**Luquillo LTER Site Review Team**

March 28-31, 2017.

**Debra Peters**, New Mexico State University (Lead PI, Jornada LTER)

My research focuses on understanding and predicting the dynamics of arid and semiarid systems across a range of spatial and temporal scales. Much of my research involves interactions within and among various species of grasses and shrubs with a focus on extrapolating patterns and processes across scales, from individual plants to patches, landscapes, and regions. Current projects include (1) the examination of spatial variation in shrub invasion and grass persistence, (2) the study of ecotones and biotic transitions at multiple scales, (3) predicting nonlinear spatial dynamics of cascading systems, (4) using cross-site studies to generalize processes and patterns, and (5) integrating process-based experiments with simulation models (ECOTONE), geographic information systems (GIS), and remote sensed images. Research is conducted at a number of sites in Colorado, New Mexico, and Texas with most studies occurring at the Jornada Basin Long Term Ecological Research (LTER) site in southern NM and the Sevilleta National Wildlife Refuge LTER site in central NM. Collaborative research is being conducted at three sites in Hungary.

**Christopher Neill**, Marine Biological Lab, (wife works at Plum Island LTER)

http://www.mbl.edu/ecosystems/faculty/neill/

I try to understand how changes in land use and other human activities alter the structure of ecosystems. Several of my research projects investigate the ecological consequences of deforestation of the world’s largest tropical rainforest in the Brazilian Amazon. I study how deforestation changes the way water and dissolved and particulate materials move from land to water and within channels of streams and rivers. I also examine how forest clearing alters the rates of cycling of soil nutrients and organic matter and the emissions of carbon dioxide and nitrogen oxides from soils to the atmosphere. My research group uses comparisons of gauged catchments, natural abundance of stable isotopes and field stable isotope additions, and paired hydrological and hydrochemical measurements.

**Christine Goodale**, Cornell University (Hubbard Brook LTER)

http://ecologyandevolution.cornell.edu/christine-l-goodale

My research centers on understanding the effects of human activities on forest ecosystems, as well as the role of forests in sustaining clean water and regulating atmospheric greenhouse gases. I study processes that affect forest cycling and storage of carbon and nitrogen, focusing on how these cycles interact and respond to human-driven changes in climate, land use, and atmospheric chemistry, with particular emphasis on the response of ecosystems to atmospheric deposition of N from air pollution. Nitrogen emitted through fossil fuel combustion and agricultural activities eventually deposits onto downwind ecosystems: much of the work in my lab focuses on understanding the mechanisms by which ecosystems retain or remove these elevated N inputs, and the consequences of these N inputs on ecosystem processes. These consequences include acidification of soils and streams, shifts in species composition, changes in the rates of growth and decomposition, and production of smog and multiple greenhouse gases that have large effects on future climate. Working with a range of collaborators, my lab group uses a range of tools to address many of these processes, at scales ranging from microbial decomposition in soil cores, to plot-scale measurements of isotopic tracers, to whole-catchment recovery from acid rain, to modeled dynamics of N effects on regional carbon storage and the earth climate system.

**Jonathan Walsh**, Cary Institute of Ecosystem Studies (Baltimore Ecosystem Study LTER)

Information Manager

**Alan Wilson**, Auburn University

http://www.wilsonlab.com/

As a community ecologist, I am generally interested in consumer-prey interactions and identifying the ecological and evolutionary consequences of intraspecific genetic and phenotypic variation on aquatic communities and ecosystems.  My current research focuses on the ecology of cyanobacterial blooms with an emphasis on understanding how biotic and abiotic factors influence cyanobacterial bloom formation.  In tandem with our harmful algal bloom research, the lab is also beginning to study the factors leading to taste, odor, and toxicity issues in drinking water reservoirs.