THE ETHICAL DIMENSIONS OF THE BIOMEDICAL SCIENCES
GS 211051

2018 Syllabus

THE ETHICAL DIMENSIONS OF THE BIOMEDICAL SCIENCES
GS 211051

Dates & Time: Fall 2018 (August 30 – November 39)
Thursdays, 11:15 a.m. – 12:30 p.m. **or** 1:00 p.m. – 2:15 p.m.

Location: **August 30**: Onstead Auditorium, Basic Sciences Research Bldg. (BSRB), Third Floor, 6767 Bertner (next to The Commons). There are 2 entrances to Onstead Auditorium: S3.8012 and S3.8013.

September 6 – November 15: Various classrooms in BRSB and UTMSH and MDA.

November 30: Onstead Auditorium, Basic Sciences Research Bldg. (BSRB),

Course Schedule: August 30: 11:15 a.m – 12:30 p.m. Organizational meeting with pre-test
September 9 – November 15: 11:15 a.m. – 12:30 p.m. **or** 1:00 p.m. – 2:15 p.m. (Small group sessions)
November 29: 11:15 a.m. – 12:30 p.m. – post-test

Course Directors: Rebecca Lunstroth, JD
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MSE R329
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Teaching Assistant: Jared Henderson
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Description:
This course is a systematic overview of the ethical concepts and traditions that are the foundation of biomedical science. The aim of the course is to provide students of the biomedical sciences with a framework to recognize, examine, and resolve ethical issues that may arise in their professional lives. These concepts will be examined through **facilitated small group discussions** of cases and exercises that involve ethical issues in the responsible conduct of biomedical research. Students will prepare to participate in these small group discussions by completing required reading assignments.

Objectives:
Upon successfully completing this class, students will be able to: 1) recognize the primary features of an ethical problem in science and research; 2) identify and analyze questions central to the specific ethical problems in science and research addressed in this course; 3) identify

relevant professional and legal guidelines on the ethical issues addressed in this course; 4) formulate recommendations for preventing and/or resolving ethical conflict in specific areas of science and research; and 5) identify the appropriate institutional resources for addressing questions related to ethics in research and graduate education.

Reading Assignments:

The majority of reading assignments will be from *ORI Introduction to the Responsible Conduct of Research* by Nicholas H. Steneck, published by the Office of Research Integrity. This will be supplemented by institutional policies and procedures. In the last two sessions we will be using articles. Chapter assignments from Steneck, institutional policies and all articles will be posted on the Canvas course site. The entire Steneck document can be downloaded from http://ori.dhhs.gov/documents/rcrintro.pdf. Each week's reading assignments will be the entire chapter(s), related cases and exercises corresponding to the title of the weekly topic and any relative institutional policies. Students are expected to come to class prepared to discuss all the readings for the week, including the case examples in the textbook. **A quiz will be administered through Canvas prior to each small group session to assess the student's mastery of the content of the reading assignments**. The weekly quizzes can be found under the 'Quizzes' tab (on the left) in Canvas. They will be **made available at noon each Tuesday**. Each quiz will have a 15-minute time limit and must be completed once started. Additionally, each student will be expected to present two (2) cases for discussion during the course of the semester and lead the discussion of these cases in the small groups.

Evaluation:

This class is graded on a Pass/Fail basis. In order for a student **to obtain a Pass grade, the student must**:

- **attend and participate in all small group sessions**
- **maintain a 70% cumulative average on the quizzes**
- **complete *The Brewsters* and multiple-choice pre- and post-test administered through Canvas by required deadlines (see above)**
- **complete the pre-test administered in class on August 30 AND the post-test administered in class on November 29.**

Attendance is required at your assigned discussion group. **Students must attend class in order to receive a quiz grade. Any unexcused absence will receive a grade of "0" for the session's quiz.** The decision as to whether an absence is excused or not excused resides with the Course Directors. Students should contact their facilitator and copy Dr. Cunha to request an excused

absence in advance. Students with excused absences will have the opportunity to make up the session.

Students with disabilities who need related accommodation to participate fully in the course are requested to contact Rebecca Lunstroth as early as possible in the semester so that appropriate arrangements may be made.

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FALL 2018 Schedule
Thursdays 11:15 a.m.-12:30 p.m. **or** 1:00 – 2:15

Date	Topic	Assignment*	Cases
8/30/2018	Organizational Meeting Pre-test	*The Brewsters*	
9/6/2018	How to present a case	Chapter 1	Case #1 Discussion of *The Brewsters*
9/13/2018	Scientific Integrity & Research Misconduct	Chapter 2	Case #2 Plagiarism Exercise
9/20/2018	Research with Human Subjects	Chapter 3	Case #3 Case #4
9/27/2018	Humane Care & Use of Animals in Research	Chapter 4	Case #5 Exercise
10/4/2018	Management of Scientific Data	Chapter 6	Case #6 Case #7
10/11/2018	Mentor and Trainee Responsibilities	Chapter 7	Case #8 Exercise
10/18/2018	Collaborative Research Peer Review	Chapter 8 Chapter 10	Case #9 Case #10
10/25/2018	Conflicts of Interest	Chapter 5	Case #11 Exercise
11/1/2018	Authorship	Chapter 9	Case #12 Exercise
11/8/2018	Biosafety & Biosecurity	3 journal articles (on Canvas)	Case #13 Case #14
11/15/2018	Genetics, Cloning, Stem cell research	2 articles (on Canvas	Case #15 Exercise
11/22/2018	*No Class*		
11/29/2018	Post-test		

* Chapter assignments from N.H. Steneck, *ORI Introduction to the Responsible Conduct of Research*, Department of Health and Human Services, 2007

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Faculty Discussion Group Leaders

Arzu Ul, PhD Instructor Department of Integrative Biology and Pharmacology UTHealth Medical School Arzu.Ulu@uth.tmc.edu	Timothy Houk , PhD Post Doc McGovern Center for Ethics and Humanities UTHealth Medical School tjhouk@ucdavis.edu
Askar Akimzhanov, PhD Assistant Professor Department of Biochemistry and Molecular Biology UTHealth Medical School glopez@mdanderson.org	Jake Chen, PhD Assistant Professor Department of Biochemistry and Molecular Biology UTHealth Medical School Zheng.Chen.1@uth.tmc.edu
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Diane G. Edmondson, PhD Assistant Professor Department of Pathology and Laboratory Medicine UTHealth Medical School Diane.G.Edmondson@uth.tmc.edu	Vicki Huff, PhD Professor, Department of Genetics UT-MDACC vhuff@mdacc.tmc.edu
Richard J. Kulmacz, PhD Professor Department of Internal Medicine-Hematology UTHealth Medical School Richard.J.Kulmacz@uth.tmc.edu	Rebecca Lunstroth, JD, MA Assistant Professor and Associate Director McGovern Center for Ethics and Humanities UTHealth Medical School Rebecca.Lunstroth@uth.tmc.edu
Sujatha Sridhar, MBBS, MCE Executive Director Research Compliance, Education, and Support Services	Melinda S. Yates, Ph.D. Assistant Professor Gynecologic Oncology and Reproductive Medicine

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Joe Alcorn, PhD Associate Professor Department of Pediatrics UTHealth Medical School Joseph.L.Alcorn@uth.tmc.edu	

HOW TO REASON THROUGH AN ETHICAL DILEMMA

This course is about how you move from dilemma to action without falling into a situation that you do not want. This is a very brief description of how real people work through an ethical dilemma and is intended for novice students of science and ethics. As you move through your career you may find more elegant, more detailed, more relevant or more concise processes for facing these important issues. This is not intended to be a one-size-fits-all roadmap, but rather a guide to prompt your own thinking on these issues:

1. What are the facts or circumstances in the case that are relevant to the issue? Get all the facts that you have access to, and don't forget that all sorts of things can matter. For example: "Steven is under pressure to get the research done and the money would help with supplies. He also has an assistant who needs more help with her experiments and the money would let Steven hire another lab hand." You get the idea - all the facts could be relevant. Ignoring the facts and context can lead to poor decisions.

2. What information do you lack? You may find that you would like more information than you currently have. This will guide you to ask questions that would lead to a more appropriate decision. What do you need to know? Who has the information? Why would it make a difference? For example: "It would help if we knew whether the company offering the money is expecting anything in return. Do they want Steven to get a certain result that makes the company's product look good? Does the company just want to do a good deed and support a worthy young researcher?"

3. What are the ethical values to consider? In any course of action there will be different ways to look at a case. Intellectual freedom is an important scientific value, and Steven should probably not take any money if it will impair his intellectual freedom to publish negative results. Trust is also an important value, and perhaps Steven should take the money if the company will not try to control the results and he could use the money to verify his research results more accurately with the money. The ethical principles and values may weigh in different directions, but it is important to think of all the different ethical values that you can. See the document "Principles of Ethical Conduct in Research" (from page 28, Shamoo and Resnik [2009]).

4. Name the main ethical issue. State the problem as simply as you can. Start with a question: "Should Steven take the money from the company or not?" You can polish it up later, changing it to something more elegant, like "the main issue in this case is whether Steven should accept the company's money." But just get it stated. Simply.

5. Weigh the different values at stake and make a decision. Which of the values that you identified are the most important in this situation? For example: "Steven should take the money from the company because it will help him get better results that are verifiable and more accurate, it will help him complete his experiments on time and let him be more reliable, and it will ease the commitment to his assistant. However, this is only true if the company does not expect him to withhold results or get only the data they want." Be sure to state any assumptions - like the company is not going to try to control the science.

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CASE PRESENTATION WORKSHEET

STUDENT NAME:_____

What are the facts of the case?	The relevant facts of the case are:
What information do you lack?	It would be nice if I had more information about:
What is(are) the ethical issue(s) in the case?	The ethical issue(s) is(are):
What are the ethical principles/values you should consider?	The ethical principles/values brought out by this case are:
Weigh the ethical values and make a decision about what should be done – please respond to each of the questions posed by the case	Based on what you now know, what should be done?

You may attach additional pages if the room here is not sufficient

Principles of Ethical Conduct in Research (from A.E. Shamoo & D.B. Resnik, *Responsible Conduct of Research, 2nd Ed.,* Oxford University Press, 2009, p. 28-29)

1. *Honesty:* Honestly report data, results, methods and procedures, publication status, research contributions, and potential conflicts of interest. Do not fabricate, falsify, or misrepresent data in scientific communications, including grant proposals, reports, and publications (Pellegrino 1992, Resnik 1996a,b)

2. *Objectivity:* Strive for objectivity in experimental design, data analysis, data interpretation, peer review, personnel decisions, grant writing, expert testimony, and other aspects of research where objectivity is expected or required.

3. *Openness:* Share data, results, ideas, tools, materials, and resources. Be open to criticism and new ideas.

4. *Confidentiality:* Protect confidential communications, such as papers or grants submitted for publication, personnel records, business or military secrets, and records that identify individual research subjects or patients.

5. *Carefulness:* Avoid careless errors and negligence; carefully and critically examine your own work and the work of your peers. Keep good records of research activities, such as data collection, research design, consent forms, and correspondence with agencies or journals. Maintain and improve your own professional competence and expertise through lifelong education and learning; take steps to promote competence in science as a whole.

6. *Respect for colleagues:* Respect colleagues, students, and subordinates. Do not harm colleagues; treat them fairly. Do not discriminate against colleagues on the basis of sex, race, ethnicity, religion, or other characteristics not related to scientific qualifications. Help to educate, train, mentor, and advise the next generation of scientists.

7. *Respect for intellectual property:* Honor patents, copyrights, and other forms of intellectual property. Do not use unpublished data, methods, or results without permission. Give credit where credit is due. Do not plagiarize.

8. *Respect for the law:* Understand and comply with relevant laws and institutional policies.

9. *Respect for research subjects.* Show proper respect and care for animals when using them in research. Do not conduct unnecessary or poorly designed animal experiments. When conducting research on human subjects minimize harms and risks and maximize benefits; respect human dignity, privacy, and autonomy; take special precautions with vulnerable populations; and distribute fairly the benefits and burdens of research.

10. *Stewardship:* Make good use of human, financial, and technological resources. Take care of materials, tools, samples, and research sites.

11. *Social responsibility:* Promote good social consequences and prevent bad ones through research, consulting, expert testimony, public education, and advocacy.

12. *Freedom:* Research institutions and governments should not interfere with freedom of thought and inquiry.