WGSS 285: INTRODUCTION TO THE BIOLOGY OF DIFFERENCE
SPRING 2015
Tu/Th 4:00-5:15pm
Classroom: ILC N111

I. COURSE DESCRIPTION

Axes of human “difference”— sex, gender, race, class, sexuality, religion, nationality, etc.—have profound consequences. These differences shape group affiliation and identity and affect how society is and has been organized; perhaps more importantly, the meanings attached to these differences have impacted and continue to impact rights, social roles, opportunities, and individual life chances.

For centuries, the biological sciences have played crucial roles in identifying and defining differences between humans that are deemed socially and politically important. In this course, we will explore the creation and contestation of categories of human differences across the biological sciences. Using literature from biology, history, women’s studies, and science studies, we will examine how knowledge about differences has been and is created; what meanings have been attached to human differences and how these have changed over time; and what the consequences of understandings of difference have been and are today. In particular, we will focus on the “differences” of gender, race, and sexuality. The course aims to provide students with tools to analyze scientific studies, to understand how science has developed and changed over time, and to understand the relationship of nature and culture, science and society, biology and politics.

II. COURSE DESIGN

This course is as a team-based learning (TBL) course. Team-based learning aims to decenter the “sage on the stage”—i.e. the professor—and does so by orienting each class meeting around collaborative group work. We will assign you into groups in the first week, and these will be your groups for the rest of the semester.

Team-based learning has a number of advantages over traditional learning. First of all, it is practical, and teaches you skills you will need beyond the university. Many jobs today require teamwork as an essential component, and being able to prove your ability to successfully work as part of a team to a prospective employer is a real asset. This is a class you can reference on your resume!

Second, life is, after all, a team project, from households and families to workplaces and communities. If you have parents or siblings or children or co-workers or neighbors, you have or will have randomly assigned members on your team. It’s important to learn how to work in
communities and circumstances not of your own choosing!

Third, in traditional classrooms a lot of effort is spent trying to suppress web surfing and digital chattiness; in the TBL classroom, that’s what we’ll be building on.

Fourth, we are smarter in groups: we can build synergistically on what we collectively know to answer bigger questions.

There are, however, two major problems in team-based learning that we will all need to work against. One is politeness. A lot of people would rather be likeable than right in group work, and this makes the group collectively less “right.” The second is the free-loader problem, where those who contribute nothing can still benefit from the work of the broader group. This is typically what students are talking about when they say they don’t like group projects, but there are a lot of techniques we can use to push back against this problem. Thankfully, the structure of the course works to mitigate these two problems.

III. COURSE OBJECTIVES

This course has a U Gen Ed designation. As such, its primary objectives are to address fundamental questions, ideas, and methods of analysis in the humanities and social sciences, and to create awareness of the various dimensions of human identity. Additionally (and part of the reason why this course is structured around team-based learning), this course aims to prepare students for (in the words of Gen Ed’s learning objectives at http://www.umass.edu/gened/learningObjectives/indexObjectives.html):

- Their college experiences and subsequent professional training
- Their careers and productive lives
- Community engagement and informed citizenship
- A diverse and rapidly changing world
- A lifetime of learning

This course also has an SI designation. This means that the content includes one or more Social World disciplines and one or more disciplines of the Biological and Physical Sciences and Analytical Reasoning. The goals of SI courses include exploring differences and similarities in a “a central topic or issue” from various perspectives; the focus is therefore mainly on issues or topics rather than on academic disciplines. Consequently, this is an interdisciplinary course.

IV. COURSE READINGS

There are two required texts for this course:


They have been ordered through the Campus Bookstore, but are also available through other (online) book purveyors.
All other readings are available through e-reserves; you can access them using the password “difference15”. For instructions on how to use e-reserves, please see the instructions appended to this syllabus.

V. COURSE REQUIREMENTS

Each member of this classroom is responsible for knowing what the requirements of this course are, what the assignments are, and when assignments are due (and therefore handing them in on time). **No late assignments will be accepted.**

Reading assignments must be completed by the class period for which they were assigned. *Online quizzes will give you credit for having done so.* There will be 11 quizzes over the course of the semester; the only week you will **not** have a quiz to complete before class is Week 5, when we only meet once that week, on Thursday.

**Assignments and Grades**

**Weekly quizzes.** (20 points) Each of you will complete a quiz on Moodle before Tuesday’s class.

**Weekly group work.** (40 points) On Tuesdays, you will come to class having completed the individual quiz. First thing in Tuesday’s class, we will do a “team quiz showdown”, in which you and your group will compete for fun mystery prizes. This should take 10 minutes maximum. Thereafter, Julieta and I may or may not say a few words--no more than 10 minutes.

After that, you will begin the assignment you will work on that week. The assignments are listed in the syllabus below, and the specific assignment for your group will be given in class on Tuesday. You will then have the first 20 minutes of Thursday’s class to complete the assignment. For the remaining time, each group will present its assignment; each group will have 6 minutes **MAXIMUM** to present their assignment. Despite the in-class prep time, it is **expected that your group will work on the assignment outside of class time as well.**

Almost all group assignments take the form of a class presentation, which you can prepare using powerpoint or prezi (for example). You are encouraged to take full advantage of all the various audio visual and research materials available to you through UMass, the Five Colleges, and the World Wide Web. Google Docs and Google Slides provide a good way to collaborate on materials in and outside of the classroom. At the end of Thursday’s class, you will evaluate your performance for the week, as well as the performances of your peers. You will submit both the presentation your group prepared and your self and peer evaluations via moodle at the end of Thursday’s class. **Moodle will allow submissions on Thursday between 5:15pm and 7pm.**

You will receive a weekly grade for your group’s work. It will be based (1) 70% on the quality of the product or presentation as a whole, (3) 15% on your self-evaluation, and (4) 15% on your group’s evaluation of your contribution. As part of your self- and peer-assessments, you should also consider your/their participation in the team trivia challenge. Be sure to express your evaluations out of /15; to find out whether they translate to A, B, etc.. see rubric below.
If you are absent for any reason other than an exceptional circumstances (see below), particularly on a presentation day (Thursday), you will receive a 0, and your group members have every right to reflect your absence in their evaluations of you for that week.

**Midterm project** (20 points) Each team will produce one midterm project. It has 2 parts. 1) Create some kind of informational media aimed at high school students that communicates what biological components comprise a sex, and how differences of sex and sexuality are have been and are constructed by scientists. This can be a podcast, short video, website…. whatever you think would be most compelling to your target demographic. 2) Prepare a 5-6 page max “meta-paper” that explains what you were aiming to do in this assignment, why you chose the format you did, what kind of steps you took to prepare it, and what roles each team member played. As part of this meta-paper, include a one-page reflection on how you think scientists could study sex differently (and arguably better). You will have two weeks in class to complete it (but are expected to work on it outside of class time as well). It will follow the grading criteria of your other group work; that means you are expected to submit a self and peer evaluation. You will present what you have on **THURSDAY. 3/12 in class.** It is due on **SUNDAY. 3/15 ON MOODLE.** You will be graded 70% of final outcome, 15% on self evaluation, and 15% on peer evaluation.

**Final project** (20 points): Each team will produce one final project. It has 2 parts. 1) Create some kind of informational media aimed at high school students that communicates how scientists have constructed racial differences, why they have been constructed in these ways, how these have changed over time, what the implications of these developments have been, and what the advantages and disadvantages of continuing to study race scientifically are. This can be a podcast, short video, website; whatever you think most compellingly would reach your target demographic. 2) Prepare a 5-6 page max “meta-paper” that explains what you were aiming to do in this assignment, why you chose the format you did, what kind of steps you took to prepare it, and what roles each team member played. As part of this metapaper, include a one-page reflection on whether you think scientists should continue to study race and why. You will have two weeks (and one day) in class to complete it (but are expected to work on it outside of class time as well). You will present what you have completed in class on **TUESDAY. 4/28.** You will submit the projects by **7pm on TUESDAY. 4/28 ON MOODLE.** It will follow the grading criteria of your other group work; that means you are expected to submit a self and peer evaluation, with at least 3 rationale for the grade you assigned. You will be graded 70% of final outcome, 15% on self evaluation, and 15% on peer evaluation.

**Grading Scale**

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UMass’s Academic Honesty Policy
UMass Amherst has developed policies to deal with those instances when students engage in academic dishonesty. According to the University, academic dishonesty includes but is not limited to: cheating, fabrication, plagiarism, and facilitating dishonesty. Appropriate sanctions may be imposed on any student who has committed an act of academic dishonesty. For further details on UMass’ Policy on Academic Honesty, see: http://www.umass.edu/dean_students/codeofconduct/acadhonesty/#D

To mitigate the possibility of academic dishonesty, be sure in all your writing and oral presentations to acknowledge the ideas of others upon whom your thinking depends. This means you must cite both direct quotes and passages from texts that you summarize or paraphrase.

For guidance on how to properly cite sources according to the most commonly used formats, see Purdue University’s “Online Writing Lab (OWL)” website: https://owl.english.purdue.edu/owl/section/2/

VI. ACCOMMODATION POLICY
If you have learning or other disabilities, it is my goal and that of the Disability Services to ensure that you have reasonable accommodations that minimize the impact of that disability on your learning or your ability to demonstrate what you have learned in the context of assignments. It is your choice whether to disclose the nature of your disability to me; you can simply access services through Disability Services (http://www.umass.edu/disability/current.html) and ask me to work with that office to provide appropriate accommodations. However, you do need to let me know that you will need accommodation at or near the beginning of the semester, well in advance of any assignments.

If we agree on a modified timeline for the completion of assignments or alternative formats, you are still responsible for completing assignments in a timely way and attending class.

If you are a student athlete, please be in touch as soon as possible with your training and competition schedules in order to mitigate penalties for absences and develop fair work-arounds.

If you will have to miss class for religious reasons, please be in touch as soon as possible with the dates you will be away so that we can make sure you won’t be penalize you for absence(s).

VII. GROUND RULES
● This class is 75 minutes and we expect you to remain for the entire period. Latecomers and those who begin to pack 5 minutes before the class period disrupt the class for everyone.
● Although we will invite you to go online—a lot—in class meetings, we also expect appropriate “digital hygiene”: Facebook, Twitter, and non-emergency cell phone calls that are unrelated to the class disrupt your, and our collective work, and we will know if you are using them or not.
● Make up assignment will only be given to students who have a medical or other certified excuse or unavoidable conflict. Ignorance of this rule will not constitute a valid excuse.
● Finally and most importantly: let’s try to have fun!
VIII. WEEK-BY-WEEK SCHEDULE

**Week 1. Introductions**
Tuesday 1/20: Introduction to the course and to team-based learning. Fill out questionnaires for your group assignments (notified before class on Thursday). Presentation by UMass librarians about resources available to you for your work.

Thursday 1/22: Create a presentation introducing your group members to the class. Include a picture, information about interests, and skills related to the class: computer software, etc. (do they blog, for example? Use Prezi? Thought a lot about confidentiality? How to put your devices away and have a life?), and any thoughts/knowledge/experience with the course material? WGSS? Biology?

**Week 2. What is Biology? Why Does It Matter?**
Tues. 1/27

Before class on Tuesday, Read:


and take the online quiz before class on Tuesday.

In class on Tuesday:
- Team Quiz Showdown!!

In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):

1. Create a glossary of all the “bio” fields you can discover AND their areas/topics of research
2. Prepare a brief history of biology
3. Biological science frequently invokes categories and classifications to make sense of the world. Research biology’s taxonomical schema: What are they? Where do they come from? Why do they exist? In what ways are they beneficial? What are their shortcomings?
4. Find responses to Lewontin’s texts, summarize their arguments, and give your thoughts on their critiques: are they legitimate? Absurd? Defensive? Ad hoc?
5. Find responses to Gould’s text and summarize their arguments, and give your thoughts on their critiques: are they legitimate? Absurd? Defensive? Ad hoc?

Assignment challenge: You are not allowed to use Wikipedia!!

Before leaving class on Thursday 1/29
1. Turn in your presentations online.
2. Turn in self and group evaluation for your presentations
Week 3. Adjudicating “Good” Science and “Bad” Science  
Tues. 2/3

Before class on Tuesday, Read:

- Emily Martin, “The Egg and the Sperm: How Science has constructed a romance based on stereotypical male-female roles,” *Signs* 16, no. 3 (Spring 1991), 485-501

and take the online quiz before class on Tuesday as well.

In class on Tuesday:

- Team Quiz Showdown!!!

In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):

1. Find 3 studies on biological differences purporting to stem from race or sex. Using the criteria provided by the readings, assess whether these studies represent “good” or “bad” science. If good, why are they good? If bad, why are they bad?
2. Create a presentation aimed at helping the public distinguish between good and bad science. You may be inspired by Pigliucci’s chapter, but may NOT simply cut and paste his summaries and arguments! Indeed, you will be expected to draw on all of this week’s readings, and beyond. Use an example (that is not climate change!) to illustrate your guidelines.
3. How can you mitigate the influence of bias in the construction of scientific studies? Prepare a presentation that clarifies the role of bias and offers guidelines you think could help mitigate the role of biases from scientific work.

Before leaving class on Thursday 2/5
1. Turn your presentation online.
2. Turn in self and group evaluation for your presentations

Week 4. Sex, Gender, and Sexuality: How do we create a sex? (And why are there only two?)  
Tues. 2/10

Before class on Tuesday, Read:
• Anne Fausto-Sterling, “Should there be only two sexes?” *Sexing the Body* (New York: Basic Books, 2000), 78-114

and take the online quiz before class on Tuesday as well.

**In class on Tuesday:**
• Team Quiz Showdown!!!

**In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):**

1. The biology and medicine of sex and intersex: How does sex develop “normally” in a fetus? What are some developmental events that can lead to intersex in a newborn? How is this typically treated? What are the debates about this?
2. Social institutions and gender non/conformity: How do social institutions (marketing, toys, stores, the news media) foster gender conformity? How do they address gender nonconformity?
3. History: Research and tell the story of sex difference researcher John Money. You will be expected to use at least one peer-reviewed, scholarly article from a library database.

**Before leaving class on Thursday 2/12**
1. Turn your presentation online.
2. Turn in self and group evaluations

**Week 5. Sex, Gender, Sexuality: Accounting for the origins of “sexual difference” in Western science**

*NO CLASS TUESDAY--MONDAY SCHEDULE*

Thurs. 2/19
**Before class on Thursday, Read:**

**In class on Thursday each group will prepare**: a group reflection paper on the readings that is no more than 4-5 pages double spaced max.

**Before leaving class on Thursday 2/19**
1. Turn your paper online.
2. Turn in self and group evaluations

**Week 6. Sex and Gender: Contemporary knowledge creation about “sex”: The Case of Brain Organization Theory**

Tues. 2/24
Before class on Tuesday, Read:


and take the online quiz before class on Tuesday as well.

In class on Tuesday:

- Team Quiz Showdown!!!

In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):

1. Explore some of the research on the normal development of the human brain at [http://www.changingbrains.org/](http://www.changingbrains.org/). How are the fundamental assumptions shaping this work different from those discussed in Jordan-Young? Using images and evidence, present something to the class making an argument about the difference between the “born that way” paradigm explored in Jordan-Young’s critique, and the neuroplasticity paradigm in changing brains.

2. Take a pro or con position on the following argument: the science of sex differences in brains is fundamentally flawed (make sure you take into account the counter arguments).

3. In 2005, then-President of Harvard Larry Summers ignited a media firestorm for his discussion of supposed sex differences in men’s and women’s ability to do science at an elite level. What did he say, and why did some people disagree with him?

Before leaving class on Thursday 2/26
1. Turn your presentation online.
2. Turn in self and group evaluations

**Weeks 7 & 8: Work on Midterm Project**

**Week 7. Sex, Gender, Sexuality: How does science account for sexuality?**

Tues. 3/3
Before class on Tuesday, Read:

- Elisabeth Lloyd, “Pre-Theoretical Assumptions in Evolutionary Explanations of Female Sexuality,” in Evelyn Fox Keller and Helen E. Longino, eds., *Feminism and Science* (Oxford University Press, 1996), 91-120

and take the online quiz before class on Tuesday as well.

**Week 8. Sex, Gender, and Sexuality: How Could Scientists Do Things Differently?**

Tues. 3/10

**Before class on Tuesday, Read:**

• Rebecca Jordan Young, “Trading Essence for Potential,” 269-292

and take the online quiz before class on Tuesday as well.

Thurs. 3/12 Present what you have ready on your Midterm Projects towards the end of class

****SUNDAY. 3/15 MIDTERM PROJECTS DUE ON MOODLE****

**Week 9. Race: The History of Racial Classifications in the “Western World”**

Before class on Tuesday, Read:

Tues. 3/24

• Audrey Smedley and Brian D. Smedley, “Race as Biology is Fiction, Racism as a Social Problem is Real,” *American Psychologist* 60, no. 1 (January 2005), 16-26
• George W. Stocking, “The Turn of the Century Concept of Race,” *Modernism/Modernity* 1, no. 1 (1994), 4-16
• Check out: http://understandingrace.org/home.html

and take the online quiz before class on Tuesday as well.

**In class on Tuesday:**

• Team Quiz Showdown!!!

**In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):**
1. One of the major arguments of these readings is that racial categories are created by humans, and do not proceed directly from nature. They make these arguments primarily through historical evidence. Research the various racial categories used to classify populations around the world today and present your findings to class.

2. Over time, Western science has developed varying theories of race, and understood race to be based in different aspects of human biology. The emergence of new theories of race often emerged in moments of historical transition. Research these theories, their rationale, and their immediate historical context and present to the class. What do you make of the fact that explanations and theories of race have shifted repeatedly over time?

3. Proceeding from this week’s readings, how would you account for the relationship between racial categorization and relations of power? Develop an argument/analysis and present to the class.

Before leaving class on Thursday 3/26
1. Turn your presentation online.
2. Turn in self and group evaluations

Week 10. Race and the (Specious) Assignment of Human Value: The Case of Eugenics
Tues. 3/31; Thurs. 4/2

Before class on Tuesday, Read:


and take the online quiz before class on Tuesday as well.

In class on Tuesday:
- Team Quiz Showdown!!!

In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):

1. As Wendy Kline notes, eugenics was hugely popular in the US for much of the early 20th century. It was not only popular in the US, but throughout much of Europe and in many other parts of the world. What were some of the tangible consequences of eugenics in terms of policy and social movements in the early 20th century? Research some of the effects of eugenics in countries *other than Nazi Germany* and present your findings to the class.
2. Is eugenics dead? Do some of the beliefs and values that undergird eugenics persist today? Explore all sides of this question and present your research to the class.

3. What scientific rationale were used to support eugenics, and how did eugenics infiltrate other sciences? Research these connections between legitimate and pseudosciences and present them to the class.

4. Eugenics was popular to a wide range of social groups throughout the later nineteenth and early twentieth centuries--some of which may have been unlikely. Research the breadth of eugenics appeal in the later nineteenth and early twentieth century, and analyze why eugenics may have appealed to so many, at times unlikely, groups.

5. How have nation-states, the international community, and scientific communities attempted to mitigate against the abuses inflicted by eugenics? To what degree are these adequate? To what degree can they provide justice for previous abuses inflicted?

Before leaving class on Thursday 4/2
1. Turn your presentation online.
2. Turn in self and group evaluations

Week 11. Race and Genetics
Tues. 4/7; Thurs. 4/9
Before class on Tuesday, Read:


and take the online quiz before class on Tuesday as well.

In class on Tuesday:
- Team Quiz Showdown!!!

In class on Tuesday each group will begin preparing one of the following presentations (which you will present on Thursday):

Prepare a presentation making the argument that…

1. Rosenberg’s study shows us that race is a statistical artifact imposed after the fact on DNA data (make sure you explain what population biology studies)
2. Rosenberg’s study shows that race represents real and significant human differences, although they are perhaps best characterized as geographical ancestry rather than “race.” (make sure you explain what population biology studies)
3. Racial disparities in health are best explained as an artifact of racism.
4. Racial differences in the biology of populations explains at least part of the health disparities in the US between whites and non-whites.
5. Find an article in pubmed or a similar source about health disparities between races or sexes. How do they weigh the social versus genetic causes? How do they think about the interaction between the social and the body?

Before leaving class on Thursday 4/9
1. Turn your presentation online.
2. Turn in self and group evaluations

***Week 12-13: Work on Final Projects***

**Week 12. Race and Health**
Tues. 4/14; Thurs. 4/16
Before class on Tuesday, Read:
- Dorothy Roberts, “Medical Stereotyping,” “Embodying Race,” Fatal Intervention, 81-103, 123-146

and take the online quiz before class on Tuesday as well.

**Week 13. Summary: Reflecting on Human Variation, Variability, and Potential**
Tues. 4/21; Thurs. 4/23
Before class on Tuesday, Read:
- Tufuku Zuberi, Thicker Than Blood: How Racial Statistics Lie (Minneapolis: University of Minnesota Press, 2001), 105-144

and take the online quiz before class on Tuesday as well.

**Week 14. PRESENT GROUP PROJECTS and SUBMIT FINAL PROJECTS ON MOODLE BY 7PM ON TUESDAY 4/28**

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