

UNIVERSITY OF MINNESOTA

Twin Cities Campus

*Department of Soil, Water, and
Climate
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November 16, 2023,

Position Announcement: Post-doctoral researcher

Summary: A post-doctoral researcher position is available in the Soil Ecosystem Ecology for Climate Resiliency and Sustainability (SEECRS) lab in the Dept. of Soil, Water, and Climate at University of Minnesota to study the effects of nitrogen fertilization on grain yield, soil water nitrate leaching, and nitrous oxide emissions in a new perennial grain crop Kernza. This is a 1.0 FTE term position with initial funding for two years (tentative January 2024-December 2026). The position requires regular field and laboratory work at the University of Minnesota Twin Cities campus and the nearby Rosemount research and outreach station.

Background: The researcher will evaluate plant nitrogen use, nitrate leaching potential, and greenhouse gas emissions in a full nitrogen budget of intermediate wheatgrass (*Thinopyrum intermedium*) across a variety of nitrogen fertilizer management treatments and stand ages. The grain-type intermediate wheatgrass variety 'MN-Clearwater' is being studied for its potential to provide Kernza® perennial grain. The post-doc will oversee the funded project and support related work associated with the [KernzaCAP](#) project. They will also analyze data, write peer-reviewed papers, and contribute to the design and development of new projects related to agricultural climate change solutions research.

The researcher will work closely with PIs, graduate students, undergraduate research assistants, and field technicians in the SEECRS (Gutknecht) Lab (PI Dr. Jessica Gutknecht) and the Sustainable Cropping Systems lab (PI Dr. Jacob Jungers). Research includes measuring leaf greenness, greenhouse gas emissions, nitrogen dynamics in soil and soil water via lysimeter sampling, recording soil moisture at various soil depths, and measuring grain and biomass yields from perennial crops. The project is based on a large replicated and instrumented field experiments to determine intermediate wheatgrass fertility needs. The research program is highly collaborative with other researchers and multiple stakeholders, and the researcher will also be expected to participate in summarizing research findings for those audiences.

Specific tasks include:

- Data management and analysis (45%) – Manage and analyze all project data for grant reporting, peer-reviewed publications, outreach products, and presentations.
- Fieldwork management (30%) - Oversee field tasks related to research goals of measuring greenhouse gas emissions and nitrogen use from perennial crops. Duties include scheduling and participating in the collection of field data, soil water samples from lysimeters, and grain and biomass samples for crop yields. Travel to the field trials is required throughout the growing season.
- Lab activities (15%) – Process soil and water samples in the Gutknecht lab.
- Research dissemination (5%) – Prepare virtual and in-person presentations for professional society conferences, state agency briefings, project update meetings, field days, and Forever Green Initiative outreach events.
- Professional development (5%). Activities will vary depending on the researcher’s career goals. Opportunities exist to mentor students, teach graduate and/or undergraduate classes, participate in efforts to enhance diversity, equity, and racial justice, and contribute to future research through grant writing.

Applicants must have a PhD in soil science, biogeochemistry, agronomy, or a related field upon beginning the position. Experience in cropping systems field research is desired. The incumbent must have strong quantitative skills and demonstrated writing abilities through the publication of research.

Start date: January 2024

Duration: 2 years, with possibility for renewal

Salary and benefits: \$58,000, or commensurate with experience, and a competitive benefits package

Review of applications will begin on November 20 and continue until the position is filled.

Contact Person/Email/Phone for information or questions:

Jessica Gutknecht, Associate Professor

Department of Soil, Water, and Climate

jgut@umn.edu, +1 612 626 8435 (phone not checked regularly; e-mail preferable)

To apply: Apply through the University of Minnesota online employment system (<https://hr.umn.edu/jobs/Find-Job>), responding to **Job ID 358715**, and include (as a single PDF) a brief letter of interest, CV, and names and contact information for three professional references.

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