

The Institute of Arctic Biology, University of Alaska Fairbanks has an opening for an M.S. graduate student to work with Roger Ruess and Donie Bret-Harte on an NSF-funded project on shrub feedbacks to C and N cycling along a boreal-arctic transect in northern Alaska. A widespread shift from tundra to deciduous shrub-dominated vegetation appears to be underway in northern Alaska, which could have profound implications for C balance and biogeochemical cycling. Because much of the Earth's soil C is stored in arctic and boreal regions, changes in the C budgets of these biomes may feedback strongly to global climate. Biogeochemical C and N cycles are linked tightly in boreal and arctic ecosystems, and plant production is strongly N-limited; therefore, N-fixing shrubs affect soil C through their effects on near-surface soil N, via both SOM turnover and N inputs. The graduate student will focus on the effects of the growth and ecophysiology of Siberian alder on biogeochemical cycling across topo-edaphic sequences along a latitudinal transect from the boreal forest (BNZ LTER) to arctic tundra (ARC LTER). The student will be expected to develop their own research questions within the overall framework of the project, and will have the opportunity to interact with PIs and other graduate students working on project. Because research sites are distributed between Fairbanks and areas north of the Toolik Field Station (see <http://toolik.alaska.edu/>), the graduate student will be conducting research and camping in very rugged/remote terrain. The student will be supported through a combination of research assistantships and teaching assistantships, and expected to begin fieldwork in the summer of 2018, and coursework in the fall of 2018. For more information, please contact Roger Ruess (rwruess@alaska.edu) or Syndonia Bret-Harte (msbretharte@alaska.edu). You must also apply for graduate study to the Department of Biology and Wildlife at University of Alaska Fairbanks (see <https://www.bw.uaf.edu/graduates/index.php> for application requirements); the deadline for applications is January 15, 2018.