

**Department of Philosophy
University of British Columbia**

**PHIL 337 001 Ethics for the Sciences
Winter 2020 Term 2 – January-April 2021**

SYLLABUS

Instructor: Professor Alison Wylie
Class meetings: M/W 4:00-5:30, Chem 124
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Course Description

Scientific research has an impact on all of us, and on every aspect of our lives. Most of us will be research subjects at one time or another; all of us are affected by science-based policies; our everyday-lives have been transformed by the results of scientific research – in good and bad ways. Scientific research raises ethics issues that have never been more pressing or more consequential than now. This course is designed to explore these issues, primarily with reference to the non-medical sciences. It is intended for students from across the social and natural sciences, as well as in Philosophy.

We will focus on three clusters of ethics issues that arise in, and are raised by, the non-medical sciences. First are the issues typically addressed by guidelines for the ‘responsible conduct of research’ (RCR): research integrity, professional conduct in training and collaboration, appropriate attributions of credit and authorship, safety and confidentiality. Second are issues of accountability for the social and environmental impacts of research. And the third are broader questions about the social values that are served by and embedded in scientific practice. The questions around which the syllabus is organized include:

- What counts as research misconduct? Outright fraud is clearly unacceptable, but what about more subtle forms of error and misrepresentation?
- Is it justified to put human or animal subjects at risk of harm in the name of science?
- What responsibility do scientists have for the impact of their research, including both positive and negative outcomes, as well as unintended and unforeseen consequences?
- Are there lines of inquiry scientists should not pursue?
- Should scientists play an active role in policy debates that are informed by or about their science?

We begin with a set of readings on the role of values in science and ethical obligations that are specific to the sciences; these will provide a framework for analyzing a selection of case studies that raise the questions noted above. The cases we will consider include high profile examples of fraud and error that have resulted in the retraction of a growing number of published results; controversy about ‘gain of function’ influenza research; longstanding debates about deception research in experimental psychology; and the challenges of meeting obligations to diverse stakeholders in archaeological and historical research. In the final section of the course we turn to current debates about the consequences of scientific progress and about science-based policy that raise broad questions about the role of scientists in society.

Texts: Kevin Elliott, *A Tapestry of values: An Introduction to Values in Science* (Oxford U Press, 2017). All other assigned readings will be available through library reserves and web links on Canvas.

Prerequisites: None

Exclusions: ISCI 433

Requirements at a glance (details will be posted on Canvas)

Participation:	10%
Concept work essay:	10%
Case study essay (15%) & group presentation (10%):	25%
Periodic quizzes (15%) & discussion posts (15%):	30%
Final Exam:	25%

TENTATIVE WEEKLY LECTURE AND READING SCHEDULE

- *Reading assignments (Reading), reading questions (RQ), and discussion preparation (D-Prep):* complete these before class on the day they are listed and come prepared to discuss them.
- *Supplementary readings:* these are optional background for the required readings.
- *Discussion posts – round-robin and reading responses (RR) –* must be posted by **5:00 pm** the evening before the class in which they will be discussed. If you address the reading questions (RQ) in your reading responses, but be sure to raise questions and issues of your own.

Week 1: Getting started

Class 1 – Introduction to the course

Class 2 – Science and ethics: what are the issues?

D-Prep: View the introduction and follow one story line in the video, [The Lab](#).

RR: Everyone post on this question: What is the most significant ethical issue raised by the science with which you are most familiar, and why is it an *ethical* issue?

Week 2: Ethical Theory

Class 1 – The ethos of science

Reading: Merton, “The Ethos of Science.” In *On Social Structure and Science* (Chicago, 1996/1942).

RQ: Does Merton’s account of the “moral compulsives” typical of scientific communities ring true for contemporary science?

Class 2 – Moral and ethical theory

Beauchamp, Walters, Kahn, Mastroiani, “Ethical Theory.” In *Contemporary Issues in Bioethics* (Wordsworth, 2008); focus on “Basic Concepts” (pp. 1-2) & “Moral Justification” (pp. 11-20).

Wylie, “On Ethics.” In *Ethical Issues in Archaeology* (Altamura, 2003), pp. 3-15.

D-Prep: Search out a definition of one of the moral theories described in these readings.

Week 3: Moral Reasoning

Class 1 – The toolkit

Readings: “Logic Concepts: A Brief Introduction” (handout)

Class 2 – Putting the tools to work

Readings: Beauchamp et. al; focus on “Moral Dilemmas” (pp. 4-7), and “Casuistry” (pp. 20-22).

D-Prep: How do you address moral issues when you face a hard decision? How does your process compare to those described in the *The Lab*, and in the Beauchamp et. al reading?

Sign-up for Case Study presentation groups under the groups tab on the Canvas “People” page by **Friday of Week 3**.

Week 4: Science and Social Values

Class 1 – The ‘value free ideal’

Readings: Elliott, “Introduction to Values in Science.” In *A Tapestry of Values* (Oxford 2017): 1-18.

Douglas, “Inductive Risk/Values in Science.” *Philosophy of Science* 67 (2000): 559-579.

RQ: What kinds of values concern Douglas, and what role(s) do they play in scientific research?

Class 2 – Working with values

Reading: Elliott, “How Should we Study?.” In *A Tapestry of Values* (Oxford, 2017), pp. 41-60.

Week 5: Ethics Standards and Guidelines

Class 1 – Guidelines for responsible conduct

Readings: Rotblat, “A Hippocratic Oath for Scientists.” *Science* 286 (1999): 1475.

Resnik, “Standards of Ethical Conduct in Science.” In *Ethics of Science* (Routledge 1998): 53-73.

Class 2 – Canadian framework for ethics review (CIHR, NSERC, SSHRC)

Readings: *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (2010): Chapters 1-4.

D-Prep/RQ: Search out one set of ethics guidelines for a professional science association of your choice. What range of issues and which standards of ethical conduct are a priority for this association? What do you find missing? How do they compare to the Tri-Council guidelines?

Week 6: “The Moral Terrain of Science”

Class 1 – The ethical bases for guidelines

Reading: Douglas, “The Moral Terrain of Science.” *Erkenntnis* (2014): 961-979.

Class 2 – Putting the framework to work

RQ: How does the society-specific code you reviewed compare with Douglas’ guidelines? Do her guidelines provide a rationale for the principles set out in that code?

CONCEPT WORK ESSAY DUE: 5:00 pm on Friday, Week 6 (online submission through Canvas)

Week 7: Research Integrity I: Fraud and Error

Class 1 – Varieties of misconduct in research

Readings: Macrina, “Responsible Conduct of Research.” In *Scientific Integrity* (ASM 2014): 1-21.

D-Prep: Review the Canadian *Tri-Agency Framework: Responsible Conduct of Research* (2016), [section 2](#).

Compare to the U.S. Office of Research Integrity on ‘[research misconduct](#)’.

Class 2 – Diederich Stapel’s audacious fraud

Reading: Bhattacharjee, “The Mind of a Con Man.” *New York Times*, 28 April 2013.

RQ: Who’s affected? Who’s responsible? What needs to change to prevent this kind of fraud?

Week 8: Research Integrity II: Publication

Class 1 – Credit, Authority, and Impact

Readings: Adam and Knight, “Publish, and be damned...” *Nature* 419 (2002): 772-77.

Lewontin, “Dishonesty In Science.” *New York Review of Books*, 18 November 2004).

Supplementary reading: Biagioli, “Recycling Texts: Plagiarism, Authorship, Credit in Science.” *IJCP* 19 (2012): 453-476.

Class 2 – H5N1 Gain of Function Research: To publish or not to publish?

Readings: Lipsitch & Galvani, “Ethical Alternatives to Experiments with Novel Potential Pandemic Pathogens.” *PLOS Medicine* 11.5 (2014).

Osterholme, M. T. (2012) ‘Letter to NIH Associate Director for Science Policy’ on Canvas.

D-Prep: Review the [H5N1 Controversy Timeline](#).

RQ: Should this research have been published? Revisit Douglas’ answer to this question.

Should it have been undertaken at all? How, and by whom, should such decisions be made?

Week 9: Human Subjects

Class 1 – The background

Readings: Pence, “The Tuskegee Study.” In *Classic Cases in Medical Ethics* (McGraw-Hill, 1995), pp. 394-401. Skloot, “The Immortal Life of Henrietta Lacks, the Sequel.”

New York Times, 23 March 2013.

Supplementary reading: Nuremberg Code (1947) & Declaration of Helsinki (1964):

[The Belmont Report](#).

D-PREP: Compare with the UBC ‘[Behavioral Research Ethics Board](#)’ (BREB) guidelines.

Class 2 – Deception research: The Milgram experiments

Readings: Bok, “Deceptive Social Science Research.” In *Lying* (Vintage, 1979), pp. 1982-202.

McArthur, “Good Ethics Can Sometimes Mean Better Science.” *Science and Engineering Ethics* 15 (2009): 69-79.

Supplementary reading: Baier, “Trust and Antitrust.” *Ethics* 96 (1986): 231-60.

D-Prep: Review one of the “Milgram Experiments” videos online - TBD.

RQ: Under what conditions is deception acceptable in research with human subjects? If you were on an ethics review board would you approve a Milgram-type experiment?

Week 10: Animal Subjects

Class 1 – Animal experimentation

Readings: Singer, “All Animals Are Equal.” In *Animal Rights and Human Obligations* (Prentice Hall, 1989).

Gruen, *Entangled Empathy: An Alternative Ethics for Our Relationships with Animals* (Lantern Books, 2015), selections TBD.

Class 2 – Environmental experimentation

Gluck, "Regretting My Animal Research." *New York Times*, 24 September 2016.

UAR, "[Animal Welfare & the Three Rs: Replacement, Refinement and Reduction](#)" (2011).

D-Prep: Compare these guidelines with the UBC training requirements for animal research:

<https://animalcare.ubc.ca/training>

Week 11: Science, Society and Social Responsibility

Class 1 – Scientists in society

Reading: Elliott, "What If We Are Uncertain?" In *A Tapestry of Values* (Oxford, 2017), pp. 83-110.

Ottinger, "Changing Knowledge, Local Knowledge & Knowledge Gaps." *STHM* 38(2012): 250-270.

Class 2 – Citizen science: collaborative practice in cultural heritage research

Readings: Wylie, "Community-based Collaborative Archaeology." In *Philosophy of Social Science*, eds. Cartwright & Montuschi (Oxford, 2014), pp. 68-82.

SSHRC "[Guidelines for the Merit Review of Indigenous Research](#)."

RQ: Is there scope for citizen or stakeholder involvement in the case study you presented this term? What difference might this make to the design, practice, and/or reporting of research in the case you considered?

Week 12: The Role of Scientists

Class 1 – Scientists and the public good

Readings: Beckwith and Huang, "Should We Make a Fuss?" *Nature Biotechnology* 23 (2005): 1479-1480. Physics & Astronomy Equity and Inclusion Group, "[Open Letter to SCOTUS](#)."

Class 2 – Policy and action

Reading: Elliott, "How Can We Engage Values?" In *A Tapestry of Values* (2017), pp. 137-162.

D-Prep: Preview online Oreskes, "The Scientist as Sentinel." [AAAS Plenary Address](#) (2017):

RQ: Should scientists play a role in debate about issues of public interest and policy? When should they do this, and how can they be most effective?

Week 13: Course wrap-up

Class 1 –The 'Moral Terrain' revisited: what now?

RR: Everyone post a response to this question: Revisit your answer to the first assigned reading response; what ethics issues do you now see as especially significant for science?

Identify one that you consider a top priority: how is it best addressed?

Class 2 – Final questions answered / review session

FINAL EXAM: TBD

Mandatory Syllabus Statement about UBC's Values and Policies

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious and cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available [here](#).