

Faculty Applicant (Environmental Engineering)

Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37023
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EDUCATION

The University of North Carolina at Chapel Hill, School of Public Health, Chapel Hill, NC
PhD Environmental Sciences and Engineering 2005
Area of Specialization: Population Ecology
Thesis: "Foraging behavior with short and long-range movement in heterogeneous environments"
Advisor: Dr. Jim Jenk

Northwestern University, Evanston, Illinois
MS Biological Sciences 1999
BA Integrated Science, with honors 1993

AWARDS and HONORS

Cracheter Postdoctoral Fellowship, US Department of Engineering 2005-present
ARCS Foundation Fellowship 2003-2005
National Science Foundation Graduate Fellowship 2000-2003
Phi Beta Kappa 1993

RESEARCH INTERESTS

- Theoretical and field study of ecological communities
- The roles that spatial patterns and processes play in shaping communities
- How populations and processes acting on different spatio-temporal scales affect the behavior of ecological systems
- Influences of disturbance size and frequency on landscape structure

RESEARCH EXPERIENCE

Oak Ridge National Laboratory Environmental Sciences Division
Postdoctoral Fellow 2005-present
Develop quantitative theory of hierarchical structure in ecological systems. Analyze how ecological communities reflect environmental heterogeneity at different scales. Conduct numerical study of foraging behavior with short and long-range movement in heterogeneous environments.
Research Advisor: Dr. Stan H. Smith

University of North Carolina School of Public Health, Department of Environmental Sciences
PhD Candidate 2002-2005
Conducted theoretical analysis of spatial scale and environmental heterogeneity in models of predator-prey communities. Performed analytical and numerical analysis to show how species interactions can sharpen underlying environmental patterns and how heterogeneous environments can stabilize predator and prey populations.
Engineering Research Advisor: Dr. Jim Jenk

Northwestern University, Department of Biochemistry, Molecular Biology, and Cell Biology
Undergraduate Honors Researcher 1993
Investigated primary events of bacterial photosynthesis. Isolated and performed spectral analysis of photosynthetic reaction centers.
Research Advisor: Dr. Peter Hawk

PUBLICATIONS and PRESENTATIONS

Phillips, S and FJC. 2005. Cowbird predation on starlings and swallows: attack and interspecific defense, *Avia* 90:503-505.

FJA and J Randolph. 2004. Avian predation on *Anolis* lizards in the northeastern Caribbean: an inter-island contrast, *Ecology* 70:617-628.

FJA and J Randolph. Predation across spatial scales in heterogeneous environments, *Theoretical Population in Biology* (in press Elsevier).

FJA and F Green. Species interactions in space, symposium paper presented at the 2003 meeting of the Ecological Society of America, Chadwick, ME (submitted for publication to *Ecology*).

REVIEWER

The American Ornithologist
Backyard Birder

TEACHING EXPERIENCE

University of North Carolina-Chapel Hill, Nature Education Seminar, Chapel Hill, NC

Instructor, Ecosystems Ecology 2002-2004

Lectured 20 students on ecology and led weekend hikes to learn animal tracking and wilderness skills.

Stanford University, Department of Biology, Palo Alto, CA

Co-Instructor, *Biology of Birds* 1996-1997

Conducted a weekly help session, graded tests and homework, assisted in designing tests, co-lectured, and led field trips to the Palo Alto Baylands Nature Preserve.

Core Biology Laboratory

Teaching Assistant, Population Ecology 1995

Taught ecology lab sessions and led discussion sections.

UNIVERSITY SERVICE

UNC-CH Keep Carolina Green Coalition

Founder and Tour Guide 2002-2005

Conducted botanical tours of the UNC campus, emphasizing native plants and how they are endangered by traffic and construction. Recruited over 50 new members and successfully applied for funds from the UNC Student Government, thereby ensuring the Coalition's continuity.

Northwestern Students for a Better Environment

President and Member 1994-1999

Organized student rallies, raised funds for radio and television ads, and initiated a letter-writing campaign to the state legislature which resulted in protection of endangered Picotee Lake wetlands.

COMMUNITY SERVICE

Animal Protection Society of NC, Volunteer Dog Trainer 2002

Habitat for Humanity, Volunteer 2000-2001

Food Bank of Central Illinois, Volunteer 1999