



In Partial Fulfillment of the Requirements for the Degree of

**Master of Science**  
**Carolyn S. Mattick**

Will defend her thesis

**Energy and Civilization: A History of Energy Production and  
Consumption in a Global Cultural, Technological, and  
Economic Context**

**Abstract**

Based on contemporary literature, this paper first presents an overview of historic patterns of interaction between the human population, economy, culture, and energy use, with technological development as both a facilitating and resultant evolutionary factor. These patterns then provide a foundation for sustainability assessments of food and fossil fuel. The second part of the thesis combines population projections from the United Nations and primary productivity data from the latter half of the twentieth century to extrapolate how both food and fossil fuel supplies can grow to meet future global demand. Finally, the paper analyzes relationships between national per capita energy consumption and two indicators of human well-being and suggests that future economic welfare may depend on technology's ability to produce more output with less energy.

Tuesday, April 21, 2009  
2:30 PM  
GIOS 102

Faculty, students, and the general public are invited.

Supervisory Committee:  
Dr. Eric Williams, Chair  
Dr. John Anderies  
Dr. Braden Allenby