Department of Crop and Soil Sciences

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GRADUATE ASSISTANTSHIP AVAILABLE

Understanding rare earth element uptake mechanisms used by bacteria

Essential Responsibilities:
We seek an exceptional PhD student to conduct NSF-funded independent research on the biologically exudates that solubilize rare earth elements (REYs). Until recently, REY were known to be used by biology, and this study seeks to determine how bacteria that utilize REYs take them up from the environment. These topics laboratory experiments to produce and characterize REY binding exudates produced by bacteria. Activities may include conducting microbiology experiments, analytical chemistry, spectroscopy, and wet chemical techniques to better understand the structure and reactivity of exudate utilized in REY uptake. Opportunities exist to interact closely with a group of distinguished intramural and extramural collaborators, including at the University of Georgia and National Laboratories.

Related activities include laboratory work; data collection at national laboratories; supervising and mentoring undergraduate students; outreach to high school students and teachers; data analysis; report, manuscript, and proposal preparation; and presentation of research at local, regional, and national meetings.

Qualifications:
A M.S. degree in chemistry, geology, environmental engineering, microbiology, soil science, or a related discipline is required. An exceptional student with a B.S. in one of the above fields may also be considered. Demonstrated excellence in academics, and written and oral communication skills.

Location:
The student will have Crop and Soil Science, Plant and Microbial Biology, or Entomology and Plant Pathology as a home department, working closely with Duckworth (https://duckworth.wordpress.ncsu.edu/), Baars (https://baarslab.wordpress.ncsu.edu/), and Hyman (https://cals.ncsu.edu/plant-and-microbial-biology/people/mrhyman/) laboratories. The Raleigh-Durham area consistently ranks among the best places to live in the United States, largely due to its vibrant intellectual community and ample access to recreational and cultural activities.

For more information and informal consideration:
Please send a CV, a list of 3 references, and cover letter to Owen Duckworth (owen_duckworth@ncsu.edu). The position has an anticipated start date of January or August 2023.