**SESYNC Collaborative Postdoctoral Fellowship**

The National Socio-Environmental Synthesis Center (SESYNC), located in Annapolis, Maryland, hosts a two-year postdoctoral fellowships for early career scholars (≤ four years post PhD) to work with a Collaborating Mentor (scholar). Successful candidates will use synthesis methods to address a problem arising from, or associated with, the relationship between humans and the environment. Projects are co-developed with the collaborating mentor with the objectives of 1) advancing understanding of socio-environmental systems and 2) extending the fellow’s current network of collaborators. Fellows are in residence at SESYNC full time, but are provided travel funds to interact with their mentor and attend conferences.

**SESYNC Collaborative Project Ideas**

I am interested in collaborating with a postdoctoral research associate on a wide range of topics related to feedbacks between (i.e., ‘coupled) human and natural systems. In particular, I focus on using agent-based modeling and spatio-temporal land change analysis to investigate how human decision-making responds to and alters the natural landscape, how those alterations influence natural system dynamics, and how those dynamics change human perceptions and behaviors. In addition, I have a particular interest in working with coupled systems that span multiple spatial scales (e.g., local to global). Several example research topics are:

* **Land-use change caused by the operations of illicit supply networks**. Illicit supply networks (ISNs) pose diverse risks and harms to national security, human and environmental health, and economic prosperity. In particular, ISNs can have significant direct or indirect impacts on the environment, ranging from illegal extraction/degradation to natural resource-based money laundering. I am interested in projects that can develop an integrated, spatialized understanding of ISN operations and the (unintended) effects of law enforcement on the social and environmental systems in which ISNs are embedded. Areas of interest include cocaine trafficking, illicit sand/gravel mining, and various trafficked wildlife species, but any ISN that impacts natural systems is of interest.
* **Agricultural water resource management in the food-energy-water (FEW) nexus**. Much FEW Nexus research quantifies interconnections between FEW systems broadly, but current modeling approaches lack the necessary detail and spatial resolution to assess ‘on-the-ground’ FEW resource use and its impacts on local resource users. I am interested in projects that bridge scales of analysis to investigate local FEW system trade-offs induced by FEW resource use transitions and sustainability of rural producer livelihoods. For example, I have an active project involving agent-based modeling of farmers’ irrigation decisions in the context of a transition from rain-fed to irrigation-fed agriculture in Alabama.
* **Land-use change and land conversion driven by global agricultural commodity markets**. I am interested in how local land users perceive global commodity signals, make decisions of how to respond within the context of their overall livelihood strategy, and modify (or not) their surrounding natural landscape. This may also include smallholder adaptations to telecoupled phenomena, such as large-scale land acquisitions, and the social and ecological consequences of their adaptive responses (e.g., indirect land-use change).