LIFE & ENVIRONMENTAL SCIENCES SEMINAR

UCMERCED

CO-HOSTED BY THE ENVIRONMENTAL SYSTEMS GRAD GROUP AND UCM-JGI RENEW

PRESENTING

DR. JENNIFER PETT-RIDGE

LAWRENCE LIVERMORE NATIONAL LAB, UC MERCED

Pursuing Wild Microbes: How Microbiome Interactions and Ecophysiological Traits Shape the Persistence of Soil Carbon

Since the dawn of agriculture, cultivated soils have lost a vast amount of carbon to the atmosphere. Most of the organic matter in soil is microbial necromass, shaped by the traits of diverse organisms. To understand how soil microorganisms lead to stable soil carbon, it is critical to understand how microbial ecophysiological traits are linked to soil organic matter formation, and how cross-kingdom interactions—involving bacteria, fungi, archaea, protists, microfauna and viruses—shape soil carbon availability and loss. Yet our current ability to predict ecosystem processes from microbiome data is poor. Why? I will suggest several key reasons, and present results from studies where we have used quantitative stable isotope probing (SIP) and metagenomics/transcriptomics to assess growth and mortality of wild microbial and viral communities--showing how niche differentiation in specific soil microhabitats (space and time) drives the soil carbon cycle.

OCTOBER 9TH
2:00PM - 3:20PM
SSB 160

LIGHT REFRESHMENTS WILL BE PROVIDED. CONTACT LIFESCIENCES@UCMERCED.EDU WITH QUESTIONS.