

Select IGERT Faculty

- **Joseph Fontaine**, UNL, Natural Resources, wildlife ecologist, avian ecology
- **Steve Goddard**, UNL, Computer Science and Engineering, spatial decision support systems
- **Kyle Hoagland**, UNL, Natural Resources, limnology, ecotoxicology
- **John Lenters**, UNL, Natural Resources, climate modeling
- **Gary Lynne**, UNL, Agricultural Economics, ecological economics, behavioral economics
- **Sarah Michaels**, UNL, Political Science, environmental policy
- **Larkin Powell**, UNL, Natural Resources, applied ecology, conservation biology, adaptive management
- **Brigitte Tenhumberg**, UNL, Biological Sciences, population modeling
- **Steven Thomas**, UNL, Natural Resources, ecosystem ecology, river ecology, restoration
- **Dave Wedin**, UNL, Natural Resources, ecosystem ecology
- **Karrie Weber**, UNL, Biological Sciences, microbial ecology
- **J. Allen Williams, Jr.**, UNL, Sociology, environmental sociology, social change, social inequality
- **K. Bryon Williams**, U.S. Geological Survey, quantitative ecology, structured decision making
- **Sandra Zellmer**, UNL, College of Law, environmental policy, law
- **Vitaly Zlotnik**, UNL, Earth and Atmospheric Sciences, hydrogeology, hydrological modeling

The University of Nebraska–Lincoln is an equal opportunity educator and employer with a comprehensive plan for diversity.

Coordinating Committee

The IGERT Coordinating Committee consists of the following University of Nebraska–Lincoln faculty.

- **Craig R. Allen, Chair** (School of Natural Resources)
- **Sherilyn Fritz** (Earth and Atmospheric Sciences)
- **Ashok Samal** (Computer Science and Engineering)
- **Alan Tomkins** (NU Public Policy Center)
- **Andrew Tyre** (School of Natural Resources)

And from other institutions:

- **Lance Gunderson**, Emory University, Environmental Studies
- **Jan Sendzimir**, The International Institute for Applied Systems Analysis, Austria

Collaborating Agencies

- The Nebraska Game and Parks Commission
- The Nature Conservancy
- Headwaters Corporation
- Nebraska Department of Natural Resources
- The International Institute for Applied Systems Analysis (IIASA) in Laxenburg, Austria

Questions? Contact:

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University of Nebraska–Lincoln
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Lincoln NE 68583-0984
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<http://snr.unl.edu/igert/>



IGERT

Integrative Graduate Education and Research Traineeship Program

Resilience and Adaptive Governance in Stressed Watersheds

A Ph.D. Research and Traineeship Program

Offered by the University of Nebraska–Lincoln

Funded by the National Science Foundation IGERT Program



<http://snr.unl.edu/igert/>

<http://www.igert.org/>

Resilience and Adaptive Governance in Stressed Watersheds

What is an IGERT?

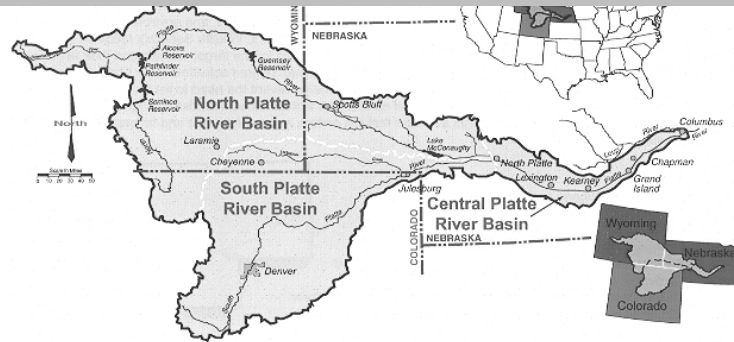
Since 1997, the National Science Foundation has supported the Integrative Graduate Education and Research Traineeship (IGERT) program. The IGERT program intends to meet the “challenges of educating U.S. Ph.D. scientists, engineers, and educators with the interdisciplinary backgrounds, deep knowledge in chosen disciplines, and technical, professional, and personal skills to become . . . the leaders and creative agents for change.” The program is interested in developing novel, new models for doctoral education, and providing training in an environment of collaborative research cutting across disciplines.

“Resilience and Adaptive Governance in Stressed Watersheds” was awarded to the University of Nebraska–Lincoln (UNL) in 2009.

Program Overview

The vision of the UNL IGERT is cross-disciplinary training for graduate students from natural, computational, and social sciences that develops a deep understanding of the complex ecological and societal systems involved in managing water resources in the 21st century, and the development of sophisticated tools for decision support, management, and restoration.

In addition to substantive and interdisciplinary academic knowledge, trainees will learn about real-world policy applications that transfer knowledge in a way that is useful to policymakers. Research will focus on management of over-appropriated watersheds in regions where agriculture is a dominant land-use, food production and critical habitats rely on limited water resources, and disparate and long-term data exist but require synthesis.



A Few Research Areas

Analyze societal and ecological dimensions of resilience management in systems where water is the critically limiting resource. This includes formulating more effective policies by developing social, cultural, and economic alternative scenarios.

How can adaptive management and governance build and enhance resilience in stressed watersheds? System resilience can be challenged if the existing regime is trapped in a degraded state—resilience is pathological and must be carefully lowered to allow a transition to a new regime. In such cases, we are interested in fostering transitions to new management regimes.

What are the critical thresholds to be avoided, and how do we identify them? Which ecological, social and economic thresholds are important in the Platte River system? Developing a framework to provide a conceptually unified and simple view of datasets from different domains will facilitate broader analyses by researchers.

Investigate tradeoffs among water demands for agricultural, ecological, industrial and urban uses and how they can be resolved to enhance resilience. Integrate historic and contemporary water-quantity and water-quality information, land-cover characteristics, and population census data for birds and other major wildlife species to reduce the independent variables and simplify the analysis.

Traineeship Program Benefits

- **Stipend** of \$30,000 annually for 2 to 3 years, with additional funding at department levels
- Paid **tuition and fees**, partial support for health insurance
- Funds available for **conference travel and research supplies**
- **Computers**
- **Externships** with agencies (e.g., Headwaters Corporation, The Nature Conservancy, Nebraska Game and Parks Commission, Nebraska Department of Natural Resources) to expose trainees to real-world applications
- **International experience**, coordinated by the International Institute for Applied Systems Analysis in Austria

Eligibility and Application

- **Must be U.S. citizen or permanent resident.**
- First-generation college students and minorities are strongly encouraged to apply.
- Contact a member of the IGERT Coordinating Committee regarding your interest in applying.
- Apply to the UNL doctoral program department you are interested in, for example: Agricultural Economics, Computer Science/ Engineering, Economics, Geosciences, Natural Resources, Political Science, Sociology, etc. Request a nomination for a UNL IGERT Graduate Assistantship with your statement of purpose. Verify application procedures, deadlines, and requirements directly with the department(s).
- Select a faculty advisor.
- Student and advisor must submit a letter of intent to the IGERT Coordinating Committee or submit through the Web site.
- IGERT Trainees will be selected from a multidepartment pool of qualified applicants.