There was a time, not so long ago, when physics was part of natural philosophy. But now, physics seems to stand alone as the ultimate source of knowledge about the fundamental nature of reality. This course reconsiders what philosophy has to offer physics. We focus on two flash points in contemporary physics: the quantum measurement problem, and quantum non-locality. At these two points, philosophy strongly reasserts its ongoing relevance for physics, and for natural science more generally.

The course will be split into two six-week components. In the first six weeks, we will get up to speed on the conceptual problems in quantum theory, in particular, the measurement problem, entanglement, and the tension between quantum non-locality and relativistic causality. (Our textbook for this portion of the course: Richard Healey, *The Quantum Revolution in Philosophy*). In the second six weeks, we will have several guest lectures from leading physicists and philosophers, including:

- Adam Becker. Author of *What is Real? The Unfinished Quest for the Meaning of Quantum Physics*.
- Sean Carroll, CalTech. Author of NY Times Bestsellers: *Something Deeply Hidden, The Big Picture*, and *From Eternity to Here*
- Sheldon Goldstein, Rutgers Physics
- Juan Maldacena, Institute for Advanced Studies
- Jill North, Rutgers Philosophy
- Carlo Rovelli, Marseille. Author of NY Times Bestseller: *Seven Brief Lessons on Physics*.
- Herman Verlinde, Princeton Physics