

Seminar: Andres Baeza & Harish Padmanabha

Presenter:

Andres Baeza, SESYNC Postdoctoral Fellow, & Harish Padmanabha, SESYNC Postdoctoral Fellow

Time of Event:

Tuesday, November 4, 2014 - 12:30

Location:

National Socio-Environmental Synthesis Center (SESYNC)

1 Park Place Suite 300

Annapolis, MD 21401

Early Warnings of Land Degradation as a Management Strategy in Coupled Semi-Desert & Pastoral Systems

Andres Baeza is broadly interested in understanding the dynamical consequences of the feedback that emerges in coupled human–natural systems that are under high environmental variability. Most of his research is conducted in semi-desert environments, where climate variability and human vulnerability are usually the highest. Dr. Baeza is dedicating his time at SESYNC to studying how cooperation behavior is shaped in semi-desert environments. Theoretical studies have shown that cooperators tend to increase in number under poor environmental conditions. However, it is not clear what type of strategies are more likely to emerge in areas under high environmental stress and how these strategies influence the structure and maintenance of semi-desert ecosystems. To answer these questions, he is studying a group of 200 rural communities in the semi-desert region of Chile, in a gradient of environmental degradation and rainfall variability. Dr. Baeza is developing agent-based models to specifically ask how the cooperation strategies that emerge are maintained and change over time in such a gradient of scarcity.

The Velocity of Human Adaptation to Socio-Environmental Pressures

Harish Padmanabha is broadly interested in how the intersection between larger scale socio-ecological pressures and individual level adaptation strategies affect the resiliency of human health. The unprecedentedly rapid and geographically expansive nature of global change influences both our everyday encounters with each other and nature, as well as our interactions with larger scale ecological, economic and political systems. Part of his work focuses on the transmission of dengue virus between people and *Aedes aegypti* mosquitoes and its relationship to changes in human life history patterns and biophysical conditions associated with the expansion of cities in the Global South. Dr. Padmanabha's newer research looks more generally at how human adaptation to different pressures in space influences cultural knowledge transmission, household resiliency, and ecological sustainability. This is based on the hypothesis that recent changes in the way we use space, for example, due to changes in climate, the built environment, ecosystem dynamics, or economic pressures often times do not align with the adaptation strategies that have evolved over human history. Both of these lines of research involve a combination of agent-based modeling and synthesis

of multiple scales of data pertaining to the interactions between the human and non-human components of socio-ecological systems.

Event type:

Seminar

Event Attendance:

Open to the Public

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