



University of New Hampshire

## Fall 2020 Environmental Sciences Seminar Series

# Wednesday, September 23

2:30–3:30pm Online via Zoom—Register [here](#)

**Asmeret Asefaw Berhe**

**Professor, Soil Biogeochemistry & Falasco Chair in Earth Sciences, Life and Environmental Sciences, University of California, Merced**

*Post-fire Erosion: Implications for Persistence of Pyrogenic Carbon in Soil*

Fire, erosion, and soil carbon (C) dynamics overlap in space and time. Increased rates of erosion typically follow wildfires, and fire-altered or pyrogenic C (PyC, also referred to as black carbon) is redistributed vertically within soil profiles and laterally to lower landform positions along hillslopes, changing soil's C sequestration trajectory. Using case studies from wildfires that occurred in the Sierra Nevada Mountains (USA) I will discuss how the composition and magnitude of PyC redistributed by erosion varies considerably depending on fire severity and geomorphology of the landscape. Furthermore, our work demonstrates how PyC's hydrologic interactions determine: the amount that will enter the soil profile and experience microbial and geochemical alterations, whether it will be buried in depositional environments and stored on the landscape, or if it will be transported to streams and eventually to the ocean. This crucial first interaction with the hydrologic cycle occurs on the timescale of days to weeks, and therefore supersedes microbial decomposition as the primary control on charcoal's environmental persistence.



*Seminar Host:: [Natalie Kashi](#), NRESS PhD Candidate*

*Series sponsored by the Natural Resources and Earth Systems Science (NRESS) Ph.D. Program, in partnership with the Earth Systems Research Center, and the Natural Resources and the Environment and Earth Sciences Departments.*

**Free - All are Welcome**

**Full Series and Registration [HERE](#).**