

PhD Position in Salt Marsh Soil Biogeochemistry

The Spivak Coastal Biogeochemistry Lab at the University of Georgia seeks a PhD student for a new project focused on understanding soil organic matter-mineral interactions in salt marshes. These ecosystems provide valuable storm-surge buffering and climate regulation services, in part, through rapid and efficient burial of mineral and organic particles. Physical and chemical associations between organic matter and minerals can enhance carbon burial but the importance of these interactions and how they are affected by the dynamic redox environment of salt marsh soils are not well understood.

The successful candidate will conduct research characterizing soil mineralogy and organic matter composition in salt marshes along the Georgia coast. This broad spatial characterization will be complemented by lab-based experiments testing physical and chemical mechanisms of organic matter protection under varying redox conditions. In addition to advancing wetland soil science theory, this research will assist state and federal partners in identifying properties of dredge material that can enhance carbon burial in beneficial use projects.

The student will gain experience in advanced geochemical and organic matter characterization techniques. Chemical transformations of organic matter in the lab experiments will be captured at the scale of compounds, minerals, and microbes, thereby providing fine-scale mechanistic information that is necessary for understanding large-scale spatial patterns. The student will gain insight into coastal management projects by working collaboratively with government partners to co-develop decision support tools that match dredge material with beneficial use projects for the co-benefit of enhanced carbon storage.

At the time of appointment, highly qualified applicants will have a masters or undergraduate degree in chemistry, geology, geoscience, soil science, or a related field. Ideal candidates will have knowledge of biogeochemical processes, experience using wet-lab chemical procedures, conducting fieldwork in tidal wetlands, and using GIS, as well as excellent quantitative, written, and interpersonal skills. Preference to those with masters degrees but highly qualified candidates with bachelor degrees will be considered.

The Marine Sciences Department (<https://www.marsci.uga.edu/>) is within UGA's Franklin College of Arts and Sciences and includes campuses in Athens, where this position is located, and at the Skidaway Institute of Oceanography (Savannah). UGA has unique analytical facilities, including the Center for Applied Isotope Studies (<https://cais.uga.edu/>), Georgia Genomics and Bioinformatics Core (<https://dna.uga.edu/>), and the Complex Carbohydrates Research Center (<https://www.ccr.uga.edu/>) which houses a state-of-the-art NMR facility.

The Spivak Lab is committed to supporting and sustaining a collaborative work and learning environment. All qualified applicants will receive consideration without regard to race, color, national or ethnic origin, sex, sexual orientation, gender identity, pregnancy, disability, religion, age, or protected veteran status. Those interested should send (1) a one-page statement describing their educational and research backgrounds, motivation for pursuing a graduate degree, career goals, and specific interests in this project and in joining the Spivak lab (<https://www.marsci.uga.edu/directory/people/amanda-spivak>); (2) CV; and (3) contact information for 3 references as a single PDF document to aspivak@uga.edu. Serious applicants and those interested in starting in Spring 2024 are encouraged to express interest as soon as possible. Applications to the Marine Science program for Fall 2024 should be submitted by 12/31/2023 for full consideration (<https://www.marsci.uga.edu/graduate-application>).