

Anth 232: Biocultural Perspectives on Human Variation and Race

Fall 2016

Professor: Zachary Cofran

Meetings: Blodgett Hall 101, T-Th 10:30-11:45

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Office: Blodgett Hall 323

Office hours: Tues & Thurs 1-2 pm, or by appointment

This course examines the nature of human variation, in the contexts of genetics, anatomy, history, and society. The course begins by surveying biological variation, both adaptive and selectively neutral, in humans. We then focus on what the term 'race' means biologically, and why this concept does not describe human variation. Moving from biology and genetics, we examine psychological and historical origins of racist thinking in the United States. This historical overview segues into an analysis how racial categories are used in biomedical research today. Through the framework of the developmental origins of health and disease, we review the biological mechanisms whereby social inequality results in health disparity. Over the course of the semester, students will learn about why humans vary, what this variation does and does not tell us about people, and the ways in which the social reality of race becomes manifest in biology.

Course objectives

By the end of the semester, *hard-working* students will:

- understand how and why humans vary biologically
- appreciate the roles of genes and environment in contributing to human variation
- appreciate the interplay between biology and society
- learn how to identify and comprehend quality scientific articles
- learn to research and present scientific information graphically

Textbooks & Readings

There is no assigned textbook. Instead, weekly readings are posted to Moodle. All readings should be read for the week in which they are posted/assigned, before coming to class that week.

Grading

Participation = 20%

You will get the most out of the class if you actively participate, and there will be many instances when you will be expected to contribute to a class discussion and/or participate in small-group exercises. The assessment of Participation is as follows: missing four (4) or more class sessions = 0%; regularly present but inactive = 10%; regularly present and sporadically active = 15%; present and highly active = 20%.

Note that being 'highly active' does not mean dominating conversations, but rather means contributing to class by way of asking questions and synthesizing information and concepts from diverse readings and topics.

Infographic project = 40%

The major term project is an infographic (example: <http://bit.ly/2bMIOOJ>), that presents empirical data illustrating one way in which humans vary. This project

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will be done with one partner, with whom you will work closely on the following:

- Brainstorming meeting (5%)
Early in the semester, you and your partner will meet with the professor to decide upon a topic for your project.
- Article summaries (4 x 5% = 20%)
For each of four specific aspects of your project topic, you will write brief summaries of either peer-reviewed journal articles or official government data. You and your partner must work together to ensure that 1) you are not writing about the same article, and 2) that your separate articles logically relate to each other. Assignment prompts with more specific instructions will be posted to Moodle.
- Infographic presentation (15%)
You and your partner will synthesize and present your summaries in the form of an infographic. Presentations will take place on 29 November and 01 December.

Exam 1 = 20%

In class Thursday 06 October

Exam 2 = 20%

Finals week

Except for a few points on the exams, there will be no opportunities for extra credit.

Attendance

If you miss class you cannot participate, which in turn can affect your grade. However, you are allowed up to three excused, penalty-free, no-questions-asked absences throughout the semester. The exception to this is that you must be in attendance for the exams and infographic presentations; failure to attend on these important dates will result in your failure of those assignments. Exceptions to this rule can only be made with appropriate documentation from Health Services or the Dean of Students.

Assignment submission and late work policy

I expect you to submit your work in a timely manner, as directed on assignment prompts. Late work will be reduced by 10% for each day that it is late. The only time I will accept late work without penalty is if it is accompanied by documentation from Health Services or the Dean of Students.

Disabilities

If you require special accommodation because of a disability or condition, you must make sure this is documented with the Office of Accessibility and Educational Opportunity, and notify me before the accommodation is required (i.e. not on the day of an exam).

Academic Integrity

All work you submit must be your own. You may discuss assignments with colleagues, but you may not turn in the same work. When you use references, other people's ideas, and especially other people's direct words, you absolutely must cite

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them. For more information, see page 133 of the Vassar College Regulations (<http://bit.ly/2bMuogv>) and “Going to the Source” (<http://bit.ly/2bMuNQ8>). Plagiarism and other academic misconduct will result in a grade of 0 on the assignment and referral to the College’s Academic Panel.

Technology

Turn your phones off (or at least put on silent) when you come to class. I can and will confiscate phones if I find them distracting. Phones may only be used in class to access course materials (e.g., readings). You may take notes on a computer if you wish, however, if you become distracting to myself or other students I will confiscate the computer for the duration of class as well. I reserve the right to ban all technology from the classroom at any point in the semester.

Schedule of topics & assignments*

* Schedule and content subject to change at professor’s discretion.

Due dates in red

Week 1 (30 August–01 September): Race and ethnicity

Readings

Mielke et al., 2006. Chapter 1: Classifying Human Biological Diversity. In *Human Biological Diversity*. New York: Oxford University Press.

Yudell et al., 2016. Taking race out of human genetics. *Science* 351: 564-565.

Week 2 (06–08 September): Evolution

Readings

Futuyma, 2010. Evolutionary Theory. In *Human Evolutionary Biology*. Muehlenbein, ed., pp. 3-16.

Stinson et al., 2012. Human biology: An evolutionary and biocultural perspective. In, *Human Biology: An Evolutionary and Biocultural Perspective*, pp. 3-22.

Week 3 (13 September): Skin

ESHE conference – no class Thursday 18 September

Thursday activity – TBA

Readings

Elias and Williams, 2013. Re-appraisal of current theories for the development and loss of epidermal pigmentation in hominins and modern humans. *Journal of Human Evolution* 64: 687-692.

Jablonski and Chaplin, 2013. Epidermal pigmentation in the human lineage is an adaptation to ultraviolet radiation. *Journal of Human Evolution* 65: 671-675.

Week 4 (20–22 September): Body size and shape

Infographic brainstorming meeting (week of 19 September)

Readings

Leonard and Katzmarzyk, 2010. Body Size and Shape: Climatic and Nutritional Influences on Human Body Morphology. In *Human Evolutionary Biology*. Muehlenbein, ed. Pages 157-169.

Brutsaert, 2010. Human Adaptation to High Altitude. In *Human Evolutionary Biology*. Muehlenbein, ed. Pages 170-191.

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Week 5 (27–29 September): Food

Summary 1: Variation, due Friday 30 September at midnight

Readings

Mielke et al., 2006. Lactase Restriction and Persistence. In *Human Biological Variation*, pages 177-181.

Tishkoff et al., 2007. Convergent adaptation of human lactase persistence in Africa and Europe. *Nature Genetics* 39: 31.

Schnorr et al., 2014. Gut microbiome of the Hadza hunter-gatherers. *Nature Communications* 5:3654

Week 6 (04–06 October): Phenotype Review & Exam

Exam 1 in class Thursday 06 October

Week 7 (11–13 October): Genetic Variation & Race

Summary 2: Biology, due Friday 14 October at midnight

Readings

Li et al., 2008. Worldwide human relationships inferred from genome-wide patterns of variation. *Science* 319: 1100-1104.

Fujimura et al., 2014. Clines without classes: How to make sense of human variation. *Sociological Theory* 32: 208-227.

Barbujani et al., 2013. Nine things to remember about human genome diversity. *Tissue Antigens* 82: 155-164.

Optional supplemental reading: Shiao et al., 2012. Genomic challenge to the social construction of race. *Sociological Theory* 30: 67-88. [Fujimura et al. is a response to this paper]

*** Fall Break 14–23 October ***

Week 8 (25–27 October): Racial thinking

Readings

Hirschfeld, 1998. Natural assumptions: Race, essence, and taxonomies of human kinds. *Social Research* 65: 331-349.

Blakey, 1999. Scientific racism and the biological concept of race. *Literature and Psychology* 45: 29-43.

Week 9 (01–03 November): Eugenics & Intelligence

Readings

Micklos and Carlson, 2000. Engineering American society: The lesson of eugenics. *Nature Reviews Genetics* 1: 153-158.

Sternberg et al., 2005. Intelligence, race, and genetics. *American Psychologist* 60: 46-69.

Check-Haydn, 2013. Ethics: Taboo genetics. *Nature* 502: 26-28.

Week 10 (08–10 November): Biology & Society 1 – DNA, Ancestry & Identity

Summary 3: Environment, due Friday 11 November at midnight

Readings

Royal et al., 2010. Inferring genetic ancestry: Opportunities, challenges, and implications. *American Journal of Human Genetics* 86: 661-673

TallBear, 2013. Genomic articulations of indigeneity. *Social Studies of Science* 43: 509-533.

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Metta, 2015. Race in the US: What if your identity was a lie? *Al Jazeera*
(<http://bit.ly/2bSNbp2>)

Week 11 (15–17 November): Biology & Society 2 – Health

Summary 4: Society, due Friday 18 November at midnight

Readings

Kuzawa and Sweet, 2009. Epigenetics and the embodiment of race: Developmental origins of US racial disparities in cardiovascular health. *American Journal of Human Biology* 21: 2.

Gravlee, 2013. Race, biology and culture: Rethinking the connections. In *Anthropology of Race*, Hartigan, ed., p. 21.

Thayer and Non, 2015. Anthropology meets epigenetics: Current and future directions. *American Anthropologist* 117: 722.

Cooper, 2013. Race in biological and biomedical research. *Cold Spring Harbor Perspectives in Medicine*. doi: 10.1101/cshperspect.a008573.

Week 12 (22 November): Biology & Society 3 – Race & Reification

Thanksgiving Break – No class Thursday 24 November

Readings

Duster, 2005. Race and reification in Science. *Science* 307: 1050.

Phelan et al., 2013. The Genomic Revolution and beliefs about essential racial differences: A Backdoor to Eugenics? *American Sociological Review* 78: 167.

Week 13 (29 November–01 December): Infographic presentations

Order/Schedule TBA

Week 14 (06 December): The Future of Race

Readings – TBA

Exam 2 – Finals week