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School of Natural Resources and Nebraska Water Center *part of* Daugherty Water for Food Global Institute

## GRADUATE RESEARCH ASSISTANTSHIP

The University of Nebraska-Lincoln (UNL) invites applications for a **PhD graduate research assistantship**. This assistantship is available in the Critical Zone Research group of Dr. Malakar. The group mainly focuses on identifying geochemical processes in the unsaturated or vadose zone utilizing experimental and modeling approaches. The current project will identify impact of surficial processes on reactive nitrogen in the vadose zone and ends in March 2026. This USDA-NIFA funded project (Accession no.#1027886) will measure the occurrence of multiple nitrogen species, which will include inorganic and organic nitrogen species beneath gravity, pivot irrigated and dryland corn using deep coring, elucidate transformation pathways between different nitrogen species by comprehensive chemical analysis, and column experiments with isotope-labeled fertilizers and simulate reactive transport of nitrogen with appropriate modification of a well-developed USDA-ARS management model - Root Zone Water Quality Model (RZWQM2). The new knowledge from field and column experiments and the modified model can be used as a decision-support tool by regulatory agencies to show how proposed management practices mitigate groundwater pollution. Ultimately this work will support the development of proactive management practices to protect groundwater quality. More details about the project can be found at: <https://cris.nifa.usda.gov/>

Interested applicants should contact Dr. Arindam Malakar, [amalakar2@unl.edu](mailto:amalakar2@unl.edu), for more information.

**Qualifications:** Applicants should have an M.S. in soil science, soil chemistry, biogeochemistry, organic geochemistry, or another related field of study. The student should possess strong skills in soil chemical laboratory work and data analysis including statistics as well as excellent writing and communication skills. The successful candidate should be organized, creative, and highly motivated and passionate about working in a collaborative group environment. Interested candidates should send a single pdf file containing the following to Dr. Arindam Malakar ([amalakar2@unl.edu](mailto:amalakar2@unl.edu)): (i) a cover letter, (ii) curriculum vitae, and (iii) list of three references including names, email addresses, and telephone numbers. Applications will be reviewed beginning November 01, 2022 and continue until the position is filled or the search is closed. Anticipated start for the position is January 2023.

The qualifying degree must be completed before the GRA start date.

Graduate Research Assistantship Stipend:

Ph.D. Student: Annual Basis - \$27,000

GRA Availability: January 1, 2023

Application: Formal application for graduate studies is required. Follow the admission instructions at: <https://snr.unl.edu/gradstudent/howtoapply-graduate.aspx>

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