Assistant Professor
Ecological Engineering
Department of Bioproducts and Biosystems Engineering (BBE)
College of Food, Agricultural and Natural Resource Sciences
University of Minnesota

The Department of Bioproducts and Biosystems Engineering (BBE) seeks candidates for a tenure-track academic position at the assistant professor level with 50% teaching and 50% research responsibilities, to develop a collaborative, internationally recognized research program in the area of ecological engineering with a focus on water resources.

Global Climate and Environmental Change is a strategic priority area to be addressed in the great challenge of producing adequate food and energy for the world's growing population. One of the key objectives under this strategic priority is to better understand the complex interactions between ecosystem function and environmental change at multiple scales, ranging from micro to macro and local to global. Developing appropriate climate change mitigation and adaptation strategies requires ecosystem-focused understanding for sustaining and improving land and water resource quality. The USDA NIFA has identified Climate Change as one of its priority science areas with the goal to develop adaptation strategies to changing weather patterns and sustain economic vitality while addressing greenhouse gas emissions. Applicants must have an excellent record of accomplishment in an academic, consulting, industrial, or public sector setting, and possess the potential to become an internationally recognized leader in teaching and research.

The BBE Department has a long history of meeting the engineering and educational needs for sustainable water resource management. This work includes seminal research and teaching programs dating back to the 1920's, and more recent innovative research in alternative design of drainage ditches, conservation drainage practices, groundwater resource recharge for irrigation and drinking water supply, and representation of complex water systems with hydrologic and water quality models. This position will build on this history by establishing a program of distinction in quantifying the interactions among the biological, chemical, and physical components of natural and human-impacted systems at multiple ecosystem scales.

Research: The candidate is expected to develop an internationally recognized research program with a focus on water resources. Quantifying the interactions among biological, chemical and physical processes of water resources is of fundamental importance in the design of sustainable systems. This type of research is inherently tied to the dynamic interactions between landscape and watershed features, management of waste byproducts, transportation infrastructure, and human communities. Proper consideration of the integration of these interactions is necessary for strengthening our multifaceted economy while protecting the environment. Past advances at relatively small landscape scales have often been inadequate in evaluating impacts at larger watershed and ecosystem scales. More research is needed to capture the complexity that evolves from the interactions of numerous processes at different scales. Information gained from this research is necessary in developing strategies for the adaptation of sustainable practices necessary for the long-term viability of ecosystems. Of particular importance are strategies for maintaining and improving ecosystem structure and function under pressures from agricultural and other human activities and a changing environment and climate. This position will leverage University research and resources to engage students, policy makers, and public stakeholders, and will educate the next generation of researchers and leaders.

Collaborative research across the various colleges, departments, and centers throughout the University including the Water Resources Center (WRC), College of Food, Agricultural and Natural Resource Sciences (CFANS), and the College of Science and Engineering (CSE) is highly encouraged.

Teaching: The teaching component of this position will include teaching and developing courses for one or more programmatic areas: the Environmental and Ecological Engineering Specialization within the BBE major (e.g, Ecological Engineering Principles, Sustainable Waste Management Engineering), the Ecological Engineering Minor administered by BBE, the Environmental Science Track of the Environmental Sciences, Policy, and

Management Major (ESPM), and the Corporate Sustainability Systems Specialization of the Sustainable Systems Management Major (SSM). The position will help integrate and strengthen all three teaching programs by addressing core needs as well as augmenting existing teaching capacity. Teaching may include lecture/lab, e-based learning, or other modes of instruction and interaction with students. A demonstrated commitment to excellence in undergraduate and/or graduate teaching and advising is essential. The successful candidate will strive for excellence in academic advising for undergraduate and graduate students as a vital component of student development.

Qualifications

Required:

- A Ph.D. (completed or expected by end of May, 2025) in environmental or civil engineering, ecological engineering, biosystems engineering, water resources engineering, or a closely related field, with demonstrated experience/background in water resources
- An undergraduate degree in an engineering field with current engineering licensure or potential to become a licensed professional engineer
- Evidence of potential to develop extramurally-funded research programs through independent and collaborative research
- Demonstrated commitment to teaching
- Demonstrated effective written communication skills

Preferred:

- Evidence of independent and/or collaborative research experience in quantifying the interactions among biological, chemical and physical processes of water resources in natural and human-impacted systems at one or more ecosystem scales
- Demonstrated and relevant record of publication in peer-reviewed journals
- Experience in effective teaching including active learning and course development
- Ability and flexibility to teach core engineering courses such as thermodynamics
- Effective oral and written communication skills
- Demonstrated commitment to diversity and inclusivity in an academic or professional setting and commitment to supporting the University's goal of creating a positive and inclusive campus climate by advancing diversity, equity, and inclusivity

About the Department of Bioproducts and Biosystems Engineering

The Department of Bioproducts and Biosystems Engineering (bbe.umn.edu) is an internationally renowned academic unit with the core mission of sustainable use of renewable agricultural and natural resources, and protection and enhancement of the environment.

Working at the University

At the University of Minnesota, you'll find a flexible work environment and supportive colleagues who are interested in lifelong learning. We prioritize work-life balance, allowing you to invest in the future of your career and in your life outside of work.

The University also offers a comprehensive benefits package that includes:

- Competitive wages, paid holidays, and generous time off
- Continuous learning opportunities through professional training and degree-seeking programs supported by the Regents Tuition Benefit Program
- Low-cost medical, dental, and pharmacy plans
- Healthcare and dependent care flexible spending accounts
- University HSA contributions
- Disability and employer-paid life insurance

University comprehensive benefits package (cont.)

- Employee wellbeing program
- Excellent retirement plans with employer contribution
- Public Service Loan Forgiveness (PSLF) opportunity
- Financial counseling services
- Employee Assistance Program with eight sessions of counseling at no cost
- Employee Transit Pass with free or reduced rates in the Twin Cities metro area

Please visit the Office of Human Resources website for more information regarding benefits.

How to Apply

Applications must be submitted online at humanresources.umn.edu/content/find-job. Search for **Job ID 365158.** To be considered for this position, please click the Apply button and follow the instructions. You will have the opportunity to complete an online application for the position and attach a cover letter and curriculum vitae. Additional documents may be attached after the application by accessing your "My Job Applications" page and uploading documents in the "My Cover Letters and Attachments" section.

Applicants must submit a cover letter referencing the BBE Ecological Engineering Faculty Position, a detailed curriculum vitae, statements on teaching and research interests that also incorporate DEI perspectives, a research article representative of their work, and a list of three references with contact information (including email addresses). Candidates should include all required application materials **combined into one single PDF document**. Review of applications will begin December 16, 2024 and the position will remain open until filled. To request an accommodation during the application process, please e-mail employ@umn.edu or call (612) 624-UOHR (8647).

Diversity

The University recognizes and values the importance of diversity and inclusion in enriching the employment experience of its employees and in supporting the academic mission. The University is committed to attracting and retaining employees with varying identities and backgrounds.

The University of Minnesota provides equal access to and opportunity in its programs, facilities, and employment without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. To learn more about diversity at the U: http://diversity.umn.edu.

Employment Requirements

Any offer of employment is contingent upon the successful completion of a background check. Our presumption is that prospective employees are eligible to work here. Criminal convictions do not automatically disqualify finalists from employment.

About the University of Minnesota, Twin Cities (UMTC)

The University of Minnesota, Twin Cities (UMTC), is among the largest public research universities in the country, offering undergraduate, graduate, and professional students a multitude of opportunities for study and research. Located in the heart of one of the nation's most vibrant, diverse metropolitan communities, students on the campuses in Minneapolis and St. Paul benefit from extensive partnerships with world-renowned health centers, international corporations, government agencies, and arts, nonprofit, and public service organizations.

At the University of Minnesota, we are proud to be recognized by the Star Tribune as a Top Workplace for 2021, as well as by Forbes as Best Employers for Women and one of America's Best Employers (2015, 2018, 2019, 2023), Best Employer for Diversity (2019, 2020), Best Employer for New Grads (2018, 2019), and Best Employer by State (2019, 2022).