State University of New York at Stony Brook
Department of Philosophy

Hugh J. Silverman Award Lecture

Delicia Kamins
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Lecture:

“An Aristotelian Consideration of the Problem of Motion and Measurement in Modern Physics”

Abstract: We expect “nature” as a whole to be logically accessible and consistently structured top-down and bottom-up. That is, there should be no ontological surprise between the logical structure of the world at the macro-level of natural experience (i.e., classical, or Newtonian mechanics) and the super micro-level (i.e., quantum mechanics). But there is a difference, putting the foundations of classical physics into question. In his effort to explain why quantum dynamics is so “foundation-shaking,” Werner Heisenberg evokes Aristotle’s notion of *dunamis* (i.e., potentiality), welcoming the use of philosophic traditions to contribute alongside scientists in addressing the questions: How do we deal with the impossible facts that quantum mechanics discloses about the world? And, more specifically, can we do so while preserving the historically developed account of ourselves as classically determined beings? As part of a larger project, which will examine the contributions of various philosophic traditions regarding these questions, this presentation will briefly extend Heisenberg’s appeal to Aristotle to examine how Aristotle’s view of movement between potentialities and actualities more aptly addresses the problem of motion and measurement in modern physics than even Heisenberg described.

Wednesday, May 8th, 2019
12:00-1:00
Harriman Hall, Room 249