



In Partial Fulfillment of the Requirements for the Degree of

Doctor of Philosophy
Chukwunonso Chidebell-Emordi

Will defend her prospectus

**A Complex Systems Approach to Measuring and Mitigating Energy
Poverty in Nigeria**

Abstract

Energy poverty is pervasive in sub-Saharan Africa. While there are different schools of thought on how it should be defined (qualitatively or quantitatively), the general consensus is that energy poverty is a state of deprivation of access to basic energy services required to alleviate poverty which in turn perpetuates extreme poverty. Nigeria, located in west sub-Saharan Africa, is the world's seventh largest oil exporting country. It however experiences the same levels of energy poverty as most of its neighboring countries, or a higher level of energy poverty in comparison to the country of Ghana which is not an oil exporting country. This study proposes a complex systems approach to measuring and mitigating energy poverty in Nigeria due to the multi-dimensional nature of energy poverty. Proposed technological and policy mitigation strategies put forward will be examined for holistic sustainability with regards to cross-scale dynamics and cascading effects.

The intellectual merit of this research lies in its effort to propose systems-based mitigation strategies for energy poverty in Nigeria that are widely applicable within the region, fill in the gap in literature on sustainability assessment of energy policy in sub-Saharan Africa, and provide information on both energy consumption as well as livelihood assets data at the community and household levels. Furthermore, it will examine the broader impacts of proposed strategies at the various scales and the dynamics within the context of sustainability science.

Monday, October 28th, 2013
2:00pm
WGHL 102

Faculty, students, and the general public are invited.

Supervisory Committee:
Dr. Aaron Golub, co-chair
Dr. Abigail York, co-chair
Dr. Mike Pasqualetti, member