharon Betcher. (online JSTOR)

Mon, Nov 2—**Race, Reproduction, Science, and Technology—Cria lead**


Weds, Nov 4—**Feminist Technosciences**

- WST Ch 32. From Science and Technology to Feminist Technoscience” Weber. WST 543-556
- WST Ch 22. “Gender and Technology” Bray. WST 370-384.
- WST Ch 23. “Queering Feminist Technology Studies” Landstrom. WST 385-399

Mon, Nov 9—**Cindy will guest lecture today**

**Gender, Language, and Science Economies**

• “Sexy Science” What’s Love Got to Do with It?” Lostroh. ANG 106-114.
• “Just Beneath the Surface: Rereading Geology, rescripting the Knowledge/Power Nexus.” Phillips & Hausbeck. ANG 125-137.
• Bonus: Barbercheck (Ask Professor Vange for a copy)

Weds, Nov 11—Environments and Nature
• WST. Ch 33. “Eco/Feminism and Rewriting the Ending of Feminism: From the Chipko Movement to Clayoquot Sound.” Moore. WST 557-572
• Bonus: “And the Mirror Cracked! Reflections of Natures and Cultures.” Subramaniam. ANG 55-62.

Mon, Nov 16—Science, Community, & Activism, Part I: POWER
• “‘Your Silence Will Not Protect You’: Feminist Science Studies, Breast Cancer, and Activism.” Spanier. ANG 258-274.
• “Fertile Futures: Grounding Feminist Science Studies Across Communities.” Manorama & Walters. ANG 248-257.
• Possible Guest Lecture(s)

Weds, Nov 18—Science, Community, and Activism, Part II: POWER
• “Toward a History of Us All: Women Physicians and Historians of Medicine.” Cabré. ANG 120-124.
• Possible Guest Lecture(s)

Mon, Nov 23—Engaged Community Activism / Learning with POWER
• TBD Readings, Workshops, Data Analysis, Interviews
• “Producing ‘Roundup Ready® Communities? Human Genome Research and Environmental Justice Policy” G. Di Chiro. (available online / course website)
• “Gender, Asthma Politics, and Urban Environmental Justice Activism.” J. Sze. (available online/course website)
• Possible Guest Lecture(s)
Weds, Nov 25-- Engaged Community Activism / Learning with POWER
• TBD Readings, Workshops, Data Analysis, Interviews

Mon, Nov 30—Science Education I—Anna & Erin
• “Reproductive and Resistant Pedagogies: The Comparative Role of Collaborative Learning and Feminist Pedagogy in Science Education.” Mayberry. ANG 145-156.
• WST Ch 1. “Science Faculty’s Subtle Gender Biases Favor Male Students.” Moss-Racusin, Dovidio, Brescoli, Graham, and Handelsman. WST 3-14.
• “How Can a Little Girl Like You Teach a Great Big Class of Men?” the Chairman said, and other adventures of a woman in science.” Naomi Weisstein, 1977 (online)
• “Why So Few? Women in Science, Technology, and Engineering.” AAUW (online)
• “Who Gets to Graduate?” NYT Magazine. (online)

Weds, Dec 2—Science and Education II—Sarah & Anah
• **Env-Dash/ POWER assignment due

Mon, Dec 7—Feminist Science Studies in Pop Culture / A little Queer Ecologies
• “Woman as Biocontrol: Re-reading Donna Haraway Through German Science Fiction. Sunka Simon. (online JSTOR)
• “Toward a Queer EcoFeminism” G. Gaard. (Available online/ course website)

Weds, Dec 9—Final Class: Where to Next?
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Saturday, Dec 19, 11 a.m. Finals Due Electronically.