

Graduate student position in salt marsh soil science

The Spivak Coastal Biogeochemistry Lab at the University of Georgia invites applications to fill a graduate student position focused on soil organic carbon (SOC) persistence in salt marsh ecosystems. Salt marshes provide valuable storm-surge buffering and climate regulation services, in part, through efficient burial of mineral and organic particles. Yet there is considerable spatial heterogeneity in SOC stocks that does not reflect latitude, salinity or many other variables. The inability to predict soil stocks is due, in part, to an incomplete understanding of the mechanisms controlling SOC persistence.

This research addresses key knowledge gaps in understanding how soil redox conditions, minerals, and rhizodeposition affect the vulnerability of buried organic carbon to microbial attack. Preservation mechanisms will be tested in complementary laboratory and field experiments based on the salt marshes within the Georgia Coastal Ecosystems and Plum Island Ecosystems Long Term Ecological Research Sites. Chemical transformations of SOC will be captured at the scale of compounds, minerals, and microbes, thereby providing fine-scale mechanistic information that is necessary for understanding large-scale drivers of preservation or loss. The student will develop an independent project within this framework, advised by Dr. Amanda Spivak in the Marine Sciences Department at UGA and in collaboration with Dr. Jennifer Pett-Ridge at the Lawrence Livermore National Laboratory.

At the time of appointment, highly qualified applicants will have an undergraduate or masters degree in chemistry, geoscience, soil science, or a related field. Ideal candidates will have experience conducting fieldwork in tidal wetlands and excellent quantitative, laboratory, and written communication skills.

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). Students in the Marine Sciences Department develop a program of study in biological, chemical, or physical oceanography, with typical areas of research emphasis including marine biogeochemistry, coastal ecology, coastal ocean processes, microbial ecology, and marine ecosystem modeling. 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.crc.uga.edu/>)

The Spivak Lab is committed to supporting and sustaining a collaborative work and learning environment that is inclusive, equitable, and diverse. All qualified applicants will receive consideration without regard to race, color, national or ethnic origin, sex, sexual orientation, gender identity or expression, pregnancy, disability, religion, age, or protected veteran status.

Those interested should send (1) a one-page cover letter 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\[at\]uga.edu](mailto:aspivak[at]uga.edu). Serious applicants and those interested in starting in Spring 2022 are encouraged to express interest as soon as possible. Applications to the Marine Science program for Fall 2022 should be submitted by 12/31/2021 for full consideration (<https://www.marsci.uga.edu/graduate-application>).