



In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
Thaddeus Miller

Will defend his dissertation

**Constructing Sustainability:
A Study of Emerging Scientific Research Trajectories**

Abstract

How can science inform and foster social action for sustainability? This dissertation analyzes how the emerging field of sustainability science is grappling with this question. Based on in-depth interviews with leading researchers and a content analysis of the relevant literature, it first addresses three core questions: (1) how sustainability scientists define and bound sustainability; (2) how and why various research agendas are being constructed to address these notions of sustainability; (3) and how scientists see their research contributing to societal efforts to move towards sustainability. Based on these results, the project explores the tensions between scientific efforts to study and inform sustainability and social action with a focus on the power of science to constrain discourse and the institutional and epistemological contexts that link knowledge to societal outcomes.

Following this analysis, sustainability science is repositioned, borrowing Herbert Simon's concept, as a "science of design." A new set of objectives and design principles are proposed that would move the field towards a focus on outcomes and the enrichment of public reasoning and deliberation. Four new research streams that would situate sustainability science as a science of design are then discussed: creating desirable futures, socio-technical change, sustainability values, and social learning. The results serve as a foundation for a sustainability science that is evaluated based on its ability to frame sustainability problems and solutions in ways that make them amenable to democratic and pragmatic social action.

Wednesday, April 20, 2011

1:00 PM

Wrigley Hall (formerly GIOS) Room 201

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. Ben Minter (Chair)
Dr. Charles Redman (Member)
Dr. Daniel Sarewitz (Member)
Dr. Arnim Wiek (Member)