



## Anthropology 305: Human Variation and Adaptation (Fall 2019)

**Professor:** Dr. Warren Wilson

**Lecture:** Tues & Thurs, 12:30-13:45, ICT 122

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**Office hours:** Fri. 12:30-13:30 & by appointment.

**Teaching Assistant:** Kristan Kushlyk

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### Course Description

In *Natural History*, Roman scientific writer Pliny the Elder remarked that, although human countenance is made up of only “ten parts or a little more,” people were so fashioned that “among the many thousands no two exist who cannot be distinguished.” How are we to explain this rich multiplicity of human physical forms? Anthropology can assist us in our efforts to answer this question. Indeed, the discipline of anthropology investigates the nature and causes of human variation as well as those aspects of life that are common to all of humanity. The anthropological sub-discipline, biological anthropology is concerned with human biology and focuses specifically on human biological variation. Utilizing a biological anthropology perspective, the goal of this course is to introduce you to the scientific study of human variation. We will begin with a consideration of the origins and impacts of the concept of race and follow this with an overview of the scientific method and the anthropological approach to the study of human biological diversity. We will then cover the biological bases of human variation in discussions of genes in human populations, the heritability of traits, and population genetics. In the latter part of the course we will look at human variation as the outcome of adaptation to a variety of environmental factors. This course should help you to understand the biology underlying the variation of human physical and psychic forms and to sort fact from fiction in the contentious and clouded debates over human variation.

### Learning Objectives

Upon completion of this course, the student should be able to:

1. describe the goals and methods of the social and natural sciences and the humanities,
2. describe the history and current scientific understanding of the concept of race,
3. explain how a misunderstanding of human variation played a role in eugenics & the Holocaust,

4. describe sources of human phenotypic variation, in general,
5. describe the history and current scientific understanding of intelligence testing,
6. describe our current understanding of the variables that influence gender,
7. describe the three levels of human adaptation to stress,
8. describe our current understanding of variation in skin colour,
9. describe how humans adapt to cold & heat stress, undernutrition, hypoxia, and infectious disease,
10. describe how human population growth rates have changed in the past 12,000 years,
11. *link the knowledge obtained in this course to their everyday life and events in the news.*

### Teaching Philosophy

In this course I do not seek to provide you with an intellectually safe space; rather I endeavor to challenge you with new ideas with which you will have to engage to reach your own conclusions. Students in my classrooms are encouraged to speak, write, listen, challenge and learn, without fear of censorship. That said, civility and mutual respect are vital to all of us, and freedom of expression does not mean the freedom to harass or threaten others. I consequently expect you to be engaged in evidence-based, rigorous debate, discussion, and even disagreement. At times, this may challenge you and even cause discomfort. Indeed, as we will consider some of the most horrific acts of inhumanity that have arisen due to human variation, such as murder, rape, and genocide, this course should be unsettling. Our consideration of such inhumanity is not gratuitous: a failure to understand the potential for such acts puts us at risk of repeating them.

### Course Conventions

**1. Lecture:** In order to meet the goals of the course you have to come regularly to class and ON TIME. Be prepared by reading what is assigned for the day. You are responsible for lecture material and any announcements concerning changes in schedule, etc. Please note that lectures are not a summary of the material presented in the text and that, on the balance, exam questions will be drawn from material emphasized in lecture.

**2. Electronic Devices:** The use by students of computers, cell phones, or other personal electronic devices in the classroom is not permitted. *Why not?* This rule is based on research which finds that most students using a computer or cell phone in the classroom attempt to multitask and students who are multitasking during class have less understanding and recall of what's being discussed ([Kirschner & Bruyckere 2017](#), [Kuznekoff et al. 2015](#), [Sana et al. 2013](#)). As well, even students who are in direct view of a multitasking peer score lower on tests compared with those who were not. Even when multitasking is blocked, researchers find that students who take notes on a computer generally perform worse than students who take notes by hand: laptop users are generally creating a transcript of the lecture, while those taking notes by hand were synthesizing the information ([Mueller & Oppenheimer 2014](#)). This is often apparent in my meetings with students

who have used their computers to create an almost verbatim record of what I said in class but are unable to grasp what I sought to convey.

**3. Prerequisites:** One of Anthropology 201, Archaeology 203, or Biology 205 or 241. You must have a basic understanding of molecular genetics, the inheritance of simple (Mendelian) traits, evolutionary theory, *and* human evolution prior to taking this course. If you are concerned about this, please see me during the first week of classes.

**4. Reading:** : reading assignments will be found both in the text book, Kormondy & Brown, 1998. *Fundamentals of Human Ecology* (available as a course pack from Bound & Copied in the MacEwan Student Centre), the Taylor Family Digital Library main information desk on the first floor, and online in the “Course Documents” section of the class Desire2Learn website. In addition to the required readings, recommended readings are often provided to enhance your knowledge of the subject in question. Keep in mind that *you are not finished with the reading assignment until you thoroughly understand it*. This will sometimes require you to read an assignment more than once. An effective way of ensuring comprehension is to read the assignment then go back through it and summarize its main points in your notebook.

**5. Content Warning:** Some of the materials and topics in this class will include explicit content (violence; sexuality; profanity; blasphemous, objectionable or illegal conduct). If you feel any materials may cause you distress or severe discomfort, you are encouraged to speak with me or your teaching assistant and/or to take measures to ensure that you feel braver in the classroom. You will not be exempt from any assigned work, but we will work together to accommodate your concerns.

**6. Evaluation:** You will be evaluated based on your performance on four mid-term exams. Prior to each exam I will hand out a list of key terms and concepts that will be covered on the exams. In preparing for each exam, you should not define each key term in isolation; rather, define and understand it in relation to the other key terms within the context of the course. As well, I will frequently give five-minute quizzes in class. These quizzes are designed to assess your understanding of the assigned readings and will not affect your grade.

*Missed exam:* You must provide advance notice to me if you are unable to attend an exam. All requests for deferral of an examination due to/for health reasons must be accompanied by written documentation as outlined in the University Calendar and should be obtained while you have the physical or emotional problem rather than after recovery. Deferred exams may be allowed in the following circumstances: illness, domestic affliction, or religious conviction. Travel arrangements and misreading of the syllabus are not valid reasons for missing an exam or incomplete or late assignments. If you have missed an exam for a legitimate reason, you will be able to write a “make up” exam as close to the original exam as possible. The make-up exam will not have the same questions as the original exam. The date and location will be at the convenience of the Department of Anthropology and Archaeology. Deferred exams will be granted only if it is determined that just cause is shown by the student.

*Grade Reappraisal:* Within two weeks of the date the exam is returned, students seeking reappraisal of examinations or assignments must submit a written response to me explaining the basis for reconsideration of their mark. I will reconsider the grade assigned and will then book a time with the student to discuss his or her work and rationale. It should be noted that a reconsidered mark may be raised, lowered, or remain the same. Neither your teaching assistant nor I will talk to you about your exam the day it is returned to you.

*Deferred term work:* Please note that requests to defer term work past the end of a term go through the [Student Success Centre](#) and must be processed by the deadlines that are established in the University of Calgary Calendar. To defer term work, complete the required [form](#) and submit it

to the Faculty of Arts Associate Dean (Students) through the [Student Success Centre](#). To make an appointment with the Associate Dean, phone (403) 220-3580. Only the Associate Dean approves requests for deferrals which extend beyond the end of a term. Neither your TA nor I are involved in such decisions.

Your final grade will be calculated as follows:

Mid-Term Exam #1:	25%
Mid-Term Exam #2:	30%
Mid-Term Exam #3:	35%
Mid-Term Exam #4:	10%

A passing grade is not required on any particular component for the student to pass the course as a whole; that is, a student may fail, for example, Exam #2 or any other component and, assuming their overall average percentage earned for the course is above 49, they will pass the course.

Letter grade assignment: At the end of the course, the numerical marks will be summed, and a final letter grade will be assigned based on the following basis:

Percentage range	Letter grade	Percentage range	Letter grade
95 or higher	A+	68-72	C+
90-94	A	64-67	C
85-89	A-	59-63	C-
81-84	B+	54-58	D+
77-80	B	50-53	D
73-76	B-	49 or lower	F

Per the [University of Calgary Calendar](#), an “A” is earned for “superior performance, showing comprehensive understanding of subject matter”. Superior performance is, by definition, rare; that is, superior is defined as “highest in quality”. More common is the grade of “B” which is earned for “clearly above average performance with knowledge of subject matter generally complete”. More common still is the grade of “C” which is earned for a “basic understanding of the subject matter”. If you require clarification on letter grade assignments, please see me within the first two weeks of the semester. Keep in mind that, you have paid for the opportunity to learn, not a grade. As such, my teaching assistant and I do our utmost to ensure that you have the best possible learning opportunity in this course.

**7. Retrieving Assignments:** The Freedom of Information and Protection of Privacy (FOIP) legislation disallows the practice of having students retrieve assignments from a public place, e.g., outside an instructor’s office or the Department main office. Term assignments must be returned to students individually, during class, or during the instructor’s office hours; if a student is unable to pick up her/his assignment s/he may provide the instructor with a stamped, self-addressed envelope to be used for the return of the assignment. The University of Calgary is committed to protecting the privacy of individuals who work and study at the University or who otherwise interact with the University in accordance with the standards set out in FOIP. The Department of Anthropology and Archaeology keeps exams and any term work not picked up for a minimum of one year after which it is destroyed. Please refer to the following link for detailed information:

<https://www.ucalgary.ca/legalservices/foip>

**8. Office Hours:** I enjoy having visitors and am happy to schedule additional times as necessary. These hours are yours and I encourage you to take advantage of them, whether you would like to discuss in greater detail something that was touched on in class or the readings or are having difficulty with some aspect of the course.

**9. E-mail:** Students are encouraged to use the lectures and office hours to ask questions. For after-hours questions, the use of email is acceptable. When writing, please write ‘ANTH 305’ in the ‘Subject’ portion of the email and use proper, not text-message, grammar. By identifying the subject of your email and writing a clear message, you will help me to reply more efficiently to your emails. I attempt to reply to all messages within four days and will generally not be able to do so on weekends or holidays.

**10. Academic misconduct:** The University expects Students to conduct Academic Activities with integrity and intellectual honesty and to recognize the importance of pursuing and transmitting knowledge ethically. “Academic Misconduct” includes such things as Cheating, Falsification; Plagiarism (including the use of other students’ work posted online), Unauthorized Assistance and failure to comply with exam regulations or an Instructor’s expectations regarding conduct required of Students completing academic assessments. Academic Misconduct is a serious form of intellectual dishonesty with significant consequences. Students who participate in, or encourage the commission of, Academic Misconduct will be subject to disciplinary action which could include Probation, Suspension, or Expulsion from the University. For more information see the Student Academic Misconduct Policy (<https://www.ucalgary.ca/policies/files/policies/student-academic-misconduct-policy.pdf>)

**11. Intellectual property:** Lectures, demonstrations, performances, and any other course material provided by an instructor includes copyright protected works under the Copyright Act and all forms of electronic or mechanical recording of lectures, laboratories, tutorials, presentations, performances, electronic (computer) information, the duplication of course material, and to the translation of recordings or transcriptions of any of these materials to another form by electronic or mechanical means by students is not permitted, except.

- As a formal accommodation as assessed by the Student Accessibility Services and only for individual private study and only at the discretion of the instructor.
- With the permission of the instructor, students without a formal accommodation may audio record lectures, provided that the student and instructor sign a release form available from departmental and faculty offices. A copy of the Release form shall be retained by the instructor and by the department in which the course is offered. Any audio recording by students is permitted only for the purposes of private study by the individual student. Students may not distribute, email or otherwise communicate these materials to any other person.
- For any other use, whether by duplication, transcription, publication, sale or transfer of recordings, written approval must be obtained from the instructor for the specific use proposed.
- Any use other than that described above (e.g. distributing, emailing or otherwise communicating these materials to any other person, constitutes academic misconduct and may result in suspension or expulsion.
- Students are encouraged to make notes of classroom discussions, lectures, demonstrations etc.
- See “**Copyright Legislation**” below

**12. Copyright Legislation:** All students are required to read the University of Calgary policy on Acceptable Use of Material Protected by Copyright ([www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf](http://www.ucalgary.ca/policies/files/policies/acceptable-use-of-material-protected-by-copyright.pdf)) and requirements of the copyright act (<https://laws-lois.justice.gc.ca/eng/acts/C-42/index.html>) to ensure they are aware of the consequences of unauthorized sharing of course materials (including instructor notes, electronic versions of textbooks etc.). Students who use material protected by copyright in violation of this policy may be disciplined under the Non-Academic Misconduct Policy.

**13. Academic Accommodations:** It is the student's responsibility to request academic accommodations according to the University policies (<https://www.ucalgary.ca/policies/files/policies/student-accommodation-policy.pdf>). Students requesting an Accommodation on the basis of Disability are required to register with Student Accommodation Services by submitting a Request for Accommodation in accordance with the Procedure for Accommodations for Students with Disabilities (<https://www.ucalgary.ca/policies/files/policies/procedure-for-accommodations-for-students-with-disabilities.pdf>). Student Accommodation Services will issue a Letter of Accommodation which must be presented to either designated contact person within the Department or the appropriate Instructors within 10 days of the beginning of term. Students needing an Accommodation in relation to their coursework or to fulfil requirements for a graduate degree, based on a Protected Ground other than Disability, should communicate this need, preferably in writing, to their Instructor or the Department Head/Dean or to the designated contact person in their Faculty.

**14. Support:** If you need support beyond that provided by your teaching assistant or me, you are encouraged to take advantage of some of these resources:

[SU Wellness Centre](#) (403-210-9355 / 403-266-4357)

[Calgary Communities Against Sexual Abuse Hotline](#) (403-237-5888)

[Alberta Mental Health Hotline](#) (1-877-303-2642)

Trained peer supporters are also available on campus through:

[Women's Resource Centre](#) (4<sup>th</sup> Floor, MacEwan Centre, in The Loft)

[Q Centre for Gender and Sexual Diversity](#) (2<sup>nd</sup> Floor, Mac Hall, near The Den).

As well, if you have a serious concern about my conduct, you may speak in full confidence to either the Head of the Department of Anthropology and Archaeology, Dr. Peter Dawson ([pcdawson@ucalgary.ca](mailto:pcdawson@ucalgary.ca)), or the Associate Dean, Undergraduate Programs and Student Affairs, Dr. Virginia Tumasz ([tumasz@ucalgary.ca](mailto:tumasz@ucalgary.ca)).

## **15. Freedom of Information and Protection of Privacy**

The University of Calgary is committed to protecting the privacy of individuals who work and study at the University or who otherwise interact with the University in accordance with the standards set out in the Freedom of Information and Protection of Privacy Act. The Department of Anthropology and Archaeology keeps exams and any term work not picked up for a minimum of one year after which it is destroyed. Please refer to the following link for detailed information:

<http://www.ucalgary.ca/legalservices/foip>

**Treaty Acknowledgement:** The University of Calgary, located in the heart of Southern Alberta, both acknowledges and pays tribute to the traditional territories of the peoples of Treaty 7, which includes the Blackfoot Confederacy (comprised of the Siksika, the Piikuni, and the Kainai) as well as the Tsuut'ina and the Stoney Nakoda (including Chiniki, Bearspaw, and Wesley First Nations). The University of Calgary is situated on land adjacent to where the Bow River meets the Elbow River. The University recognizes the traditional Blackfoot name of this place, Moh'kíns'tsis, now

known as the City of Calgary. The University recognizes that the City of Calgary is also home to Region III of the Métis Nation of Alberta. By virtue of the 1877 signing of Treaty 7, the university recognizes that we are all treaty people. The City of Calgary is home to a culturally diverse community. Together, we share this land, strive to live together, learn together, walk together, and grow together “in a good way.” *ii’ taa’ poh’ to’ p*

## Schedule<sup>1</sup>

Class	Date	Topic	Assigned Readings, Films, & Podcasts <sup>2</sup>
1	Sep. 5	course goals; why bother?	course syllabus, Understanding Science; Kristof; Implicit Association Test- <b>Race</b>
2	Sep. 10	Ways of knowing- humanities, social sciences, natural sciences, humanities, science, anthropology; Morton	Culotta; Canadian Race Relations; and either Akpan or Wiesel. <i>Optional: Lipstadt; Gladstone; Critchley; Statistics Canada; Weintraub.</i>
3	Sep. 12	The race concept: origins	Marks; Appiah. <i>Optional: Bauer &amp; Blumenthal; Milgram; SSRC; Amadio</i>
4	Sep. 17	The race concept: origins	Race the Power of Illusion; U. Utah. <i>Optional: Barbujani et al; Disotell; Whitman.</i>
5	Sep. 19	The race concept: Why do scientist reject it?; Implications of race concept	Demby; Scheiber & Abrams. <i>Optional: Rutherford, Rosenberg</i>
6	Sep. 24	Genetic variation: human genetic diversity & sources of genetic variation	Groopman; Lewis (Multifactorial Traits)
7	Sep. 26	<b>Mid-Term Exam #1</b>	
8	Oct. 1	Patterns of Inheritance: simple & complex traits	Lewis (Beyond Mendel’s Laws). Radiolab, Ghost in Your Genes. <i>Optional: Mendelian Inheritance.; Informed consent...; Epigenetics 101; Epigenetics &amp; 9/11, NPR - New Genetic Test &amp; Ethics Genetic Tests.</i>
9	Oct. 3	Complex traits: IQ, intelligence & heritability	Jones (Calliban’s Revenge), Singer (2018)
10	Oct. 8	Complex traits: IQ, intelligence & heritability	Lewontin (Mental Traits). <i>Optional: Hidden Brain</i>
11	Oct. 10	Complex traits: sex & gender	Implicit Association Test- <b>Gender</b> ; Fausto-Sterling (1993); How is sex determined?; Henig. <i>Optional: Graves; Fausto-Sterling (2000), NPR – “What if your child...”; Padawar; Minto.</i>
12	Oct. 15	Complex traits: sex & gender	Sapolsky; Belluck
13	Oct. 17	Human population biology: origins, theory, levels of adaptation	K & B <sup>3</sup> Ch. 6
14	Oct. 22	<b>Mid-Term Exam #2</b>	
15	Oct. 24	Climatic stress & human variation: solar stress, thermal stress	Loomis; Jablonski
16	Oct. 29	Climatic stress & human variation: thermal stress (cont.)	K & B Pp. 131–149
17	Oct. 31	Climatic stress & human variation: thermal stress (cont.)	K & B Pp. 149–161
18	Oct. 24	Adaptation to malnutrition: dietary requirements	K & B Pp. 186–202; Stunting; Wasting; UNICEF-WHO Child malnutrition.
19	Oct. 31	Adaptation to malnutrition: variation in susceptibility to starvation	K & B Pp. 202-204; Brown & Konner; Got lactase?
20	Nov. 5	Adaptation to Hypoxia	K & B Pp. 162-173 & Hypoxia Handout (Beall’s work), Zimmer (2018). <i>Optional: Baranova et al.</i>

*continued on page 8*

## Schedule<sup>1</sup> (continued from page 7)

Class	Date	Topic	Assigned Readings, Films, & Podcasts <sup>2</sup>
21	Nov. 7	Adaptation to Infectious Disease	K & B pp. 204-224
n/a	Nov. 12-14	Reading Week- no classes	
22	Nov. 19	Adaptation to Infectious Disease	Orent, Jacobs & Richtel
23	Nov. 21	Mid-Term Exam #3	
24	Nov. 26	Adaptation to Infectious Disease	Stress: Portrait of a Killer
25	Nov. 28	Population Ecology: terms & concepts in demography	K & B Ch. 4, Gapminder (2013),
26	Dec. 3	Course wrap up	This American Life ("Words")
27	Dec. 5	Mid-Term Exam #4	

<sup>1</sup> The schedule of topics may change, but the exam dates will not change.

<sup>2</sup> For a detailed bibliography of the readings, please see the pages below. The reading assignments are subject to change if, during the present semester, I find publications which better cover the topic considered. If this occurs, I will inform you at least one week prior to the relevant class.

<sup>3</sup> K & B = Kormondy & Brown's *Fundamentals of Human Ecology* (This is available as a course pack at Bound & Copied in Mac hall)

## Readings

Some readings are available as pdfs on the Desire2Learn (D2L) website, some only in the McKimmie Library Reserve Reading, and others online. Note, this bibliography does NOT include readings from the Kormondy and Brown text.

Akpan, Uwem (2008) *Say You're One of Them*. Hachette Book Group. New York. (While the entire book is appropriate for this course, the reading assignment only covers the book's last chapter: "My Parent's Bedroom"). (pdf posted on D2L)

Amodio (2014) The neuroscience of prejudice and stereotyping. *Nature Reviews Neuroscience* 15:670–682 doi:10.1038/nrn3800 (*optional reading*)

Appiah, Kwame Anthony (2016) Colour. Mistaken Identities: Creed, Country, Color, Culture. The Reith Lectures. BBC. <http://www.bbc.co.uk/programmes/b080t63w> (43 minutes) Listen to both Dr. Appiah's talk and the question and answer session. If you'd prefer to read the lecture, a transcript of his talk can be found on D2L.

Baranova et al. (2017) Genetic determination of the vascular reactions in humans in response to the diving reflex. *Am J Physiol Heart Circ Physiol* 312: H622–H631. doi:10.1152/ajpheart.00080.2016. (*optional reading*)

Barbujani et al. (1997) An apportionment of human DNA diversity. *Proceedings of the National Academy of Sciences* 94:4516-4519. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC20754/> (*optional reading*)

Bauer (2006) On the Holocaust and Other Genocides. United States Holocaust Memorial Museum. <http://www.ushmm.org/m/pdfs/20070215-bauer.pdf> (*optional reading*)

Belluck, P (2019) Many Genes Influence Same-Sex Sexuality, Not a Single 'Gay Gene'. The New York Times. 29 August. <https://nyti.ms/2ZmHedC>

Blumenthal (2009) How Might Another Holocaust be Prevented. United States Holocaust Memorial Museum. <http://www.js.emory.edu/BLUMENTHAL/Hol%20Prevention.htm> (*optional reading*)

Brown, PJ and M Konner. 1987. An anthropological perspective on obesity. *Annals of the New York Academy of Sciences*. Vol. 499. Pp. 29-46.  
<http://onlinelibrary.wiley.com.ezproxy.lib.ucalgary.ca/doi/10.1111/j.1749-6632.1987.tb36195.x/pdf>

Canadian Race Relations Foundation. 2019. Hate Crimes in Canada. <https://www.crrf-fcrr.ca/en/news-a-events/articles/item/26823-hate-crime-in-canada>

Critchley, S (2014) The Dangers of Certainty: A Lesson From Auschwitz. *The New York Times* ([http://opinionator.blogs.nytimes.com/2014/02/02/the-dangers-of-certainty/?\\_php=true&type=blogs&src=me&ref=general&r=0](http://opinionator.blogs.nytimes.com/2014/02/02/the-dangers-of-certainty/?_php=true&type=blogs&src=me&ref=general&r=0)) Note, the video described can be seen here <https://www.youtube.com/watch?v=wXwj4jMnWZg> . I have also placed the transcript for this video in the “Readings” section of D2L). (*optional reading*)

Culotta, E. 2012. Roots of Racism. *Science*. 336:825-827. (The easiest way to locate this article is to paste the article title into the library search box at <http://library.ucalgary.ca/>. Alternatively, the direct link is <http://science.sciencemag.org.ezproxy.lib.ucalgary.ca/content/336/6083/825>.)

Demby, Gene (2014) The Ugly, Fascinating History Of The Word 'Racism'. *Code Switch*, National Public Radio. <http://www.npr.org/sections/codeswitch/2014/01/05/260006815/the-ugly-fascinating-history-of-the-word-racism>. Accessed: 15 July 2016.

Disotell (2000) Human genomic variation. *Genome Biology* 1(5):comment2004.1–2004.2. <http://genomebiology.biomedcentral.com/articles/10.1186/gb-2000-1-5-comment2004> (*optional reading*)

Epigenetics 101: a beginner’s guide (2014).  
<https://www.theguardian.com/science/occams-corner/2014/apr/25/epigenetics-beginners-guide-to-everything> (*optional reading*)

Epigenetics & 9/11- Rachel Yehudah (2014) How Trauma and Resilience Cross Generations. <http://www.onbeing.org/program/rachel-yehuda-how-trauma-and-resilience-cross-generations/7786> (*optional podcast*)

Fan et al. (2016) Going global by adapting local: a review of recent human adaptation. *Science* 354:54-59 (*optional reading*)

Fausto-Sterling. 1993. The five sexes. *The Sciences*. March/April 1993.  
[http://www.fd.unl.pt/docentes\\_docs/ma/TPB\\_MA\\_5937.pdf](http://www.fd.unl.pt/docentes_docs/ma/TPB_MA_5937.pdf) or  
<http://ezproxy.lib.ucalgary.ca:2048/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=9305215658&site=ehost-live> (select PDF Full Text on the left side of the page)

Fausto-Sterling. 2000. The five sexes, revisited. *The Sciences*. July/August 2000.  
<http://www.aiissg.org/PDFs/Five-Sexes-Revisited-2000.pdf> (*optional reading*)

Gapminder (2013) Don’t Panic. BBC. (59-minute video). <https://www.gapminder.org/videos/dont-panic-the-facts-about-population/>

Ghost in Your Genes (2007) NOVA. (50-minute video) <https://vimeo.com/248146854>

Gladstone, R (2014) 26 Percent of World's Adults Are Anti-Semitic, Survey Finds. *The New York Times* <http://www.nytimes.com/2014/05/14/world/26-percent-of-worlds-adults-are-anti-semitic-survey-finds.html> (*optional reading*)

Got lactase? (2007) Understanding Evolution. University of California Museum of Paleontology. [http://evolution.berkeley.edu/evolibrary/news/070401\\_lactose](http://evolution.berkeley.edu/evolibrary/news/070401_lactose)

Graves, J (2014) Sex, genes, the Y chromosome and the future of men. *The Conversation*. <http://theconversation.com/sex-genes-the-y-chromosome-and-the-future-of-men-32893> (*optional reading*)

Groopman, Jerome 1998. Decoding Destiny. *New Yorker*. February 9, 1998. Pp. 42-47. <http://jeromegroopman.com/ny-articles/DecodingDestiny-BRCA-020998.pdf>

Henig, Robin M. 2017. How Science Is Helping Us Understand Gender. National Geographic Magazine. <https://www.nationalgeographic.com/magazine/2017/01/how-science-helps-us-understand-gender-identity/>

Hidden Brain (2018) Emma, Carrie, Vivian: How A Family Became A Test Case For Forced Sterilizations. <https://www.npr.org/2018/04/23/604926914/emma-carrie-vivian-how-a-family-became-a-test-case-for-forced-sterilizations> (*optional*, 41-minute podcast)

How is sex determined? (2001) NOVA. <http://www.pbs.org/wgbh/nova/body/how-sex-determined.html>

Huntington's Disease (2004) Venezuelan kindreds reveal that genetic and environmental factors modulate Huntington's disease age of onset. *Proceedings of the National Academy of Sciences* 101(10):3498-3503. (The easiest way to locate this article is to paste the title into the library search box at <http://library.ucalgary.ca/>.)

Implicit Association Test- **Race**. <https://implicit.harvard.edu/implicit/canada/takeatest.html> Read the text on this page, then click "I wish to proceed". On the next page, click the blue box which says "Race". Read the instructions and proceed. ONLY YOU WILL SEE YOUR RESULTS. I may ask you some general questions about what you thought of the test but will never seek to determine what the test told you about your views on race.

Implicit Association Test- **Gender**. <https://implicit.harvard.edu/implicit/canada/takeatest.html> Read the text on this page, then click "I wish to proceed". On the next page, click the blue box which says "Gender". Read the instructions and proceed. ONLY YOU WILL SEE YOUR RESULTS. I may ask you some general questions about what you thought of the test but will never seek to determine what the test told you about your views on gender.

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[https://www.glowm.com/section\\_view/heading/Mendelian%20Inheritance%20and%20Its%20Exceptions/item/342](https://www.glowm.com/section_view/heading/Mendelian%20Inheritance%20and%20Its%20Exceptions/item/342) As I expect you to already understand types of Mendelian inheritance, focus here on the section "exceptions to Mendelian inheritance".

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To access the video:

1. Open the U. Calgary [library webpage](#)
2. Scroll down to the green bar and select [Databases](#)
3. In Databases select [F](#),
4. Select [Films on Demand](#)
5. In the search box type [\*Race: The Power of an Illusion\*](#),
6. Scroll down to and watch **The Difference Between Us**

A transcript of this video can be found here: [http://www.pbs.org/race/000\\_About/002\\_04-about-01-01.htm](http://www.pbs.org/race/000_About/002_04-about-01-01.htm)

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