PHIL750 (Philosophy of Science 2): Philosophy of Climate Science

Semester 1 2020

Meeting Times: Tuesdays 10am–12pm in Room 202, Building 206 (Humanities)
Coordinator: Emily Parke
Email: e.parke@auckland.ac.nz
Student drop-in hours: Tuesdays 12:30–2pm in my office (206.427); other times by appointment

Course Description

This course will focus on the philosophy of climate science. Climate change is at the forefront of public discussion, and raises critical ethical and political issues. While these will necessarily be part of our discussions, our main focus will be on topics in philosophy of science through the lens of climate science in the 21st century. We will examine questions such as: How do values and science interact? (How) is climate science special with regard to this interaction? How do climate scientists generate predictions, and infer causal relationships, using complex models and simulations? How should we understand and communicate about the probabilities and uncertainties involved? What factors contribute to public understanding of climate science (or lack thereof)? Students with scientific background are welcome, but no particular background in science will be assumed.

This is a discussion based course. Everyone will be expected to come to class having done the assigned readings at least once, and prepared to discuss them. In addition, everyone will take turns leading the class discussion. There is no textbook; all readings will be available electronically through Canvas > Reading Lists.

Assessment:

- **80%—5000-word Essay**: You are expected to meet with me throughout the semester to develop an original essay topic based on the course material.
- **5%—Essay draft and peer review**: You are expected to have at least a rough draft of your essay ready by week 12, and to participate in (blind) peer reviewing of each others' drafts.
- **15%—Presentations**: Students will be responsible for leading the class discussion twice during the semester. This means you will prepare a short presentation outlining key points from the relevant reading(s) and guiding our group's discussion with questions and other points of interest. It does not mean that you are expected to become an expert in the relevant week's topic, or have all the answers to questions about it.

Topics and Readings:

Note to students: I suggest reading the papers in the order listed (often, but not always, the second one builds on or responds to the argument in the first one).

Week 1 (3 March): Introduction

— Wendy Parker, "Climate science" (2018)

Climate modelling

Week 2 (10 March): Confirmation and complexity in climate modelling

— Elisabeth Lloyd, "Confirmation and robustness of climate models" (2010)
— Lachlan Walmsley, "The strategy of model building in climate science" (2020)

Week 3 (17 March): Pluralism in climate modelling

— Wendy Parker, "Understanding pluralism in climate modelling" (2006)
— Johannes Lenhard and Eric Winsberg, "Holism, entrenchment, and the future of climate model pluralism" (2010)

Uncertainty, decision making, and values in climate science

Week 4 (24 March): Uncertainty

— Kostas Kampourakis and Kevin McCain, "Uncertainty in science: isn't it a problem?"
— Kostas Kampourakis and Kevin McCain, "Uncertainty in climate science"
(Chapters 3 and 6 of *Uncertainty: how it makes science advance* (2019))

Week 5 (31 March): Decision making

— Richard Bradley and Katie Steele, "Making climate decisions" (2015)
— Richard Bradley, Casey Helgeson, and Brian Hill, "Climate change assessments: confidence, probability, and decision" (2017)

Week 6 (7 April): Values in science

— Heather Douglas, "Inductive risk and values in science" (2000)
— Katie Steele, "The scientist qua policy advisor makes value judgments" (2012)

*** **Mid-Semester Break** ***

Week 7 (28 April): Values in climate science

— Eric Winsberg, "Values and uncertainties in the predictions of global climate models" (2012)
— Wendy Parker, "Values and uncertainties in climate prediction, revisited" (2014)

Public understanding, communication, and climate skepticism

Week 8 (5 May): Public understanding of climate science

— Dan Kahan, "Climate-science communication and the measurement problem" (2015)
— Karen Kovaka, "Climate change denial and beliefs about science" (2019)

Week 9 (12 May): Climate skepticism and denial

— Justin Biddle and Anna Leuschner, "Climate skepticism and the manufacture of doubt: can dissent in science be epistemically detrimental?" (2015)
— Jay Odenbaugh, "On the contrary: how to think about climate skepticism" (2017)

Student choice topics

Week 10 (19 May): Climate skepticism and denial part 2

— Anthony Leiserowitz et al., "Climategate, public opinion, and the loss of trust" (2012)
— Anna Leuschner, "Is it appropriate to 'target' inappropriate dissent? on the normative consequences of climate skepticism" (2018)

Week 11 (26 May): Climate ethics

— Stephen Gardiner, "A perfect moral storm: climate change, intergenerational ethics, and the problem of corruption" (2010)
— Walter Sinnott-Armstrong, "It's not *my* fault: global warming and individual moral obligations" (2010)

Week 12 (2 June): Course wrap-up, essay discussion and peer review