SEMINAR IN NEUROETHICS : FRS 167

*About the Subject*

 Neuroethics is the study of ethical, social, and political issues arising from discoveries in neuroscience. Among the questions we may consider are: Can drugs make us happier or smarter? When does consciousness start in the animal kingdom and end from injury or disease? Can thoughts and lies be imaged? How does neuroscience impact on ethical and legal responsibility? Does ethics have a neural bases? What types of experiments should be allowed on humans and animals? When does ethical behavior in evolution? What are the brain differences between males and females and between straight and gay people and what are their origins and relevance? What happened to psychosurgery? To eugenics? How common is cheating in science? How has neuroscience supported sexism and racism, at least in the past?

*About the Professor*

Most of my laboratory research has been in cognitive neuroscience, especially the neurophysiology of visual pattern recognition as well as topics in learning and memory and adult neurogenesis. I also write on the history of neuroscience and research ethics. I have taught this course occasionally over the last ten years at Princeton University and most recently at New York University and University of California at Berkeley.

 I can be reached best at cggross@princeton.edu. My office is rm. 280 in the Princeton Neuroscience Institute. I have office hours after class and by appointment.

*About the Time and Place*

 Tuesday 1:30-4:20; in room A30 Princeton Neuroscience Institute

*About the Course Format*

 Starting in the fifth week, the most important part of the course will be student oral reports. Each student will present *one* 50” report on a topic chosen from the list given below. It will usually involve both a review of the relevant science and a consideration of the ethical issues. Two reports in each three-hour session will leave time for discussion, questions, historical and scientific background material and occasionally visitors

*About Reading, Writing and Grades*

 For most of the term the required reading will be a brief article introducing each of the oral reports available on the course website.
There will be a term paper (about 15 pages and on any neuroethics topic).
and a take home exercise (consisting of a few short essays, 1-2 pages each) on the material covered in class and the reading. There will be occasional brief writing assignments. There will be no exams.

 In advance of each class I will post the required reading, thinking or writing and a rough outline of what we will cover under *syllabus* on Blackboard (BB). After each class I will post any slides I showed as will the student reporters.

Grades:

 Oral Report, 40%

Term Paper, 40%

Take-Home Exercise, 10%

Brief class assignments and class participation, 10%

*Oral Report Topics*

 Please e-mail me your first four choices for your oral report topic from the following list **by the night of the second class** and I will try to distribute the topics by the third class.In the first class I will briefly describe each topic and you might want to look up the topics of interest to you on pub med, googol or elsewhere and discuss them with me before making your choices. The reports will be scheduled in the approximate order listed, starting in the fifth week of term. Reports 1, 2 and 3 will receive an automatic grade upgrade since they come earliest in the term.

*Preparation of Report*

 After you choose your topic I can help you with sources, discuss content and organization and go over your outlines. In any case, we should go over your Power Point Slides together no less than a week before your presentation time. The week after your report you should post your report on Blackboard along with an annotated bibliography of important sources.

*Possible subjects for 50’ oral presentations (in approximate order*)

*Drugs*

1. ADHD: over diagnosed and over treated in children?

2. Cognitive enhancement of attention and memory in adults (including students).

3. Oxytocin; love potion or snake oil?

4. Ethical problems of Big Pharma (Cf. Angell, *The Truth about Drug Companies)*

*Sex*

5. How (and why) are the brains of women and men different and what difference does that make?

6. How (and why) are the brains of homosexuals and heterosexual different?

7.Origins and neural bases of transsexualism

*Imaging*

8. Can imaging be used as a lie detector?

*Racism and Sexism*

9. How has neuroscience (or biology generally) been used to justify racism, at least in the past?

10. How has neuroscience (or biology generally) been used to justify sexism, at least in the past?

*Life and Death*

11. Awareness in the “vegetative or locked-in state”

12. If the brain determines behavior, where does that leave the justice system?

*Development*

13. Is the teen brain different: social, educational, legal implications

14. Should football and similar sports be banned because of the risk of brain injury?

15. Cochlear implants vs. deaf activists

*Psychosurgery*

16. In the past

17. Today (including deep brain stimulation and transcranial stimulation)

*Genes*

18. The old “eugenics”

19. Genes today: screening and fixing (CRISPR-Cas9): methods and ethics

*Ethical Behavior*

 20. Neural mechanisms of ethical behavior

 21. Evolution of morality (morality in animals)

*Course Calendar and Deadlines*

Sept. 29 Submit four choices for oral report

Oct. 20 Student reports start

Oct. 27 Submit proposed term paper topic

Dec. 15 Submit draft of term paper (optional)

Jan. 5 Final draft of term paper due

Jan. 15 Take home exercise due

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*Syllabus and Reading*

Week 1 (Sept. 22) Introduction

 Introductions

 What is *Neuroethics?*

 Course customs and mechanics

 Oral Report Topics

 Visit by Librarian Neil Nero

 *Please think about you're your choice of oral report topic and feel free to discuss it with me after class, by e-mail or by apointment*

Week 2 (Jan. 27) Scientific Misconduct

 Scientific Misconduct In The Past

 Origins of U.S. Government Involvement

 Incidence of Misconduct Today

 Who are the Miscreants?

 Prevention of Scientific Misconduct

 *The Lab: An Interactive Film*

 *Reading*

C. G. Gross, Disgrace: On Marc Hauser *The Nation*, Jan. 9/16, 2012, pp. 25-32.

 *Optional reading*

 C. G.Gross, Scientific Misconduct, *Ann.Rev. Psychol,* 2015, *in press*

 *Submit your top four oral report choices by midnight*

Week 3 (Feb. 3) Research on animals

 Attitudes towards animals in history

 Origins of the anti-vivisection movement

 Consciousness and self-consciousness in animals

 Regulation of animal research today in the U.S.

.  What is the justification for basic research on animals?

 *Reading & Writing*

Shamoo, A.E. and Resnik, D.B. *Responsible Conduct of Research* (Oxford: Oxford University Press, 2003), chap. 10. And be prepared to answer questions 1,2,6 & 7

 Singer, P. All animals are equal. In: T. Regan & P. Singer .Eds.). *Animal Rights and Human Obligations*. 2nd Ed. (Englewood Cliffs, NJ: Prentice Hall, 1989) pp. 73-86.

 What is your attitude toward experiments on a) rats, b) monkeys and c) apes that are 1) invasive and 2) those that are non-invasive for basic, for “translational” or for medical research? Please bring about one page total to class on these questions

 If you need reading on the justification of the use of animals in medical research see http://www.fbresearch.org/Education/index.htm

 *Viewing:*

 If you have never seen the film *Project Nim* I urge you too see it and we will discuss it in class. This entire film can be can be found on Tube

Week 4 Research on humans (Feb. 10)

Regulation of research on humans from Alexandria (2nd C. BCE) to

 Nuremberg

 Tuskegee

 Belmont report

 Today

Milgram's experiments and their critique

The Stanford Prison Experiments

Who are the subjects for drug studies here and abroad?

What are the problems with informed consent?

*Viewing (especially if these studies are unfamiliar):*

Film clip on Milgram’s obedience study:

http://www.youtube.com/watch?v=fCVlI-\_4GZ

Film clip on Stanford Prison study

http://www.youtube.com/watch?v=sZwfNs1pqG0

Week 5: Student Reports Begin: Reading List will be circulated