This seminar course, intended primarily for juniors and seniors, explores the relationship between the biological sciences and society in the U.S. throughout the twentieth century. We shall discuss the depressing history of eugenics and investigate how the U.S. government saw eugenics as proffering an objective tool for measuring traits deemed desirable. The eugenics program culminated in the sterilizations of tens of thousands of Americans who possessed ‘undesirable’ traits. We shall continue by asking if there is a link between eugenics and the Human Genome Project, which was created, in part, with a view to treat diseases genetically rather than chemically. We shall also see how economics, politics, and religion have shaped biotechnology and human-embryonic-stem-cell research. Students are invited to think about the way in which debates concerning ‘nature versus nurture’ have been framed historically, in order to understand current controversies over that distinction. Perhaps the most recent ethical challenge faced by future scientists and engineers is biotechnology. Students of bioengineering and molecular biology need to be made aware of the public’s perception of and response to human-embryonic-stem-cell research. Similarly, students trained in the humanities and social sciences need to add their expertise to the conversation, as much is at stake. Debates concerning the ethical, legal, and social implications of the Human Genome Project are raging throughout university lecture halls, newspaper editorials, and the newsrooms of major networks. Who should be given access to your genetic information? Your employer? Your insurance company? The government? How is molecular biology challenging antiquated notions of race? Can one ascertain someone’s ‘race’ by simply looking at her/his DNA? What are the social, political, and ethical ramifications if one can, and indeed if one cannot? Just how much of human behavior is shaped by genes, and how does that affect issues concerning free will and culpability? How has the patenting of human and plant genes reshaped both the conduct and content of scientific research as well as intellectual property law? Several studies have shown that patenting actually increases the level of secrecy, thereby thwarting its initial purpose. Other studies have demonstrated compellingly that some patents of human genes have thwarted further research into potential cures. Finally, we shall investigate how the HIV/AIDS epidemic has challenged our notion of the doctor-patient relationship, the FDA’s rules for testing drug efficacy, and patient activism. We shall stress the importance of learning how to read and write critically. Also, it is imperative that you play an active role in class. Indeed, part of your grade will be based on class participation.

The papers are due at the beginning of the class as listed in the syllabus. Late papers, which are not accompanied by a physician’s note, will not be accepted, and you will reserve a 0 (zero) for that assignment. Also note that it is neither in your interest nor
mine for you to ask for an incomplete; however, if there is a family emergency, or you have been ill, we can certainly discuss the possibility of you receiving an incomplete.

Note on plagiarism: “As a Gallatin student you belong to an interdisciplinary community of artists and scholars who value honest and open intellectual inquiry. This relationship depends on mutual respect, responsibility, and integrity. Failure to uphold these values will be subject to severe sanction, which may include dismissal from the University. Examples of behaviors that compromise the academic integrity of the Gallatin School include plagiarism, illicit collaboration, doubling or recycling coursework, and cheating. Please consult the Gallatin Bulletin or Gallatin website [www.gallatin.nyu.edu/academics/policies/policy/integrity.html] for a full description of the academic integrity policy.”

Goals:

* To understand the historical relationships between socio-cultural context and the biological sciences
* To appreciate the social, economic, political, and ethical implications of the biological sciences
* To read critically and carefully primary and secondary literature
* To develop writing skills relevant to the socio-cultural and political aspects of the biological sciences

Week 0: Introduction (2 September)

Wednesday: Introduction: Course Goals and Mechanics.

Week 1: Science, Objectivity and Politics (7 September)

Monday: NO CLASS. Labor Day


Week 2: Human Genome Project (14 September)


Wednesday: Human Genome Project, I. Brief History of the Project. Reading: Hood and Kevles, *The Code of Codes* (T), Chapters 1, 3, and 5 and Davies, *Cracking the Genome* (T), chapters 3 and 4. For links to the ethical, legal and
social implication of the Human Genome Project (the topic of the next four lectures), skim through http://www.kumc.edu/gec/prof/geneelsi.html.

Week 3: Molecular Biology and Race, Part I (21 September)


Wednesday: Molecular Biology and Race, Part I. Reading: Hammonds and Herzig and eds., The Nature of Difference (T), pp. 309-345; Pamela Sankar and Jonathan Kahn, “BiDil: Race Medicine or Race Marketing?” (on electronic reserve) and Rick Carson, “The Case of BiDil: Policy Commentary on Race and Genetics” (http://content.healthaffairs.org/cgi/reprint/hlthaff.w5.464v1)

Week 4: Molecular Biology and Race, Part II (28 September)

Monday: Molecular Biology and Race, Part II. Reading: Troy Duster, “Race and Reification in Science,” (on electronic reserve); ibid., “Lessons from History: Why Race and Ethnicity Have Played A Major Role in Biomedical Research,” (on electronic reserve); and Duana Fullwiley, “The Molecularization of Race” (on electronic reserve)


Week 5: Intellectual Property and Molecular Biology (5 October)

NOT pay for the articles! **Paper One due in class, 5 October, 6-7 pages in length.**


**Week 6: Student Presentations HGP, Race, Gene Patenting (12 October)**

**Monday:** NO CLASS, Columbus Day.

**Tuesday:** Student Presentations 1 on Human Genome Project/Patenting/Privacy

**Wednesday:** Student Presentations 2: Race and Molecular Biology

**Week 7: Biotechnology, GMOs, Part I (19 October)**

Monday: No Class. Watch “Harvest of Fear,” on youtube, 12 segments starting with https://www.youtube.com/watch?v=k7a9c7CLBpg. And watch the part of “Food, Inc.” discussing Monsanto and farmers, https://www.youtube.com/watch?v=i_Ltaxr_BWk starting at 57:45 to the end. The film is excellent, so if you have time, watch the entire movie.

Wednesday: GMOs. Reading: Winston, Travels in the Genetically Modified Zone (T), pp. 11-106.

**Week 8: GMOs (26 October)**

**Monday: Student Presentations 3: GMOs.** Plant Biotechnology. Reading: Winston, Travels in the Genetically Modified Zone (T), pp. 107-183. Also, have a gander at web sites of biotech companies, such as Pfizer and Monsanto (www.pfizer.com and www.monsanto.com).

**Wednesday: Student Presentations 4: GMOs.**

**Week 9: Stem-Cell Research and Public Policy (2 November)**


**Week 10: Stem-Cell Research and Public Policy (9 November)**

**Monday: Student Presentations 4 (Stem Cells).**

**Wednesday: Student Presentations 5 (Stem Cells).**


**Monday: NO CLASS.**


**Week 12: HIV/AIDS: The Politics of Disease, Part II (23 November)**

**Monday: HIV/AIDS, Part II. Reading, Epstein, *Impure Science* (T), pp. 79-234 (finish the reading over the following weekend)**

**Wednesday: No Class, Thanksgiving and The Professor’s Birthday.**

**Week 13: Tying it together (30 November)**

**Monday: Student Presentations 6 (HIV/AIDS)**

**Wednesday: Patents, HIV/AIDS, and Race Reading: Jackson, *A Genealogy of a Gene*, chapters 1-2, 6-7.**

**Week 14: Conclusion (7 December)**

**Monday: Student Presentations 7 (HIV/AIDS)**

**Wednesday: Student Presentations 8 (HIV/AIDS) and course conclusion and evaluations.**

**Week 15 (14 December)**

**Monday: Paper Three due in class, 6 - 7 pages**

Required texts, designated by (T) throughout the syllabus, are available at the book store or on reserve in Bobst library, [http://bit.ly/1LhjJ8h](http://bit.ly/1LhjJ8h).


**EXPLANATION of GRADE DETERMINATION:**

3 papers (6-7 pages each) @ 20% each totaling 60%, class discussion 20%, presentation, 20%. If you do not wish to present, you may write a fourth paper, 6-7 pages in length, due in class on 14 December. It is worth 20% of your grade, same as a presentation.

**OFFICE HOURS AND RELEVANT INFORMATION:**

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