Annapolis, Md — The National Socio-Environmental Synthesis Center (SESYNC) announces an innovative partnership with the U.S. Geological Survey (USGS) and the U.S. Department of Agriculture (USDA) to catalyze actionable, data-intensive research at the water and food systems nexus. The “Data to Motivate Synthesis” Program for early career scientists will facilitate new collaborations and computational capacities amongst social and environmental scientists to address critical questions of water quantity and quality and agricultural productivity in the face of a changing climate.

The program builds on efforts to leverage the federal government’s extensive, freely available climate-relevant data to stimulate innovation and private-sector entrepreneurship in support of national climate change preparedness. The Obama Administration is today unveiling the Initiative’s Water Theme, aimed at empowering communities and individuals to plan for and respond to the risks of climate change-related impacts on water resources.

“The newly released datasets will be extremely valuable to natural resource managers faced with day-to-day and long-term strategic decisions about how to operate in the context of climate change,” said John Holdren, Assistant to the President for Science and Technology and Director of the White House Office of Science & Technology Policy.

The SESYNC-USGS-USDA Data to Motivate Synthesis Program will include a series of workshops for selected early career scholars, who will participate in a highly interactive and dynamic process of real-time data discovery, analysis, and visualization. Workshop participants will leverage new centralized repositories of data and sophisticated models, including records of streamflow, groundwater levels, water quality, estimated water use, and the production, supply, and distribution of agricultural products, among others.

“This new partnership with SESYNC is very exciting for the USGS, particularly because of our commitment to training and providing opportunities for the next generation of scientists,” said Jerad Bales, USGS Chief Scientist for Water. “USGS manages a wealth of water data so we especially are pleased to work with SESYNC to develop new uses and products from these data to address climate and water issues.”

Data to Motivate Synthesis Program scholars will interact with these federal data resources through an open-source, web-based platform developed by SESYNC. The platform will be designed to facilitate the cutting-edge, integrated computational research necessary to produce cross-disciplinary and synthetic scientific knowledge that can inform decision makers.

“Water is central to understanding food systems resilience to climate change. Agricultural production
is critically dependent upon climatic variables, such as changes in the amount and patterns of precipitation and extreme events including floods and droughts. Climate change adaptations in water use policy and agricultural practice require a data-rich understanding of the feedbacks between these systems,” said Margaret Palmer, SESYNC Executive Director.

Following the SESYNC-USGS-USDA workshops, participants will be invited to submit proposals for interdisciplinary team projects at SESYNC. SESYNC will fund up to six early career scholar teams and will provide logistical, travel, and cyberinfrastructure support for each team to meet multiple times over a two-year period. SESYNC has also hired Kristal Jones (Ph.D. Rural Sociology and International Agriculture and Development, Pennsylvania State University) as a full-time, resident research fellow to undertake and help coordinate research for the program beginning April 2015.

“The data-rich, massively-scaled problem of water and food systems resilience—which is inevitably tied to global economic, social, and environmental forces—requires a new mode of problem-solving,” said Dr. Nicholas Magliocca, Computational Research Fellow at SESYNC. “We hope the program will build the capacity of young scholars to conduct this type of collaborative, data-driven research by fostering data literacy and computational skills.”

Additional details on the Data to Motivate Synthesis Program will be made available on SESYNC’s website at www.sesync.org and via SESYNC’s e-newsletter.

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The National Socio-Environmental Synthesis Center, funded through an award to the University of Maryland from the National Science Foundation, is a research center dedicated to solving complex problems at the intersection of human and ecological systems.

Associated Project:
Data to Motivate Synthesis

Audience:
Researcher
Policy maker
Communications
Cyberinfrastructure

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