PHIL/APPH 6710: Ethics of Biotechnology and Bioengineering Research – **Spring Semester 2017**

Instructors: Dr. Jason Borenstein, Dr. Ayanna Howard, and Dr. Richard Nichols
Meeting Time and Location: TBD

Course Description: This course examines the ethics of biotechnological research, including issues in the realm of research ethics, bioethics, and healthcare robotics. The course satisfies the RCR Academic Policy's "in-person" training requirement for doctoral students (note: laboratory safety is not covered in this course). If you need to complete the online CITI RCR training, refer to: http://www.rcr.gatech.edu/online-training/

Learning Objectives: By the end of the course, each student should be able to:
- Identify and discuss key concepts in the realm of research ethics.
- Discuss and apply several key ethical theories, including Utilitarianism and Kant's view.
- Describe key ethical issues related to the development and use of biotechnology.
- Describe key ethical issues related to the development and use of robots in health care settings.

Required Readings:
- Presentation slides and articles placed on T-square or from the Internet

Grading:
(I) Attendance - Each student is required to attend consistently, which will comprise 10% of a student's final grade. More than one unexcused absence will result in a failing grade for the course. If a student has to miss a class, the student must contact the instructors *prior to the day of the absence* (unless the absence is due to illness) so that the instructors can determine whether it will be considered excused. For an absence to be considered excused, the student must provide proper documentation within one week of returning to class (for example, a physician's note for an illness).

(II) Group Presentation - Each student is required to make a roughly equal contribution to a group presentation. The presentation will comprise 40% of a student's final grade. Each group should have ~5 members. The presentation should be ~20 minutes and then a Q&A session will follow. ***Original work is required***; using someone else's work or one's previous work will result in a failing grade.

In order for a presentation to be considered satisfactory, the group must effectively:
(1) organize the presentation in a clear and logical fashion;
(2) identify and discuss different stakeholder perspectives on the issue;
(3) identify and apply ethical principles that can be used to help resolve the issue;
(4) discuss historical precedent from similar cases;
(5) articulate and defend the group's solution; and
(6) answer questions from the class about the presentation.

Each of the six above criteria will be evaluated on a scale from 1 (unacceptable) to 10 (excellent).

(III) Group Abstract - The groups will have two class sessions to prepare for the presentation. **However, the groups must perform research on their topic prior to these sessions so that they can accomplish the presentation objectives**. By the end of the second preparation session, the group must submit a preliminary presentation abstract (~150-200 words), which will comprise 10% of a student's final grade.

(IV) Seminar Series and Reaction Papers – Each student is required to attend a series of eight campus seminars (for example, from IRIM, BBUGS, etc.) and then after each seminar, the student will have to write a short response paper (~200-250 words) that discusses the ethical issues related to the seminar's content. Each paper will comprise 5% of a student's final grade (40% in total).

Academic Integrity and Student Rights & Responsibilities: Each student in the course is expected to familiarize themselves with and uphold Georgia Tech's Honor Code and Student Code of Conduct. A list of student and faculty expectations is also available in the GT Catalog. If you have any questions or concerns relating to these policies, refer to the relevant websites or consult with the instructor.

* The syllabus provides a general framework for the course; on rare occasions, changes may become necessary.

** If you have any learning disabilities, contact the Office of Disability Services at (404) 894-2563, refer to http://disabilityservices.gatech.edu/, and/or consult with the instructor as needed.

*** If you have any personal or academic difficulties, contact the Counseling Center at (404) 894-2575, refer to http://www.counseling.gatech.edu, and/or consult with the instructor as needed.

Course Schedule and Topics

- Week 1: Course Overview, Presentation Instructions, and Ethical Theory
  Readings: excerpt from Pence's *Medical Ethics*

- Week 2: Ethical Evaluation of Biotechnology
  Readings: TBD

- Week 3: Mentoring, Collaborative Research, and Authorship
  Readings: T-square slides

- Week 4: Peer Review, Conflicts of Interest, and Research Misconduct
  Readings: T-square slides

- Week 5: Science and Engineering in Society
  Readings: Kass's *Beyond Therapy*

- Week 6: Animal Subjects Research
  Readings: T-square slides and Vance's article on "Animal Liberation/Rights Movement"

- Week 7: Human Subjects Research
  Readings: T-square slides

- Week 8: Robots and Ethics
  Readings: Sparrows' "In the Hands of Machines? The Future of Aged Care"

- Week 9: Robots and Ethics (continued)
  Readings: Borenstein and Pearson's "Robot Caregivers: Harbingers of Expanded Freedom for All?"

- Week 10: Group Meeting Time

- Week 11: Group Meeting Time

- Week 12: Student Presentations

- Week 13: Student Presentations

- Week 14: Student Presentations