

The 20th Century Gene

History 201

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Office hours: Thursday, 1:45–3:45 pm, or by appointment

Spring 2018
Van Hise 486
Monday, Wednesday 2:30–3:35 pm

The DNA double helix structure is perhaps the most well-known discovery of twentieth century biological research. How did genetics come to occupy such a prominent place in both scientific and popular thinking? What are the consequences of the attention scientists, policy makers, and ordinary people devote to genes? This course will address these questions by tracing out the historical arc of genetic research over the course of the twentieth century, from the eugenics movement at its beginning to the global initiative to sequence the human genome at its close. We will touch on the intertwined histories of classical genetics, medical genetics, and eugenics; focusing in particular on eugenics in the United States and Wisconsin.

The course is discussion based, with occasional in-class lectures that provide additional background on topics not covered by the course readings. Assignments for this course include oral presentations, short writing pieces, and a research paper, with a focus on developing revision skills.

Course Objectives

By the end of the course, you will be able to:

- Identify key people, events, technologies, and institutions in the history of genetics;
- describe how genetic research has changed over the course of the twentieth century;
- articulate the connections between scientific research on genetics and other domains such as medicine, public policy, and popular culture;

- reflect on the insights that controversial moments in the history of genetics (such as the eugenics movement) hold for contemporary society;
- accurately summarize the key points in individual articles, synthesize themes across bodies of academic scholarship, and present these findings orally;
- develop and defend your own academic arguments in writing; and
- use revision techniques to evaluate and improve the quality of your oral and written assignments.

Course materials

There are no required texts for the course. Readings marked with a * in the syllabus are available for online or through UW–Madison’s electronic library collections. Scanned copies of the remaining readings will be available on the Canvas site for the course. Please bring either a digital or a paper copy of the assigned readings with you to class, so that you can refer to them during discussion.

Assignments and grading

<i>Assignment</i>	<i>% of final grade</i>	<i>Due date</i>
Class participation	15%	formative assessment at mid semester
Five one-page write-ups	20%	weeks 3–9
Research paper	15%	March 7
Reading presentation	10%	weeks 5–12
Research presentation	15%	Weeks 13–14
Revised research paper	25%	May 9

Detailed descriptions and rubrics for all assignments will be available for download on the Canvas site. All assignments will receive a numeric score (e.g. 29/30), and your total numeric score will be converted into a final letter grade using the conversion table below.

A	AB	B	BC	C	D	F
93.0–100%	88.0–92.99%	83.0–87.99%	78.0–82.99%	70.0–77.99%	60.0–69.99%	0–59.99%

Course policies

Absences You are allowed one freebie (no questions asked) absences that you can take at any time during the semester; after that absences will count against your participation grade. For absences due to illness, family emergencies, religious observance, or other legitimate reasons, you can make up the missed participation grades by completing a 250 word informal reading response instead of attending section. You must contact me in advance of the missed class (unless there are exceptional circumstances) to clear your absence with me and agree on a due date for your reading response.

Workload This course meets as a group for two 75 minute sessions per week, and I expect that you will spend an additional 3 hours working outside of class for each class period. In other words, plan to spend an average of 6 hours per week reading, writing, and preparing for discussions.

Grading errors If there are errors in calculating your grade for an assignment or you would like additional clarification on how your work was graded, please contact me within two weeks of day that the assignment grades are posted.

Late assignments If you are facing circumstances are making it difficult for you to meet assignment deadlines (including personal circumstances such as uncertain housing, lack of food, health issues, family crises), I am happy to discuss deadline extensions or other accommodations (you can also contact the Dean of Students Office for assistance with these issues, <https://doso.students.wisc.edu/student-assistance/>). Please come see me well in advance of the assignment deadline whenever possible. If you do not make prior arrangements with me, late assignments will lose 3% of the total assignment points per day late.

Students with disabilities I am happy to discuss academic accommodations for students with disabilities. Please present your McBurney visa within the first three weeks of the semester so that there is enough time for appropriate arrangements to be made. Academic integrity: Everyone is expected to adhere to UW–Madison’s core values regarding academic integrity. Plagiarism or other academic misconduct may result in a zero on the assignment or exam, a lower grade in the course, or failure in the course. See the Dean of Students Office website for more information about the academic misconduct process (<http://students.wisc.edu/doso/acadintegrity.html>).

Week 1: Introduction

January 24

No assigned readings

Week 2: Before genetics

January 29

- Staffan Mueller-Wille and Hans-Joerg Rheinberger. 2014. *A Cultural History of Heredity*. Chicago: University of Chicago Press, 15–40.

January 31

- Siddhartha Mukherjee. 2016. *The Gene: An Intimate History*. New York: Scribner, 17–27.
- Class session at Memorial Library

Week 3: Studying the history of genetics

February 5

- Robert C. Olby. 1997. "Mendel, Mendelism, and Genetics."* Available online at: <http://www.mendelweb.org/MWolby.html>

February 7

- No assigned readings
- Class session at Memorial Library

Week 4: Studying the history of eugenics

February 12

- Barbara A. Kimmelman. 1983. "The American Breeders' Association: Genetics and Eugenics in an Agricultural Context, 1903-13." *Social Studies of Science* 13 (2): 163-204.*

February 14

- Bennett O. Odegard and George M. Keith. 1939. *A History of the State Board of Control of Wisconsin and the State Institutions, 1849-1939*. Madison, WI: State Board of Control, 73-75.
- Class session at the Wisconsin Historical Society

Week 5: How did World War 2 shape genetic research?

February 19

- Soraya de Chadarevian. 2002. *Designs for Life: Molecular Biology after World War II*. Cambridge: Cambridge University Press, 50-97.
- Robert M. Cook-Deegan. 1994. *The Gene Wars: Science, Politics, and the Human Genome*. W. W. Norton & Company, 92-106.

February 21

- Katherine Gottschalk and Keith Hjortshoj. 2004. *The Elements of Teaching Writing: A Resource for Instructors in All Disciplines*. Boston, MA: Bedford/St Martins, 107-110.
- Workshop on argument

Week 6: How did World War 2 shape eugenics?

February 26

- Diane B. Paul. 1998. *The Politics of Heredity: Essays on Eugenics, Biomedicine, and the Nature-Nurture Debate*. Albany: State University of New York Press, 53-80.
- Film screening: *The Sterilization of Leilani Muir*

February 28

- John Sanford. 2000. "The development of the biolistic process." *In Vitro Cellular & Developmental Biology—Plant* 36(5): 303–308.*
- Workshop on sources

Week 7: How did race, class, and gender shape eugenics?**March 5**

- Robert Proctor. 1988. *Racial Hygiene: Medicine under the Nazis*. Cambridge, MA: Harvard University Press, 118–30.
- Nancy Ordovery. 2003. *American Eugenics: Race, Queer Anatomy, and the Science of Nationalism*. Minneapolis: University of Minnesota Press, 9–31.

March 7

- No assigned readings
- Film screening: *A Bill of Divorcement*

Week 8: What did eugenics look like in other countries?**March 12**

- Jennifer Robertson. 2010. "Eugenics in Japan: Sanguinous Repair." In *The Oxford Handbook of the History of Eugenics*, edited by Alison Bashford and Philippa Levine. Oxford: Oxford University Press, 430–448.
- Carolyn Strange and Jennifer A. Stephen. 2010. "Eugenics in Canada: A Checkered History, 1850s-1990s." In *The Oxford Handbook of the History of Eugenics*, edited by Alison Bashford and Philippa Levine. Oxford: Oxford University Press, 523–538.

March 14

- No assigned readings
- Peer review session

Week 9: How do non-scientists understand genetics?**March 19**

- Barbara Duden. 2009. "What Genes Say." In *Ideas on the Nature of Science*, edited by David Cayley. Fredericton, NB: Goose Lane Editions, 257–265.
- Rayna Rapp. 2000. *Testing Women, Testing the Fetus: The Social Impact of Amniocentesis in America*. New York: Routledge, 165–192.

March 21

- No assigned readings
- Film screening: *GATTACA*

Week 10: How can genetics shape culture and identity?**April 2**

- Kim TallBear. 2013. *Native American DNA: Tribal Belonging and the False Promise of Genetic Science*. Minneapolis: University of Minnesota Press, 143–176.

April 4

- Katherine Gottschalk and Keith Hjortshoj. 2004. *The Elements of Teaching Writing: A Resource for Instructors in All Disciplines*. Boston: Bedford/St Martins, 64–66.
- Howard S. Becker. 1986. *Writing for Social Scientists: How to Start and Finish your Thesis, Book, or Article*. Chicago: University of Chicago Press, 43–67.
- Revisions workshop: reverse outlining

Week 11: Is genetics “determinist”? What about epigenetics?**April 9**

- John Cloud. 2010. “Why Genes Aren’t Destiny.” *Time* (January 18): 48–53.
- Sarah Richardson. 2015. “Maternal Bodies in the Postgenomic Order.” In *Postgenomics: Perspectives on Biology After the Genome*, edited by Sarah Richardson and Hallam Stevens. Durham, NC: Duke University Press, 210–231.
- H. S. Jennings. 1924. “Heredity and Environment.” *Scientific Monthly* 19(3): 225–238.

April 11

- Gordon Harvey. 1998. *Writing with Sources: A Guide for Students*. Indianapolis, IN: Hackett Publishing Company, 3–13.
- Revisions workshop: sources

Week 12: Are we presently experiencing a return of eugenics?**April 16**

- Nikolas Rose. 2006. *The Politics of Life Itself: Biomedicine, Power, and Subjectivity in the Twenty-First Century*. Princeton, NJ: Princeton University Press, 41–76.
- Kacey Cherry. 2017. “Iceland’s Down syndrome dilemma.”* Available online at: <https://www.cbsnews.com/news/behind-the-lens-disappearing-down-syndrome/>
- Film screening: *The End*

April 18

- Andrea A. Lunsford. 2006. *Easy Writer: A Pocket Reference*. Boston: Bedford/St Martin's, 1–10.
- Revisions workshop: paragraph and sentence level

Week 13: Research presentations

April 23

- No class meeting

April 25

- No assigned readings
- Panel one presentations

Week 14: Research presentations

April 30

- No assigned readings
- Panel two presentations

May 2

- No assigned readings
- Panel three presentations