

Women in Science HCOL 185J Syllabus Fall 2018

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Goals of the course

The objective of this course is to use a number of different approaches to examine the causes underlying the gender disparity in science and engineering. Although over the past 30 years women have entered the previously male fields of law, business, and medicine, the domains of the so-called 'STEM' (science, technology, engineering, or math) sciences like physics, computer science and engineering are still largely dominated by men.

In 2005 Larry Summers, the President of Harvard University, gave a speech at a conference on diversity in which he stated, "there is a difference in the standard deviation and variability of the male and female population." A finding, he went on to say, that explains why there would be more men than women at the elite levels of mathematical ability, and thus, why there are so few women represented in science and engineering. These remarks engendered a great deal of anger and debate. But what exactly was he saying? And is there any truth behind his remarks?

In this course we will address factors that may account for the under-representation of women in STEM careers. We will begin by examining sex-differences in the brain and behavior. To do this we will look at how sex is determined at the biological level. We will also examine the development of sex differences in biology and behavior from early childhood and through adolescence, both in a number of animal models and in human beings. We will discuss whether or not there are innate sex differences that predispose men towards and women away from science and mathematics? For example, is it true that men "naturally" excel in mathematically demanding disciplines, while women "naturally" excel in endeavors that require using language skills? Or do society and culture have more to do with the career choices made by young men and women? Are there pervasive stereotypes and biases that hinder young women from choosing a STEM major in college? Do you have to be a masculine woman to be a scientist or engineer?

We will also examine the paradigm of western science. Who are the American women in science today? What are the particular strengths of present-day women scientists? What obstacles hindered these women in their pursuit of science as a career? Do these barriers still exist today?

We will then look specifically at the role that men play in their interaction with women that may hinder women wanting to enter a STEM field. This is NOT a male-bashing course. Without men advocating for women in science, we will not be able to address some of the problems. To do this we will discuss in detail how boys are brought up in our society. And, lastly, we will discuss sexual harassment and gender bias in the STEM sciences in order to try to understand the objective nature of these phenomena.

Assignments

1. There will be a number of reading assignments to be completed before each class.
2. A (5 to 6 page) term paper, which will be an overview of a course topic of the students choosing.
3. A fictitious autobiography (9-10 pages) in which you pick a period of history prior to 1970 and describe your early life, education, struggles, family situation, and how you became a renowned scientist. If you are female this will entail how you

- became a successful female scientist, if you are male this will be about how you became a renowned male scientist. Each person will do a 15-minute class presentation on his/her life, which we will then discuss as a group.
4. A final day round table discussion on what we have learned and how to make the future more favorable to women in the sciences.

Evaluation

20% of the final grade will be based on class participation-be prepared to have written talking points and be ready to discuss the assigned readings.

30% of the final grade will be based on the paper.

15% of the final grade will be based on the written autobiography.

15% of the final grade will be based on the autobiography presentation.

20% of the final grade will be based on the final round table discussion.

Textbook

Why Aren't More Women in Science? Top Researchers Debate the Evidence.

Published by The American Psychological Association 2007

Edited by Stephen J. Ceci and Wendy M. Williams (this is a great collection of essays but hard to get-there are some at the bookstore and some online-I will make copies of each section for those who cannot get the book)

Class Schedule: (note: the readings listed do not constitute an exhaustive list and will be added to as the course proceeds). Readings not in the text will be available on Blackboard or handed out in class.

August 28th

1st class

Introduction to the course, evaluations, and assignments.

Read Larry Summers speech for next class: available on Blackboard.

August 30th

Everyone is "The Fish".

Discussion of Larry Summers infamous speech: what did he say? What did he mean?

Read "Introduction: striving for perspective in the debate in women in science" pgs 3-21 in book for next class.

Read " The five sexes" by Fausto-Sterling.

Sept 4th

Discussion of Introduction: striving for perspective in the debate in women in science.

Lecture :Sex differences at the biological level. What makes a body male or female?

Read: Chapter 1 in book pgs 27-37 for next class.

Sept 6th

Discussion of intro and chapter 1.

Lecture :Sex differences in cognition overview.

Read: Chapter 12 and 13 pgs 159-188 for next class.

Sept 11th

Discussion of chapters 12 and 13. We will hear a TedX talk

<https://www.youtube.com/watch?v=o0td5aw1KXA>

Read: His Brain, Her Brain, Larry Cahill Scientific American 2005:HANDOUT and Read: Chapter 14 pgs 189-198 for next class.

Sept 13th

Discussion of Larry Cahill's paper and Chapter 14. Can anyone really tell a male from a female human being? The Turing test...

Sept 18th

MOVIE DAY!!! Film: The Boy without a penis. <http://topdocumentaryfilms.com/dr-money-boy-with-no-penis/>

Read: Shepherd, Linda Jean. *Veiling the feminine face of science*. Chapters 1 and 2 HANDOUT for next class

Sept 20th

Discussion of *Veiling the feminine face of science*. Chapters 1 and 2

Personality and doing science today: The Myers-Briggs test. A TedX talk

Read: Chapters 3 and 4 in textbook pgs 47-68

Sept 25th

How do approach your fictitious autobiography. How to think like a historian. Blackboard:

How to DO history, Robert Freedman

Discussion of Chapters 3 and 4.

Read: Chapter 6 and chapter 11 for next class

Sept 27th

Discussion of Chapters 6 and 11.

Discussion of Chapter 6 and 11. Read: Chapter 8

October 2nd

Discussion of Chapter 8

Why are there so few women in STEM sciences: Social reasons.

<https://www.youtube.com/watch?v=-4F4IVlxtk>

Read: Chapter 9

October 4th

Discussion of Chapter 9

Read Chapter 10 for next class.

October 9th

Discussion of Chapters 10

<http://www.wbur.org/npr/156664337/stereotype-threat-why-women-quit-science-jobs>

Read Chapter 15

October 11th

Term Paper due.

Discuss Chapter 15

<https://www.youtube.com/watch?v=lrYx7HaUIMY>

readings TBA

October 16th

Discussion of assigned readings

October 18th

We start looking at the history of particular women who made contributions to science

Movie Day!! DNA: the secret of photo 51. Rosalind Franklin Readings about Barbara McClintock and others for next class.

October 23rd

Discussion about Rosalind Franklin and Barbara McClintock and others

Readings about gender bias and sexual harassment.

October 25th

Discussion of readings about gender bias and sexual harassment

How are boys raised in western culture

Documentary part 1: The mask you live in

October 30th

Documentary part 2: The mask you live in

Discussion of the documentary

Nov 1st: TBA (hopefully a guest speaker!).

I am away NOVEMBER 6th and 8th at the Society for Neuroscience conference in San Diego

Since we have quite a big class for a seminar class, the biographies and presentations will take up November 13th, 15th, 27th, 29th, and December 4th.

December 6th: Round Table discussion,

Based on what you learned: What should we do in the future to make it easier for women in science?

Academic Honesty: Any violation of the UVM Code of Academic Integrity (plagiarism, collusion, cheating or fabrication) in written work or on examinations will be reported to the Center for Student Ethics and Standards (CSES) at The University of Vermont. If you are unfamiliar with this Code, you should carefully review it and be completely familiar with it. (Please see: <http://www.uvm.edu/~uvmppg/ppg/student/acadintegrity.pdf>). It is

against the Academic Integrity Code for you to give and/or receive unauthorized assistance on graded assignments (collusion) or to use someone else's thoughts or words without citation (plagiarism). Any violations of the Code will result in disciplinary action.

GRADES:

A+ above 96.

A 93-96

A- 90-92

B+ 87-89

B 83-86

B- 80-82

C+ 77-79

C 73-76

C- 70-72

D+ 67-69

D 63-66

D- 60-62

F Below 60