

## Science and Values

HPS 200, Fall 2017

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room: NF 003  
time: Mondays, 10:00am - 12:00pm  
instructor: Michael Miller  
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### Course overview

Science provides us with knowledge about the world: it provides us with the *facts*. According to many years of philosophical wisdom, since science determines the facts, the social, political, and economic context in which research is conducted is of little concern for understanding scientific knowledge. In recent years however, philosophers have argued that societal *values* do in fact play an important role in the development of new scientific knowledge. In this course we will explore how the social, political, and economic context in which scientific research is conducted influences the knowledge produced by scientific inquiry. The examples we will consider include climate change, nuclear technology, fundamental particle physics, disease research, psychiatry, p-Hacking, and the big data revolution, among others.

### Texts

The following texts are required for purchase and are available at the bookstore. All other required readings will be made available on the course website.

- Sarewitz, *Frontiers of Illusion*, Temple University Press.
- McNally, *What is Mental Illness?*, Harvard University Press.
- Oreskes and Conway, *Merchants of Doubt*, Bloomsbury Press.

### Assessment

You will be assessed on the basis of four Case Papers, each of approximately 750 words, and a final exam. Late work will not be accepted except in the case of documented exceptional circumstances. Detailed criteria for the evaluation of your writing will be discussed in class. Your final grade will be determined by the following weighting:

60%	case papers (15% each)
40%	final exam

## Class schedule

This schedule is subject to revision. An up-to-date schedule will be kept on the course website.

Date	Topic	Reading	HW Due
Sep 11	Introduction	None	Case One
Sep 18	Philosophical Background & Climate Change I	Rudner, Levi	
Sep 25	Inductive Risk & Climate Change II	Douglas, Oreskes & Conway	
Oct 2	Dangerous Knowledge & The Rise of Big Science	Lakoff, Bush	
Oct 9	Thanksgiving	No class	
Oct 16	Funding Basic Research	Sarewitz Ch. 1-2, Riordan	Case Two
Oct 23	Funding Disease Research	Sarewitz Ch. 3-4, Reiss & Kitcher, Flory & Kitcher	
Oct 30	Experts	Sarewitz Ch. 5-6, Douglas	
Nov 6	Reading Week	No Class	
Nov 13	Psychiatry I: Defining Mental Disorder	McNally Ch. 1-2, Wakefield	Case Three
Nov 20	Psychiatry II: Consequences of Diagnosis	McNally Ch. 5-6, 8, Wakefield	
Nov 27	New Challenges I: The Replication Crisis and p-Hacking	Baker, Head, Bruns	
Dec 4	New Challenges II: Big Data	Marr, Lazer, Lohr, Marcus	Case Four
Dec 7	Canadian Research in 2017 & Review	Duncan	
TBD	Final Exam	—	

## Academic integrity

The University of Toronto's [Code of Behaviour on Academic Matters](#) outlines the behaviours that constitute academic misconduct, the processes for addressing academic offences, and the penalties that may be imposed. You are expected to be familiar with the contents of this document. All suspected cases of academic dishonesty will be investigated following the procedures outlined in the Code of Behaviour on Academic Matters. If you have any questions about what is or is not permitted in this course, please do not hesitate to contact me.

## Accommodation for disabilities

Students with diverse learning styles and needs are welcome in this course. If you have a disability or health consideration that may require accommodations, please approach [Accessibility Services](#) as soon as possible at the beginning of the term. I will make every effort to make appropriate accommodations.