

SOIL AND WATER CONSERVATION CENTER

The College of Agricultural, Consumer and Environmental Sciences (ACES) at the University of Illinois Urbana-Champaign has a rich history of making transformational discoveries in agronomy that continue to improve the world's ability to produce a sustainable, safe, abundant food supply.

We are solving important challenges in water quality and soil health by finding new techniques to grow crops in a way that preserves clean water, nutrient-rich soil, and healthy ecosystems. We will seek to optimize the integration of ecosystem services and agricultural needs.

OPPORTUNITY:

A multidisciplinary center for Soil and Water Conservation will be created in the College of ACES to address global soil health and water quality concerns. It will be multidisciplinary in nature, coalescing the college's significant water and soil expertise and facilitating collaborations among researchers in the Departments of Crop Sciences, Natural Resources and Environmental Sciences, and Agricultural and Biological Engineering. An endowed directorship for the center will direct the collaborations, as well as serve as the first point of contact for external stakeholders. The center will function as an integrated "one stop shop" that brings together faculty, graduate students, and undergraduate researchers to address critical issues related to environmental changes.



Water quality and its direct connection to soil conservation are arguably the most significant production and environmental issues for producers and society as a whole. The stewardship of water and soil will crucially define agricultural sustainability for farmers, corporations, and ultimately consumers. We propose to be part of the process of defining sustainability through research, teaching, and outreach under this umbrella. Our intent is to address these topics in both domestic and international venues. We will welcome and encourage collaborations with other departments across campus.

The College of ACES has strengths related to providing engineering solutions and expertise in water quality, irrigation, soil physics, soil chemistry, and soil quality, as well as water, food, and energy security in a global context and with a systems approach. The center will work with University of Illinois Extension to translate and communicate applied research outcomes to the public, effectively engaging local stakeholders, while also expanding global impact.

Core issues that researchers in this center will address include reduction of nutrient transport in the Mississippi River. The artificial subsurface drainage systems that underpin the extraordinary agricultural productivity in the upper Mississippi River Basin are also a major contributing pathway for nutrients causing the Gulf of Mexico hypoxic zone, one of our nation's most pressing water concerns. Growing global food and biofuel demand combined with increasing societal pressure for clean water mean land-grant university research, teaching, and extension programs in the Midwest must now offer the agricultural community and society knowledge and capacity to meet productivity goals in ways that don't result in environmental degradation.

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RESOURCES REQUIRED:

A core faculty, focused on soils, water, and sustainability education, for the center is essential. As a virtual center, physical space will not be required. In addition, fellowships and scholarships will be offered for outstanding students at the B.S., M.S., and Ph.D. levels.

The center will need:

- (1) Endowed directorship with capacity building/programmatic funding
- (2) Endowment of senior faculty positions
- (3) Fellowship support for graduate students
- (4) Support for scholarships
- (5) Support for undergraduate internships



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