



In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
Mindy A. Kimball

Will defend her prospectus

**Breaking Automobile Path Dependence for Sustainable Mobility:
Passenger Transportation Infrastructure in Phoenix**

Historic investments in transportation infrastructure have produced an emergent behavior that requires unsustainable institutional, economic, and environmental commitment towards future automobile-oriented infrastructure. That commitment becomes a path dependency, preventing the future sustainable transportation goals from being achieved. This research analyzes the institutions that influence Phoenix's passenger transportation infrastructure system. It applies a life-cycle assessment framework to inventory the cumulative fiscal costs, energy, and environmental effects since 1950, and links the institutional analysis with the life-cycle assessment to develop strategy recommendations for breaking the automobile path dependence. Phoenix light rail case studies will be used to validate the methods. The expected results will be a comprehensive institutional, economic, and environmental assessment of passenger transportation in a metropolitan city that has yet to be conducted at such a temporal scale. These results will be communicated directly to the individuals who can integrate this information into future policies, plans, and decisions to break automobile path dependence. The methodology can then be applied to growing metropolitan transportation systems worldwide as they struggle with achieving sustainable mobility goals.

Monday, October 29, 2012
Noon - 1 p.m.
Wrigley Hall, Room 323

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. Mikhail Chester
Dr. Braden Allenby
Dr. Aaron Golub