November 11, 2020,

Graduate Research Assistantship in Water Quality and Perennial Grain Crop Production at the University of Minnesota-Twin Cities: Ecology, Evolution, and Behavior (EEB), Land and Atmospheric Science (LAAS) or Applied Plant Science (APS) M.S. or Ph.D. Program.

The Gutknecht and Jungers laboratories in the Departments of Soil, Water and Climate, and Agronomy and Plant Genetics, at the University of Minnesota seek a graduate student for a Summer-term (May/June 2021, preferred) or Fall term (August 2021) start. Prospective applicants should be interested in an M.S. or Ph.D. program in Ecology, Evolution, and Behavior (EEB), Land and Atmospheric Science (LAAS) or Applied Plant Sciences (APS). The student will work closely with Jared Trost and his team at the US Geological Survey along with 60+ collaborators across a multi-institution USDA-funded Sustainable Agricultural Systems Coordinate Agricultural Project focused on Kernza® Perennial Grain (kernza.org/kernzacakpz).

The main focus of this graduate project is the monitoring and modeling of surface and subsurface water processes (flow, hydrology, quality) in Kernza compared with conventional “business as usual” annual cropping systems, determining how Kernza management decisions impact water quality or other environmental quality metrics, and using empirical measurements to validate and develop models of Kernza's potential improvement of water quality across geographical regions and across time. Other possible opportunities include participating in water quality assessments on partner farms and working with diverse stakeholders across other project objectives.

A background in Soil Science, Water Science, Agriculture, Food Systems, Sustainability, or a related field is required. Strong skills or interest and capacity to develop strong skills related to hydrological modeling, statistical analysis, and management of large datasets is preferred. Field and laboratory experience related to the physical, chemical or biological characterization of soil and water samples is also preferred but not required. Applicants should have a strong interest in sustainable cropping systems, water quality, engaging with diverse groups of people, and a passion for communicating data outcomes to end-users, diverse stakeholders, and the general public.

Financial support will include three full years (including summers) of stipend, graduate tuition, funding for research and travel expenses, and medical and dental insurance. For candidates interested in a full PhD program, the research team will assist the student to acquire additional funding. Note that limited fellowships are available through all possible graduate programs.

Interested applicants are encouraged to send a CV/Resume and brief (~ 1-2 paragraph) description of background and research interests to Dr. Jess Gutknecht (jgut@umn.edu). In addition, by December 1, 2020, applicants are required to complete an application for one or
more of three potential Graduate Programs at the UMN-Twin Cities: Ecology, Evolution, and Behavior (https://cbs.umn.edu/academics/departments/eeb/graduate/prospective), Land and Atmospheric Science (https://www.laas.umn.edu/), or Applied Plant Sciences (https://www.appliedplantsciences.umn.edu/). These programs are dedicated to increasing the participation of traditionally underrepresented students. These programs also no longer require candidates to have taken the GRE.

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