Department of Philosophy
Georgetown University
Spring Semester 1987
Wednesdays, 3:15-5:05

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4:30 or by appointment

ETHICS AND GENETIC TECHNOLOGIES
179-546-01

GOALS AND OBJECTIVES

The principal goal of this course is to explore some of the mataphysical, ethical, and public-policy questions raised by the human applications of genetic research. Specific course objectives are the following:

1. To provide a brief introduction to molecular biology, recombinant DNA research, and human genetics.

2. To examine proposals to map, then sequence, the human genome and the possible implications of such proposals.

3. To evaluate current and future approaches to genetic testing and screening, with special attention to the problems that may arise with presymptomatic genetic screening.

4. To investigate the normative and other philosophical questions that may surround attempts to perform somatic-cell and germ-line gene therapy and the enhancement of human capabilities by genetic means.

OVERVIEW

Class 1:	January 14	Introduction
Class 2:	January 21	Overview of "The New Genetics”; Basic Molecular Biology: Part I
Class 3:	January 28	Basic Molecular Biology: Part II
Class 4:	February 4	Gene Mapping: Part I
Class 5:	February 11	Gene Mapping: Part II
Class 6:	February 18	Genetic Testing and Screening: Part I
Class 7:	February 25	Genetic Testing and Screening: Part II
Class 8:	March 4	Genetic Testing and Screening: Part III

Spring Vacation

Class 9:	March 18	Genetic Testing and Screening: Part IV
Class 10:	March 25	Gene Therapy and Genetic Engineering: Part I
Class 11:	April 1	Gene Therapy and Genetic Engineering: Part II
Class 12:	April 8	Gene Therapy and Genetic Engineering: Part III
Class 13:	April 15	Gene Therapy and Genetic Engineering: Part IV
Class 14:	April 22	Gene Therapy and Genetic Engineering: Part V
Class 15:	April 29	Synthesis

TEXTBOOKS

Friedman, Theodore. Gene Therapy: Fact and Fiction. Long Island, N.Y.: Cold Spring Harbor Laboratory, 1983.

Glover, Jonathan. What Sort of People Should There Be? Genetic Engineering, Brain Control and Their Impact on Our Future World. New York: Penguin Books, 1984.

Pines, Maya. The New Human Genetics: How Gene Splicing Helps Researchers Fight Inherited Disease. Bethesda, Md.: National Institute of General Medical Sciences, September 1984.

U.S., Congress, Office of Technology Assessment. Human Gene Therapy: Background Paper. Washington, D.C.: OTA, December 1984.

U.S., President's Commission for the Study of Ethical Problems in Medicine and Biomedical and Behavioral Research. Screening and Counseling for Genetic Conditions: The Ethical, Social, and Legal Implications of Genetic Screening, Counseling, and Education Programs. Washington, D.C.: U.S. Government Printing Office, February 1983.

-------. Splicing Life: The Social and Ethical Issues of Genetic Engineering with Human Beings. Washington, D.C.: U.S. Government Printing Office, November 1982.

Watson, James D.; Tooze, John; and Kurtz, David T. Recombinant DNA: A Short Course. New York: W.H. Freeman and Company, 1983.

ASSIGNED READINGS

Class 2 (January 21): Overview of the "New Human Genetics"; Basic Molecular Biology: Part I.

Watson, Tooze, and Kurtz, Recombinant DNA: A Short Course, chaps. 1-2.

Class 3 (January 28): Basic Molecular Biology: Part II

Watson, Tooze, and Kurtz, Recombinant DNA: A Short Course, chaps. 3-7, 15-17.

Class 4 (February 4): Gene Mapping: Part I

Review Pines, The New Human Genetics, pp. 36-52, and Watson, Tooze, and Kurtz, pp. 219-225.

"The Human Genome: Briefing Material," prepared by the Office of James B. Wyngaarden, M.D., Director, National Institutes of Health, Part II, Documents C, E, F, G, H, I, J, Q, and T.

Class 5 (February 11): Gene Mapping: Part II

U.S., Congress, Office of Technology Assessment, Biological Applications Program, "Proposal for an OTA Assessment of Mapping the Human Genome."

Victor A. McKusick, Mendelian Inheritance in Man (7th ed., Baltimore: Johns Hopkins University Press, 1986), skim pp. xxxix-lxxxi ("Appendix B: The Human Gene Map").

*Guest speaker possible.

Class 6 (February 18): Genetic Testing and Screening: Part I

Review Pines, The New Human Genetics, pp. 25-35.

U.S., President's Commission, Splicing Life, pp. 38-41.

U.S., President's Commission, Screening and Counseling for Genetic Conditions, pp. 1-39, 109-115.

Class 7 (February 25): Genetic Testing and Screening: Part II

U.S., President's Commission, Screening and Counseling for Genetic Conditions, pp. 41-104.

Lori B. Andrews, "The Reach and Substance of State Newborn Screening Laws" and "Sickle Cell Screening Laws and Regulations," in Lori B. Andrews, comp., State Laws and Regulations Governing Newborn Screening (Chicago: American Bar Foundation, 1985), pp. 1-18, 147-155.

Class 8 (March 4): Genetic Testing and Screening: Part III

Robert Steinbrook, "In California, Voluntary Mass Prenata1 Screening," Hastings Center Report 16(5): 5-7; October 1986.

Mitchel L. Zoler, "Genetic Tests Creating a Deluge of Dilemmas," Medical World News, 22 September 1986, pp. 34-52.

Gina Kolata, "Genetic Screening Raises Questions for Employers and Insurers," Science 232(4748): 317-319; 18 April 1986.

*Site visit or guest speaker possible.

Spring Vacation (March 11)

Class 9 (March 18): Genetic Testing and Screening: Part IV

U.S., Congress, Office of Technology Assessment, Health Program, "Applications of Biotechnology to Test for Human Genetic Disorders" (confidential draft, July 1986).

*Site visit or guest speaker possible.

Class 10 (March 25): Gene Therapy and Genetic Engineering: Part I

Review Pines, The New Human Genetics, pp. 53-55.

U.S., President's Commission, Splicing Life, entire book.

Class 11 (April 1): Gene Therapy and Genetic Engineering: Part II

Friedmann, Gene Therapy: Fact and Fiction, entire book.

Class 12 (April 8): Gene Therapy and Genetic Engineering: Part III

U.S., Congress, Office of Technology Assessment: Human Gene Therapy, Background Paper, entire work.

Robertson Parkman, "The Application of Bone Marrow Transplantation to the Treatment of Genetic Disease," Science 232(4756): 1373-1378; 13 June 1986.

Class 13 (April 15): Gene Therapy and Genetic Engineering: Part IV

Glover, What Sort of People Should There Be?, chaps.1-3, 11-14.

Gina Kolata, "New Growth Industry in Human Growth Hormone?" Science 234(4772): 22-24, 3 October 1986.

Class 14 (April 22): Gene Therapy and Genetic Engineering: Part V

LeRoy Walters, "The Ethics of Human Gene Therapy," Nature 320(6059): 225-227; 20 March 1986.

National Institutes of Health, Recombinant DNA Advisory Committee, Human Gene Therapy Subcommittee, "Points to Consider in the Design and Submission of Human Somatic-Cell Gene Therapy Protocols," revision of 29 September 1986.

*Site visit or guest speaker possible.

Class 15 (April 29): Synthesis

LeRoy Walters, "Genetics and Reproductive Technologies," to be published in a textbook, tentatively entitled Medical Ethics, edited by Robert M. Veatch (Boston: Jones and Bartlett, forthcoming).

*Discretionary activities in the course.

COURSE REQUIREMENTS

Students are requested to read all assigned books and articles in advance of the class for which they are assigned and to participate actively in class discussion. This facet of each student's work will constitute 25% of the final grade.

There will be three written assignments in this course. The first will be a five-page paper on "Why Human Genetics Is (or Is Not) an Important Topic of Study for the Field of Bioethics." The term "human genetics" should be construed broadly enough to encompass all of the issues discussed in this course plus any others mutually agreed upon by student and instructor. The first paper is due on Wednesday, February 18th. The grade on this paper will constitute 15% of the final grade.

The second paper will be a 10- to 12-page paper on one or more ethical issues in genetic testing or genetic screening. Possible topics include:

The prenatal diagnosis of genetic disorders
The screening of newborn infants for genetic disorders
Maternal serum alpha-fetoprotein screening
Genetic testing and access to health insurance
Genetic screening in the workplace
Presymptomatic genetic testing, e.g., for Huntington's chorea

The paper should demonstrate the student's appropriation of assigned readings and class discussions. It should be primarily critical and analytical; factual description should be employed only to the extent necessary to provide a backdrop for your critical analysis or argument of a thesis. This second paper is due on Wednesday, April 1st. The grade on this paper will constitute 30% of the final grade.

The third paper will be a 10- to 12-page paper on one or more ehtical questions related to human gene therapy or human genetic engineering. Possible topics include:

The case for (or against) human somatic-cell gene therapy
The case for (or against) human germ-line gene therapy
Should human capabilities be enhanced by genetic means. if such change becomes technically feasible?

Again, this paper should be primarily critical and analytical rather than merely descriptive. This final paper is due on Wednesday, May 13th, during the examination period. The grade on this paper will constitute 30% of the final grade.

Students are requested to submit written assignments on time. Five percent will be deducted from the grade of the paper for each day that passes between the deadline for submission and the date of submission. Extensions will be granted only for grave reasons like a death in the family and should be requested in a timely fashion. These rather stringent rules on deadlines are not intended to be punitive but are intended, rather, to facilitate grading and to provide equal time to all students in the preparation of papers.