



In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy

Michael J. Bernstein

Will defend his prospectus

Transitioning to Responsible Science and Technology Innovation: Sustainability Interventions in Education, Training, and Funding

Abstract

The relationship between society and science and technology is under constant negotiation. Some argue that science and technology enhance the material and physical well-being of society in unprecedented ways; some, while acknowledging these benefits, cite societal inequities and environmental degradation as indicators of a disconnect between societal progress and scientific and technological advancement. Scholars in this latter camp assert that scientific and technological advancement should be guided by responsibilities that strengthen connections to societal progress. These arguments for responsible research and innovation tie to normative objectives, such as those embodied by sustainability, and responsible practices, such as those embodied by anticipatory and adaptive governance. A range of work in science and technology studies informs visions of responsible innovation. Far less research has delved into the question of how to shift the innovation system to realize these visions.

In my research, I will investigate the following question related to implementing responsible innovation: How do upstream interventions in the capacity, motivation, or opportunities available to people involved in science and technology innovation shift the innovation process towards responsible practices and sustainable outcomes? My research will consist of three intervention studies. Study one will be an evaluation of the impacts of an existing intervention—a two-week intensive science and technology policy program for science and engineering PhD students. Studies two and three will pilot original interventions, respectively: a series of training workshops for engineers aspiring to work in community settings; and a series of workshops with various federal research program managers. Each intervention will demonstrate an approach to developing evidence-supported programs of intentional change for responsible innovation. The work will develop sustainability theory by demonstrating how sustainability intervention research integrates across disciplines to generate solutions-oriented knowledge. In closing, I

will discuss the implications of my work for science policies seeking to align technological advancement with societal progress.

Wednesday, April 23, 2014
10:00 am
Wrigley Hall, Room 481

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. Arnim Wiek, co-chair
Dr. Jameson Wetmore, co-chair
Dr. Marty Anderies, member
Dr. Nancy Grimm, member