

In Partial Fulfillment of the Requirements for the Degree of

**Doctor of Philosophy**  
**Erin (Frisk) Redman**

Will defend her dissertation

**Development, Implementation, and Evaluation of Sustainability  
Education through the Integration of Behavioral Science into  
Pedagogy and Practice**

**Abstract**

For some time it has been recognized amongst researchers that individual and collective change should be the goal in educating for sustainability, unfortunately education has generally been ineffective in developing pro-environmental behaviors among students. Still, many scholars and practitioners are counting on education to lead us towards sustainability but suggest that in order to do so we must transition away from current information-intensive education methods. In order to develop and test novel sustainability education techniques, this research integrates pedagogical methods with psychological knowledge to target well-established sustainable behaviors. Through integrating education, behavior change, and sustainability research, I aim to answer: How can we motivate sustainable behavioral change through education programs? More specifically: How do diverse knowledge domains (declarative, procedural, effectiveness, and social) influence sustainable behaviors, both in general as well as before and after a sustainability education program? And: What are barriers hindering education approaches to changing behaviors?

In answering these questions, this research involved three distinct stages: (1) Developing a theoretical framework for educating for sustainability and transformative change; (2) Implementing a food and waste focused sustainability educational program with K-12 students and teachers while intensively assessing participants' change over the course of one year; (3) Developing and implementing an extensive survey that examines the quantitative relationships between diverse domains of knowledge and behavior among a large sample of K-12 educators.

The results from the education program demonstrated that significant changes in knowledge and behaviors were achieved but social knowledge in terms of food was

more resistant to change as compared to that of waste. The survey results demonstrated that K-12 educators have high levels of declarative (factual or technical) knowledge regarding anthropocentric impacts on the environment; however, declarative knowledge does not predict their participation in sustainable behaviors. Rather, procedural and social knowledge significantly influence participation in sustainable food behaviors, whereas procedural, effectiveness, and social knowledge impact participation in sustainable waste behaviors. Overall, the findings from this research imply that in order to effectively educate for sustainability, we must move away from nature-centric approaches that focus on declarative knowledge and embrace different domains of knowledge (procedural, effectiveness, and social) that emphasize the social implications of change.

Friday, February 22, 2013  
3:00 PM  
Wrigley Hall 481

Faculty, students, and the general public are invited.  
Supervisory Committee:  
Dr. Kelli Larson, Chair  
Dr. Hallie Eakin, Member  
Dr. Katherine Spielmann, Member