PhD Opportunity in Landscape Ecology

Enhancing Food, Energy, and Water Security in Upper Midwest Landscapes

Dr. Monica G. Turner in the Department of Integrative Biology is seeking a PhD student interested in how ecosystem services associated with food, energy and water (FEW) supplies can be sustained in landscapes of the Upper Midwest during a period of profound environmental change. As part of a new NSF-funded project, the student will join the Turner Lab and be part of a collaborative interdisciplinary team of faculty (Drs. Chris Kucharik, lead PI, Agronomy; Steve Loheide, Civil and Environmental Engineering; and Adena Rissman, Forest and Wildlife Ecology), PhD students, and staff. Our overarching question is: **How do FEW systems of the Upper Mississippi River Basin respond to complex socio-biophysical interactions, and what policies and practices will sustain FEW security and the environment, reduce risk of abrupt change, and promote ecosystem resilience during the 21st century?** Research goals for the Turner Lab include understanding how the amount and connectivity of natural and semi-natural vegetation affects key ecosystem services; assessing whether and how perennial vegetation and land-water interventions can mitigate effects of policy shocks and extreme events on FEW supply; and extending theories of abrupt change to agricultural system, including identifying mechanisms that can amplify or dampen the effects of changing drivers on FEW. This project will involve state-of-the-art ecosystem modeling and spatial analyses; fieldwork is anticipated as we consider biological diversity at different scales.

- This new 4-yr study will build on a strong foundation of prior work on ecosystem services in the Yahara Watershed of southern Wisconsin (see [https://wsc.limnology.wisc.edu/](https://wsc.limnology.wisc.edu/)). The student will be supported by research and teaching assistantships (teaching experience is required for the PhD program) for up to 5 yrs, including tuition remission and benefits (e.g., health insurance).
- For additional information about the Turner Lab, visit [http://landscape.zoology.wisc.edu/](http://landscape.zoology.wisc.edu/+).

**Note.** Monica will be at the ESA meeting in Louisville and would be glad to meet with prospective students who are attending. Please email turnermg@wisc.edu if interested.

**Qualifications.** Applicants must have a strong academic record, including quantitative skills; excellent references; and a keen interest in spatial modeling and analysis, landscape ecology, and ecosystem services in working landscapes. Research experience is desirable. Applications are encouraged from outstanding candidates who enjoy and work well in a collaborative team setting and have excellent communication and writing skills. Prospective applicants are welcome to contact Dr. Turner (turnermg@wisc.edu) regarding their interests.

**To apply.** Graduate applications for the 2020-21 academic year are due December 1, 2019. Applicants should choose “Zoology” as their major (our department was renamed Integrative Biology, but the graduate program name change has not yet taken effect).

UW-Madison is an equal opportunity employer, and specifically invites and encourages applications from women and minorities. The Immigration Reform and Control Act of 1986 requires the University to verify the identity and work authorization of the successful applicant. Any offer of employment is contingent upon verification.

6 August 2019