

**Biology and Diversity: Use and misuse of science to justify bias, inequity,
exclusion and prejudice**
BILD 60
Spring 2015

Course Overview

In this course, we will examine diversity, equity, and inclusion in the context of biology from a variety of perspectives. We will start with a biological framework and then examine how underlying biological differences can and have been used to support bias and prejudice against particular groups such as women, African Americans, and Latinos. Beginning with the history of human heredity and the US Eugenics movement, “science” has been used to discriminate against specific human groups. Is eugenics a relic of the past or is our ability to manipulate genomes simply a modern-day version of this movement? This question will lead us into the topic of genomes, genome sequencing, and ultimately questions of how widely available genetic testing in a post-genomic age can affect individuals and/or different racial or ethnic groups in the US. The topic of epigenetics, beginning with the biology of chromosomal DNA modification, lays the foundation for examining how the environment can affect DNA modification patterns and how this has long-term consequences for different ethnic and cultural groups. A study of brain structure and sex hormones will set the stage for examining racial stereotypes as well as differences in sexual identity. We will also consider how genetics as well as environment and cultural issues affect public health and disease in the US. Beginning with the biology underlying diabetes, we will consider how and why the incidence of diabetes is much higher in Hispanic/Latino and black populations as compared with non-Hispanic whites.

For each of the topics covered in this class, we begin with the biology. We then consider how biological concepts are used to understand differences between human groups but also how they are misused, leading to the justification of prejudice and bias. Ethics, as they relate to diversity, equity, and inclusion, will be an important focal point of this class.

Course Goals

- To better understand the biological basis of differences between human groups
- To understand biological arguments that have been used to explain differences between human groups
- To learn how biological differences and arguments have been misused to justify prejudice and discrimination.
- To learn how environmental influences play an important role in human biology at molecular, cellular, and organismal levels and how these influences can differ depending on race, ethnicity, and gender.
- To better understand one’s racial/ethnic/gender/cultural identity in the wider context of other identities discussed in the course

The course is designed to be highly interactive. Lectures will include questions to the students and plenty of time for discussion. Students will also work cooperatively in groups on in-class exercises as well as on a final oral presentation.

Evaluation/Grading

The course will be graded on a Pass/No Pass basis however to pass the course you must hand in all assignments, pass 2 quizzes, give a final oral presentation, submit a term paper, and regularly attend and participate in the in-class discussions. Your work must be of passing quality.

Weekly News Assignment: (15% of grade) Every week each student must find a news article that is related to DEI and science/health/medicine. Students must identify the source of the news and write a short paragraph (max ½ page) briefly describing the news item and how it is related to any aspect of diversity, equity, and inclusion. These will be turned in electronically through TED but you must also be prepared to give a 3-minute oral presentation about your news item in class. Students will be randomly selected to present.

Oral presentation (10% of grade) Every group will give a 15 minute oral presentation to the entire class on an approved DEI topic of their choice. All students in the group must participate in the oral presentation.

8-10 page Paper (30% of grade). Each student will write an 8 - 10 page paper (as an individual) on the topic that you presented orally to the class, with a focus on your portion of the oral presentation.

Quizzes (15% each, 30% total) There will be 3 in-class quizzes though only the highest 2 scores will count. They are each worth 15% of your grade. Quizzes will be on topics discussed in class as well as on readings. There is no final exam.

Participation (10% of grade) This grade will be based on your oral presentations in class (as spokesperson for your group) as well as on your participation in general class discussions.

Reflection (5%) At the end of the class you will be asked to write a 1 – 2 page essay reflecting on your experience in the class, with particular emphasis on your identity in relation to other identities discussed in the class.

REVISED SCHEDULE

March 31	<p>Stephanie Mel – Introduction. Discussion of meaning of Diversity, Equity, and Inclusion in Biology. In-class exercises.</p> <p>Read for next class: Norrgard, K. (2008) “Human Testing, the Eugenics Movement, and IRBs. <i>Nature Education</i> 1(1) http://www.nature.com/scitable/topicpage/human-testing-the-eugenics-movement-and-irbs-724</p>
April 2	<p>Stephanie Mel –Historical overview of the science of human heredity in the US – The US Eugenics Movement</p>

April 7	Stephanie Mel – Finish Eugenics Discussion Epigenetics – Nature vs. Nurture?
April 9	Laura Case – Categories of Sex and Gender: Perspectives from Neuroscience
April 14	Stephanie Mel – Discussion of Epigenetics and DEI issues Expectations for in-class presentations <i>Start</i> Race and Medicine in the post-genomic age, Genetic Testing
April 16	Stephanie Mel – <i>Continue</i> Race and Medicine in the post-genomic age, Genetic Testing, QUIZ 1 (30 minutes)
April 21	Renee Killins -Hela cells/Discussion
April 23	Renee Killins - Discussion of Issues related to Hela Cells
April 28	Lakshmi Chilukuri - Diabetesity
April 30	<i>4 Student Group Presentations</i>
May 5	Anita Raj – Gender and Public Health
May 7	Discussion of Public Health/Equity issues QUIZ 2
May 12	Eduardo Macagno Discussion of Nature vs Nurture in intelligence and performance
May 14	Eduardo Macagno Discussion of Nature vs Nurture in intelligence and performance
May 19	Michael Kalichman - ethics workshop
May 21	Tom Albright Discussion of perception and witness bias
May 26	<i>4 Student Group Presentations</i>
May 28	<i>4 Student Group Presentations</i>
June 2	<i>4 Student Group Presentations</i>
June 4	QUIZ 3 Course wrap up/Fill out Evaluations