Title: Taking the long view: Adapting to the risk of increasing frequency and severity of drought in Oklahoma

Abstract:
The presentation will detail a number of integrated research efforts in Oklahoma and the southern Plains region focused on adapting to increasing climate variability and climate change. These efforts are loosely coordinated under the Dept. of Interior Climate Science Center for the South-central U.S., hosted by the University of Oklahoma, and enabled through a recently awarded $24 million National Science Foundation grant to the major research universities in Oklahoma, *Adapting Socio-ecological Systems to Increased Climate Variability*.

In Oklahoma, as in many semi-arid regions of the world, a highly variable climate and large precipitation gradient result in rapid transitions that creates a landscape that is highly vulnerable to climatic extremes. To develop sustainable natural resource supplies that support a vibrant economy with healthy and productive citizens, we need to develop robust knowledge for anticipating future states of socio-ecological systems and for adapting how we use ecosystem services in a changing climate. The recent multi-year drought in the southern Plains has highlighted the very real risks and vulnerabilities that considerable variability in the climate imposes on socio-ecological systems. Our ultimate goals are to empower managers to effectively adapt socio-ecological systems to climate variability and change and to provide a source of information for Oklahomans about regional environmental changes.

We will detail the design and deployment of social and ecological observatories to support understanding of social and ecological risks and vulnerabilities to drought. We will also detail the design and objectives for integrated modeling and decision support tools, aimed at helping support decision making by state agencies, counties, businesses and individuals. These include efforts underway to develop an accurate statewide water budget, and plans to make this available to state agencies and policy makers.