

# 140.143 Genetics in Medicine and Society

Fall 2011

Lectures MW 9-9:50 (Barton 114)

Section F 9-9:50

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## *Miscellaneous rules and guidelines*

Turn off cell phones before entering class.

You may take notes on a laptop in class, but please, no email, social-networking, or internet browsing.

Feel free to bring water, coffee, or a soft drink, but please do not eat in class.

If you arrive late or must leave early, please do so quietly and undisruptively. Frequent tardiness or absence will affect your grade.

Students are expected to conduct themselves in an honest and ethical manner, as stipulated by common sense and JHU policy ([http://www.jhu.edu/news\\_info/policy/civility.html](http://www.jhu.edu/news_info/policy/civility.html)).

## *Assignments and Grading*

- **Book reviews (2x15% of final grade)**  
See instructions and list of titles at the end of the syllabus.
- **Midterm (20% of final grade)**
- **Discussion Section (10% of final grade)**  
Discussion section grade will be based on attendance, participation, and assignments given by your TA.
- **Final exam (30% of final grade)**
- **Class participation/professor's discretion (10% of final grade)**

## *Required Books (available at the campus bookstore):*

Kevles, Daniel J. *In the name of eugenics: genetics and the uses of human heredity*. Second ed. Harvard University Press, 1995 (first edition 1985 available on Google Books:  
<http://books.google.com/books?id=8esnhRxBomMC&lpq=PP1&pg=PA329#v=onepage&q&f=false>

Schwartz, J. (2008). *In pursuit of the gene: from Darwin to DNA*. Cambridge, Mass., Harvard University Press.

McElheny, V. K. (2010). *Drawing the map of life: inside the Human Genome Project*. New York, NY, Basic Books (electronic version available through the JHU library catalog)

Watson, J. D. (1981). *The double helix*. New York, WW Norton.

## *Readings*

See lecture outline and bibliography below. Articles are posted with JHU's eReserves <http://proxy.library.jhu.edu/login?url=http://reserves.library.jhu.edu/access/reserves/findit/articles/index.php>. Use the password "COM143." Readings can also be found on the course site on Blackboard, accessible from your account at [my.jhu.edu](http://my.jhu.edu). Direct links to JStor may not be functional from these official course websites; I can't fix that.

### Book Reviews

You are to write two book reviews, selecting the books from the list below (no substitutions). The reviews should be about 1,000 words in length and should be in the style of the reviews in the journals *Science* or *Nature*. In order to get a sense of this style, you should read several of these before beginning your own review, looking especially for books relating to the history of genetics. A good review gives an accurate synopsis of the book *and* evaluates it in terms of the argument, evidence, the existing literature on the subject, audience, interest and significance, and style. A superb review also adds a novel idea or interpretation of the reviewer's own—the review is worth reading for its own sake, not just as a guide to the book.

The book reviews are due on Oct. 14 and Nov. 18. A moment's reflection will show that it makes sense to review books on 19<sup>th</sup> and early 20<sup>th</sup> century material first, and books on later material second.

As a matter of integrity, reviewers never read other reviews of the book before they write their own. As a matter of pragmatism, your instructors have read most of the published reviews of these books and will recognize others' ideas and phrasing if we read them in your reviews.

### Book Review List

- Brookes, M. (2004). *Extreme measures : the dark visions and bright ideas of Francis Galton*. New York, Bloomsbury.
- Chadarevian, S. de (2002). *Designs for life : molecular biology after World War II*. New York, Cambridge University Press.
- Cowan, R. S. (2008). *Heredity and Hope: The Case for Genetic Screening*. Cambridge, Mass., Harvard University Press.
- English, D. K. (2004). *Unnatural selections : eugenics in American modernism and the Harlem Renaissance*. Chapel Hill, University of North Carolina Press.
- Largent, M. A. (2008). *Breeding contempt : the history of coerced sterilization in the United States*. New Brunswick, N.J., Rutgers University Press.
- Lerner, B. H. (2001). *The breast cancer wars : hope, fear, and the pursuit of a cure in twentieth-century America*. New York, Oxford University Press.
- Lindee, S. (2005). *Moments of Truth in Genetic Medicine*. Baltimore, Johns Hopkins University Press.
- Nelkin, D. and S. Lindee (1995). *The DNA Mystique: The Gene as a Cultural Icon*. New York, W.H. Freeman & Co.
- Proctor, R. (1988). *Racial Hygiene: Medicine Under the Nazis*. Cambridge, Harvard Univ. Press.
- Stern, A. (2005). *Eugenic Nation: Faults and Frontiers of Better Breeding in Modern America*. Berkeley, University of California Press.
- Tucker, W. H. (2002). *The Funding of Scientific Racism: Wickliffe Draper and the Pioneer Fund*. Urbana, University of Illinois Press.
- Wailoo, K. and S. G. Pemberton (2006). *The Troubled Dream of Genetic Medicine: Ethnicity and Innovation in Tay-Sachs, Cystic Fibrosis, and Sickle Cell Disease*. Baltimore, Johns Hopkins University Press.

## Lecture Schedule

1	Mon., Aug. 29	Introduction	
2	Wed., Aug 31	How heredity became a problem	Schwartz, chap. 1 Jenkin 1867 Darwin 1998 [1868] (Most important is part 2, beginning on p. 369)
	<i>Fri, Sep 2</i>	<i>Discussion section</i>	
	Mon, Sep 5	<b>No class (Labor Day)</b>	
3	Wed, Sep 7	The nature and nurture of Francis Galton	Kevles chap. 1; Schwartz, chaps. 2 & 3 Galton 1876 Galton 1873
	<i>Fri, Sep 9</i>	<i>Discussion section</i>	
4	Mon, Sep 12	Why was Mendel ignored?	Schwartz, chaps. 4, 5 Mendel 1866
5	Wed, Sep 14	Inventing Mendelism	Schwartz, chaps. 6, 7 Correns 1900 de Vries 1900
	<i>Fri, Sep 16</i>	<i>Discussion section</i>	
6	Mon, Sep 19	Biochemical individuality	Garrod 1902 Bearn and Miller 1979
7	Wed, Sep 21	The white-eyed fly	Morgan 1910 Schwartz, chaps. 9, 10
	<i>Fri, Sep 23</i>	<i>Discussion section</i>	
8	Mon, Sep 26	The science of human improvement through better breeding	Kevles, chaps. 3-6 Davenport 1910
9	Wed, Sep 28	The surgical solution	Kevles, chaps. 7-9 Schoen 2005
	<i>Fri, Sep 30</i>	<i>Discussion section</i>	
10	Mon, Oct 3	<b>Midterm Exam</b>	
11	Wed, Oct 5	Heredity clinics	Kevles, chaps. 10-13 Comfort 2006 Dice 1952
	<i>Fri, Oct 7</i>	<i>Discussion section</i>	
	Mon, Oct 10	<b>No class: Fall Break Day</b>	
12	Wed, Oct 12	Genetics and the bomb	Kevles, chap. 15 Glass 1958 Beatty 1991
	<i>Fri, Oct 14</i>	<i>Discussion section</i>	<b>***First book review due***</b>
13	Mon, Oct 17	The secret of life?	Watson, 1-131
14	Wed, Oct 19	The double helix as farce	Watson, ix-xxv; 137-157
	<i>Fri, Oct 21</i>	<i>Discussion section</i>	
15	Mon, Oct 24	Getting their organ	Kevles, chap. 16 Kottler 1974
16	Wed, Oct 26	Genetics without sex	McElheny, chap. 1 Haldane 1955 Lederberg 1963
	<i>Fri, Oct 28</i>	<i>Discussion section</i>	
17	Mon, Oct 31	PKU: the making of a genetic	Kevles, chap. 17

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		disease	Penrose 1946 Paul 1998
18	Wed, Nov 2	The great IQ debate	Kevles, chap. 18 Lewontin 1970 Bodmer and Cavalli-Sforza 1970
	<i>Fri, Nov 4</i>	<i>Discussion section</i>	
19	Mon, Nov 7	The XYY controversy	Sandberg et al. 1961 Jacobs et al. 1965 Beckwith and et al. 1975 Culliton 1975 Walzer and Gerald 1975
20	Wed, Nov 9	Recombinant DNA	Berg et al. 1975 Wright 1986
	<i>Fri, Nov 11</i>	<i>Discussion section</i>	
21	Mon, Nov 14	Maps and territories	McElheny, chap. 2 Weiss and Green 1967 McKusick and Ruddle 1977 Botstein et al. 1980
22	Wed, Nov 16	The HGP	McElheny, chaps. 3-5
	<i>Fri, Nov 18</i>	<i>Discussion section</i>	<b>***Second book review due***</b>
23	Mon, Nov 21	Gene therapy	Kevles, chap. 19 Friedmann and Roblin 1972 Anderson 1989 Wolff and Lederberg 1994 Stolberg 1999
	Wed, Nov 23	<b>No class: Thanksgiving</b>	
	Fri, Nov 25	<b>No class: Thanksgiving</b>	
24	Mon, Nov 28	Personalized medicine or racialized medicine?	Jordan 1912 Hood and Friend 2011 Kahn 2004 McElheny, chap. 6
25	Wed, Nov 30	A science of human perfection	Muller 1935 Stock 2002 Olson 2008 McElheny, chap. 7
	<i>Fri, Dec 2</i>	<i>Discussion section</i>	

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- Berg, P., D. Baltimore, et al. (1975). "Asilomar conference on recombinant DNA molecules." *Science* **188**(4192): 991-994.
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