PROJECT TITLE: **A muddy matter: nutrient and carbon cycling in mucky sediments in wetlands and other shallow freshwater ecosystems**

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URA PROJECT DESCRIPTION

Small, generally shallow aquatic ecosystems are abundant in many landscapes, and their roles in global biogeochemical cycles (e.g., carbon, nitrogen, and phosphorus) are increasingly appreciated. Unfortunately, the number of studies focused on small aquatic ecosystems has lagged behind those on larger lakes and reservoirs; thus, to make meaningful estimates of the importance of inland waters in global biogeochemical cycles, we need more studies that focus on biogeochemical processes in small water bodies.

Many processes that influence water quality, toxicity in sediments, and carbon cycling in freshwater ecosystems occur at the water-sediment interface, a chemically and biologically reactive zone. Research activities this summer will focus on the interaction between water and an understudied type of organic-rich sediment (think loose mud) that is common in water bodies throughout the region. As such, our primary goals this summer will be to (1) determine the drivers of surface water and ground water exchange with porewater in these sediments and (2) explore how these interactions influence nutrient and carbon cycling.

This project will be field-intensive, but will also involve lab work. The candidate must be comfortable working in both water and muck using small boats and waders. The URA will gain knowledge in limnology, chemistry, and ecosystem ecology.