

## Schedule RES 500D: Navigating the divide between scientific practice and science studies

*Half the class is seminar/lecture and half workshop.*

<i>Date</i>	<i>Class</i>	<i>Literature*</i>
Sept 5 & 12	Your perception of what science is and how it is done	Collins and Pinch, 2012; Oberg and Campbell, 2019
Sept 19 & 26	What types of values do you believe have a place in science, if any?	Elliot, 2017; Douglas, 2015
Oct 3	The inductive gap & selection of case studies	Elliot, 2017; Douglas, 2015
Oct 10	Statistics, models, algorithms – why mathematical tools never are value-free	O'Neil, 2017
Oct 17 & 24	On vocabulary	Fleck 2012; Jasanoff, 2007; Schön, 2002
Oct 31 & Nov 7	Legitimate and illegitimate values: is it possible to distinguish between corrupt, faulty, unconsciously biased research from research that is impacted by legitimate values?	de Melo Martin & Intemann, 2018
Nov 14 & 21	Case-presentations	
Nov 28	Implications for my academic practice?	

*\*Books: students generally are assigned different chapters and present synopsis to the class*

### Literature

Collins, H. M. and T. Pinch (2012). *The golem: What you should know about science*, Cambridge University Press.

de Melo-Martín, I. and K. Intemann (2018). *The Fight Against Doubt: How to Bridge the Gap Between Scientists and the Public*, Oxford University Press.

Douglas, H. (2015). "Values in Science." *The Oxford Handbook of Philosophy of Science*.

Elliott, K. C. (2017). *A tapestry of values: an introduction to values in science*, Oxford University Press.

Fleck, L. (2012). *Genesis and development of a scientific fact*, University of Chicago Press.

Jasanoff, S. (2007). "Technologies of humility." *Nature* 450(7166): 33.

Mouat, I., A. Campbell, C. Donnelly and G. Oberg (2019). "Using a card game to teach the nature of science." in preparation.

O'Neil, C. (2017). *Weapons of math destruction: How big data increases inequality and threatens democracy*, Broadway Books.

Öberg, G. and A. Campbell (2019). "Navigating the divide between scientific practice and science studies to support undergraduate teaching of epistemic knowledge." *International Journal of Science Education* 2: 230-247.

Schön, D., A. (2002). *Generative metaphor: A perspective on problem-setting in social policy*. *Metaphor and thought*. A. Ortony, Cambridge University Press: 137-163.