

# PHIL W3551 Philosophy of Science

Instructor: Jenann Ismael, 706 Philosophy Hall



We are in the midst of an historical event that has brought science into the forefront of public attention in a way that it hasn't before in any of our lifetimes. The news gives us tidbits of developing science, and many people are pinning their hopes on the hope of a scientific salvation in the form of a vaccine, but we are also seeing challenges to the white-coated image of the pristine accuracy of science. We are learning of shifting opinions, new developments, evidence pointing in different directions and disagreeing assessments of prospects.

It's a good time to be asking questions like: Is science objective and worthy of trust? What distinguishes it from other forms of inquiry? What makes science authoritative? Why does it *work*? Is there such a thing as scientific method? What is scientific truth? Why are scientists so often wrong and why should we believe them? Should science lead policy? Should we listen to the scientists and just do what they say in matters of public health? Should we be free to disagree? What is the role of science in a democratic society? Is science as careful and clean and methodical as one sometimes seems portrayed, or is it a messy human enterprise as full of mistakes and false starts as it is of inspiration and creativity?

These are the kinds of questions that we will be looking at. We will look at the logic of scientific theories, the relationship between theory and evidence, the criteria that are employed by scientists in choosing between competing theories with a focus on the history of physics from its origins in Greek thought to the present day.

At the end of the class, you will be expected to write a research paper on a topic of your own choice, with my approval and expected to give a presentation associated with it to a subsection of the class. There will be leeway to explore a wide range of topics: e.g., What makes a discipline a science? Is economics a science? What about psychology? You can explore the powerful tradition of feminist critiques of science, issues surrounding scientific realism or the ways that Quantum Mechanics challenges traditional conceptions of scientific realism.

## Required Texts

- Richard Dewitt, *World Views: an Introduction to the History and Philosophy of Science*
- Thomas Kuhn: *The Structure of Scientific Revolutions*
- Philip Kitcher: *Science in a Democratic Society*

**Prerequisites:** One philosophy course or instructor's permission. The class will meet in person, if it proves feasible.