



# The Department of Ecology and Evolutionary Biology

## Fall 2017 Seminar Series

# The Biogeochemistry of Drought

At least 1/3 Earth's land experiences regular drought, and climate models suggest this will increase. However, the biological processes occurring during the dry season have only been studied by inference from what happens when the rains return. Important dry soil phenomena remain unexplained, such as the "Birch Effect"—the pulse of respiration on rewetting a dry soil. Important and surprising processes occur during the dry season. For example, during the summer in California grasslands, soils are dry and plants are dead, but microbial biomass increases, even though activity is limited. Additionally, pools of bioavailable C increase, which primes the system to produce a pulse of activity following rewetting. These changes appear to result from a combination of microbial drought survival physiology and disconnections in soil water films that limit substrate diffusion. A focus of the talk will be about how we bridge the scales from the micro- to the ecosystem. Current dominant carbon cycling models do a poor job of capturing drought and rewetting dynamics—how can we incorporate the dry-soil and pulse processes into large-scale models?

**Friday, September 1, 2017**

**SERF 307 - 3:30 PM**

**Pre-talk Reception 3:00 PM in Dabney 575**



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