Title: **The ecosystem consequences of wildfire activity over space and time**

Abstract: Recent changes in fire activity highlight major uncertainties about how disturbances will interact with ongoing climate change to affect ecosystem properties. Shifting fire regimes may lead to long-lasting directional changes or shifts in biogeochemical states, potentially impacting carbon and nitrogen balance over large spatial and temporal scales. However, data have been lacking to test these ideas over longer timescales – and to consider their implications for future projections – until only recently. A network of paleoecological records will document the role of climate in past fire-regime variability, and the potential for changing biogeochemical impacts will be evaluated. Combined with inferences from ecosystem and Earth system models, these results characterize how disturbances shape biogeochemical dynamics across a range of spatial and temporal scales.