



EFFECTS OF NITROGEN DEPOSITION AND RAINFALL VARIABILITY ON GRASSLAND PLANTS AND ANIMALS

SPEAKER: Joshua B Grinath - Idaho State Assistant Professor, Biological Sciences

DATE: Wednesday, February 12, 2020

TIME: 3:00-4:00 pm

LOCATION: ENR2, S107



ABSTRACT: Human activities are altering Earth's ecosystems in unprecedented ways, and two major drivers of this change include atmospheric nitrogen deposition and climate change. Elevated rates of nitrogen deposition are fertilizing landscapes that are historically limited in nitrogen availability. At the same time, climate change is altering water availability through changes in precipitation and temperature regimes. Together, the altered resource conditions created by these global change drivers are causing widespread changes in plant performance and the composition of plant assemblages. However, much less is understood about how these plant responses affect animals and the ecological dynamics between plants and animals. Moreover, plants and animals interact in a variety of mutualistic and antagonistic, direct and indirect, ways that must be considered together to understand community responses. In this seminar, we will discuss the separate and combined repercussions of nitrogen deposition and changes in rainfall for communities of plants and animals in grassland ecosystems. We will explore these effects in the context of a mutualistic-antagonistic network of species interactions among plants, ants and bears, and in a system of direct antagonistic and indirect ecosystem engineering interactions among giant kangaroo rats, plants, and insects.