

# Anth 232

## Race & Human Variation

### Spring 2019

Meetings: Blodgett Hall 101, Monday & Wednesday 12:00–1:15 pm

Professor: Zachary Cofran

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Office: Blodgett Hall 323

Office hours: Thursday 10 am–12 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

- 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 day in which they are posted/assigned, before coming to class.

### Grading

#### Participation = 10%

Each week there will be discussions and activities to which you are expected to contribute. Frequent active (but not overbearing) participation earns the full 10%, and sporadic contribution earns 5%. You completely forfeit your participation score if you have at least four unexcused absences (see “Attendance” below), or if you rarely or never participate in class activities.

#### Glossary = 10%

For every day of course readings, you will compile and provide definitions for at least five terms or concepts. Definitions must be written in your own words, neither copying+pasting nor directly quoting the source (see also “Academic Integrity,” below). Vocabulary lists must be uploaded to Moodle before coming to class each day.

**Midterm exam = 10%**

In class Wednesday 06 March

**Final paper in lieu of exam = 15%**

Paper prompt given in class 06 May, due 15 May

**Term project: Unessay = 55%**

The major term project is an “unessay,” in which you present detailed information about a trait or phenotype, its variation, biological underpinnings, environmental interactions, and social implications/interpretations. In consultation with the professor, you select not only the topic but also the *medium* of presentation. Short writing assignments are submitted piecemeal over the course of the semester to help develop the final product.

Graded components of the project are as follows:

- Brainstorming meetings (2x – ungraded but vital)  
*Failure to complete either of these meetings results in automatic maximum grade of 50% on the entire project!*  
Week 3 – topic approval, meet during office hours or arranged appointment  
01 April – final product approval, meet in office during regular class time
- Article summaries (4 x 7.5% = 30%)  
For each of four specific aspects of your project topic, you will write brief summaries of peer-reviewed journal articles or chapters from scholarly books. Assignment prompts with more specific instructions will be posted to Moodle.
- In-class presentation (5%)  
Half the class will briefly present their projects each day of Week 13
- Final product and written Statement (20%)  
To be submitted along with class presentation in Week 13

**Attendance**

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 midterm exam and Unessay 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**

Assignments must be completed and submitted on time – however, you are allowed one amnesty day, for you to use (or not use) at your discretion, for the article summaries or final paper only. If you think you will need a little more time to complete a given assignment, let me know before it is due, and you can submit it a day later free of penalty. *This does not apply to the glossaries, the midterm exam, or Unessay presentation final products!*

Barring amnesty, late work will be reduced by 10% for each day that it is late. The only other time I will accept late work without penalty is if it is accompanied by documentation from Health Services or the Dean of Students.

## Disabilities

Academic accommodations are available for students registered with the Office for Accessibility and Educational Opportunity (AEO). Students in need of disability (ADA/504) accommodations should schedule an appointment with me early in the semester to discuss any accommodations for this course that have been approved by the Office for Accessibility and Educational Opportunity, as indicated in your AEO accommodation letter.

## 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 them. For more information, see pages 82–83 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.

## Title IX Responsibilities

Vassar College is committed to providing a safe learning environment for all students that is free of all forms of discrimination and sexual harassment, including sexual assault, relationship abuse, and stalking. If you (or someone you know) has experienced or experiences any of these incidents, know that you are not alone. Vassar College has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more.

Please be aware all Vassar faculty members are "responsible employees," which means that if you tell me about a situation involving sexual harassment, sexual assault, relationship abuse, or stalking, I **must** share that information with the Title IX Coordinator. Although I have to make that notification, the Title IX office will only provide outreach by email. You will control how your case will be handled — you don't have to read or respond to the email, and it is completely up to you whether to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need.

If you wish to speak to someone privately, you can contact any of the following on-campus resources:

- Counseling Service ([counselingservice.vassar.edu](http://counselingservice.vassar.edu), 845-437-5700)
- Health Service ([healthservice.vassar.edu](http://healthservice.vassar.edu), 845-437-5800)
- Nicole Wong, SAVP (Sexual Assault and Violence Prevention) director

- ([savp.vassar.edu](http://savp.vassar.edu), 845-437-7863)
- SART (Sexual Assault Response Team) advocate, available 24/7 by calling the CRC at [845-437-7333](tel:845-437-7333) and asking for SART

The SAVP website ([savp.vassar.edu](http://savp.vassar.edu)) and the Title IX section of the EOAA website ([eoaa.vassar.edu/title-ix/](http://eoaa.vassar.edu/title-ix/)) have more information, as well as links to both on- and off-campus resources.

## **Territory Acknowledgement**

The Vassar campus exists on lands that were once home to the [Delaware](#) Nation, the Delaware [Lenape](#) Tribe, and the [Stockbridge-Munsee](#) Band of Mohican Indians. Although many sources reference the Wappingers as the indigenous peoples of our campus, they were a confederacy of Native peoples who organized at one time in response to Euro-American incursions into the area.

# Schedule of topics, readings & assignments\*

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

## **Week 1 (23 January): Race and DNA Today**

### Wednesday: Introductions

Gupta 2018. 'Our vote matters very little': Kim TallBear on Elizabeth Warren's attempt to claim Native American Heritage. *Jezebel* 10/16/2018.

## **Week 2 (28–30 January): Shifting Perspectives**

### Monday: Early Physical Anthropology

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

Caspari 2003. From Types to Populations: A century of Race, Physical Anthropology, and the American Anthropological Association. *American Anthropologist* 105:65–76.

### Wednesday: Evolutionary Theory

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

*Background reading from Anth 120: Futuyma, D. (2013). Natural selection and adaptation. In J. Losos et al. (Eds.), The Princeton Guide to Evolution (pp. 189–191). Princeton: Princeton University Press.*

## **Week 3 (04–06 February): Genomes**

**Term project brain storming meetings – office hours or by appointment**

### Monday: Patterns

Nielsen et al. 2017. Tracing the peopling of the world through genomics. *Nature* 541:302–310.

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

Fan et al., 2016. Going global by adapting local: A review of recent human adaptation. *Science* 354:54–59.

*Background reading from Anth 120: Barbujani et al., 2013. Nine things to remember about human genome diversity. Tissue Antigens 82: 155-164.*

### Wednesday: Interpretations and Issues

Bolnick, 2008. Individual ancestry inference and the reification of race as a biological phenomenon. In Koenig et al., eds, *Revisiting Race in a Genomic Age*, pp. 70–85.

Lewis-Krause, 2019. Is ancient DNA research revealing new truths—or falling into old traps? *New York Times Magazine*, 17 January 2019. <https://nyti.ms/2RCG6Pm>

Reich, 2019. Letter in response to Lewis-Krause.

<https://reich.hms.harvard.edu/letter-response-jan-17-article-new-york-times>

*Supplemental: Coop, 2018. Polygenic scores and tea drinking. gcbias: Coop Lab Blog, 14 March 2018 <http://bit.ly/2RFqCZS>*

## **Week 4 (11–13 February): Skin**

**Article Summary 1 due Friday 15 February**

### Monday: Genotypes & Phenotypes

Quillen et al., in press. Shades of complexity: New perspectives on the evolution and genetic architecture of human skin. *American Journal of Physical Anthropology*.  
Background reading from Anth 120: Jablonski, N. and Chaplin, G. (2017). The colours of humanity: The evolution of pigmentation in the human lineage. *Philosophical Transactions of the Royal Society B* 370: 20160349.

Wednesday: Competing Hypotheses

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 5 (18–20 February): Fluids**

Monday: Blood

Kwiatkowski, 2005. How malaria has affected the human genome and what human genetics can teach us about malaria. *American Journal of Human Genetics* 77:171–192.

Larsen, 2019. Natural selection in humans: abnormal hemoglobins and resistance to malaria. In *Essentials of Biological Anthropology*, pp. 86–92.

Wednesday: Milk

Wiley, 2011. Chapters 1–2 in *Re-imagining Milk*, pp. 1–36.

**Week 6 (25–27 February): Body (Plasticity)**

Article Summary 2 due Friday 01 March

Monday: High Altitude

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

Background reading from Anth 120: Leonard and Katzmarzyk, 2010. Body size and Shape. In Muehlenbein (Ed.) *Human Evolutionary Biology* pp. 157–169.

Wednesday: Skulls

Gravlee et al., 2003. Heredity, environment, and cranial form: A reanalysis of Boas's immigrant data. *American Anthropologist* 105:125–138.

**Week 7 (04–06 March): Recap & Exam**

Monday: Summary & Review

Wednesday: MIDTERM EXAM in class

\*\*\* Spring Break 09–24 March \*\*\*

**Week 8 (25–27 March): Eugenics**

Article Summary 3 due Monday 25 March

Monday: Some history

Zimmer, 2018. Chapter 3: This race should end with them. In *She Has Her Mother's Laugh: The Powers, Perversions, and Potential of Heredity*, pp. 67–106.

Wednesday: Intelligence

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

Roberts, 2015. Can research on the genetics of intelligence be “socially neutral”? *Hastings Center Report* 45.S1: S50–S53.

### **Week 9 (01–03 April): Racial thinking**

Monday: Project prep meetings

Individual meetings in my office, during regular class time or by appointment

Wednesday: Psychology

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

### **Week 10 (08–10 April): Health & Medicine 1 (Reification)**

Article Summary 4 due Friday 12 April

Monday: Biomedical Research

Albain et al. 2009. Racial disparities in cancer survival among randomized clinical trials patients of the Southwest Oncology Group. *Journal of the National Cancer Institute* 101: 984–992.

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

Roberts, 2015. The problem with race-based medicine. TED Talk.

<http://bit.ly/2RxBpo> {in class}

Background reading from *Anth 120: Gravlee, 2013. Race, biology and culture: Rethinking the connections. In Anthropology of Race, Hartigan, ed., p. 21.*

Wednesday: Reification

Phelan et al., 2013. The Genomic Revolution and beliefs about essential racial difference: A Backdoor to Eugenics? *American Sociological Review* 78: 157–191.

### **Week 11 (15–17 April): Health & Medicine 2 (DOHAD, epigenetics)**

Monday: Structural violence and health

Du Bois, 1906. The health and physique of the Negro American. [excerpt from *American Journal of Public Health* 93: 232–276 (2003)]

Khullar, 2017. How prejudice can harm your health. *New York Times* 08 June 2017. < <https://nyti.ms/2RWenZh> >

Reiss, 2017. African Americans don't sleep as well as whites, an inequality stretching back to slavery. *LA Times*, 23 April 2017. < <https://www.latimes.com/opinion/op-ed/la-oe-reiss-race-sleep-gap-20170423-story.html> >

Cottom, 2019. Dying to be competent. In *Thick: And Other Essays*. [excerpted from *Time Magazine*] < <http://bit.ly/2RDRv1q> >

Wednesday: Epigenetics

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.

Thayer and Non, 2015. Anthropology meets epigenetics: Current and future directions. *American Anthropologist* 117: 722–735.

## **Week 12 (22–24 April): Commercial Ancestry Testing**

### Monday: Science and limitations

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

Pickrell, 2016. What is ancestry? *Medium*, 16 February 2016. < <http://bit.ly/2S0bPc9> >

Brown, 2018. How DNA testing botched my family's heritage, and probably yours, too. *Gizmodo* 16 January 2018. < <http://bit.ly/2RYko7G> >

### Wednesday – Case studies

Nelson, 2008. Genetic genealogy testing and the pursuit of African ancestry. *Social Studies of Science* 38: 759–783.

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

Padawer 2018. Sigrid Johnson was black. A DNA test said she wasn't. *The New York Times Magazine*. 19 November 2019. < <https://nyti.ms/2RUaZxV> >

## **Week 13 (29 April–01 May): Presentations!**

## **Week 14 (06 May): Race & Variation Today**

Final paper prompt given

Reading TBA

Final paper due 15 May