Understanding and Modeling of Exurban Land Change in Southeastern Michigan

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Exurban development, i.e., human settlement at relatively low densities, became widespread throughout much of North America during the latter half of the twentieth century, arguably driven by increased wealth, enhanced transportation and communication infrastructure, and residential preferences. These low-density settlements represent a landscape pattern that did not generally exist before the 20th century. Documenting the processes and ecological impacts of these developments has been challenged by their intermediate or mixed status between urban and rural, but the significance of their impact is driven by the large areas affected. This talk reviews work that has used geospatial tools to document exurban landscape patterns in Southeastern Michigan, collected geolocated data on residential preferences and behaviors and on vegetation characteristics, examined and modeled both the processes by which these new landscapes have changed and the biogeochemical processes by which they interact with the global carbon cycle. I will describe the findings and on-going activities of Project SLUCE (Spatial Land Use Change and Ecological Effects), an NSF-funded project at the University of Michigan that links economic and ecological models, highlighting the development and empirical requirements of agent-based models that we are using to understand the interactions between policies, human actions, and landscape structure and function.

1080 Derby Hall, 3:30-5:00pm
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Reception to follow, Derby Foyer

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