

Pat M. Martin

Environmental Sciences Division
Oak Ridge National Laboratory
Oak Ridge, TN 37831-6036

(615) 483-1234
martin@gmail.com
www.martinpat.linkedin.com

EDUCATION

Rice University (RU), Houston, TX

Ph.D. in Ecology and Evolutionary Biology

May 2010

Specialization: Population Ecology

Masters of Arts in Ecology and Evolutionary Biology

May 2006

Northwestern University (NU), Evanston, IL

May 2003

Bachelor of Arts in:

Biological Sciences; Ecology and Evolutionary Biology

Biochemistry, Molecular Biology and Cell Biology *with honors*

Integrated Science Programs *with honors*

FELLOWSHIPS AND AFFILIATIONS

Hollander Postdoctoral Fellowship (US D.O.E.)

May 2010-Present

Andrew Mellon Foundation Graduate Research Fellowship

November 2008

ARCS Foundation Fellowship

October 2007-July 2008

National Science Foundation Graduate Fellowship

January 2006-May 2010

Phi Beta Kappa

January 2004

RESEARCH EXPERIENCE

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

Postdoctoral Research

May 2010-Present

Research Advisor: Dr. Stephen H. Smith

- Development of quantitative theory of hierarchical structure in ecological systems
- Analysis of how ecological communities reflect environmental heterogeneity at different scales
- Numerical study of foraging behavior with short and long range movement in heterogeneous environments

RU Department of Ecology and Evolutionary Biology, Houston, TX

Doctoral Research

January 2005-December 2010

Research Advisor: Dr. Abraham Simpson

- Field study of the impact of avian predation on *Anolis* lizards in the eastern Caribbean documents the importance of differences in spatial scale between prey and predators
- Theoretical analysis of spatial scale and environments heterogeneity in models of predator-prey communities
- Analytical and numerical work shows how species interaction can sharpen underlying environmental patterns and how heterogeneous environments can stabilize predator and prey populations

NU Department of Biochemistry, Molecular Biology and Cell Biology, Evanston, IL

Undergraduate Honors Research

August 2001-May 2004

Research Advisor: Dr. Peter T. Hart

- Investigation of primary events of bacterial photosynthesis
- Isolation and spectral analysis of photosynthetic reaction centers

Celanese Corporation, Summit, NJ

Undergraduate Summer Research

May 2002- August 2003

Research Advisor: Dr. Nicholas H. Michaels

- Organometallic catalysts research
- Preparation of catalysis, chemical characterization of reaction products, mathematical analysis of data

RESEARCH INTERESTS

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

TEACHING EXPERIENCE

Rice University, Houston, TX

August 2005-December 2008

Co-Instructor (with Dr. James Fletcher)

- Biology of Birds (Fall 2008)
- Developed and presented lectures three times a week
- Organized and implemented field for 100+ students

Teaching Assistant

- Systematics and Ecology of Vascular Plants (Fall 2006)
- Directed laboratory and fields trips
- Graded lab assignments and met individually with students to address concerns

Teaching Assistant

- Introductory Lab Module in Ecology and Evolutionary Biology (Spring 2005)
- Conducted lab and discussion sections

Kendall College, Evanston, IL

Instructor

August 2003-May 2004

- Led chemistry laboratory sessions
- Sole responsibility for laboratory in biochemistry, general and organic chemistry

Association of Adirondack Scout Camps, Long Lake, NY

Wilderness Guide

March 2002

- Directed groups of 10 students on six-day canoe and hiking trips
- Taught Adirondack natural history

UNIVERSITY SERVICE

Graduate Student Association: Treasurer

2005

Tour Guide: Ecology laboratory teaching assistant orientation

2004

Student Advisor: Integrated Science Program, Northwestern University

2002-2004

PUBLICATIONS AND PRESENTATIONS

Fletcher, J. and P.M. Martin. 2007. Scrub Jay predation on starlings and swallows; attack and Interspecific defense, *Condor* 96;503-505.

Martin, P.M. and A. Simpson. 2006. Avian predation on *Anolis* lizards in the northeastern Caribbean: an interisland contrast, *Ecology* 76;617-628.

Martin, P.M. and A. Simpson. Pattern and stability in predator-prey communities; how diffusion in spatially variable environments affects the Lotka-Volterra model, *Theoretical Population Biology* (in press).

Martin, P.M. and A. Simpson. Predation across spatial scales in heterogeneous environments, *Theoretical Population Biology* (in press).

Martin, P.M. and A. Simpson. Species interactions in space, symposium paper presented at the 2005 meeting of the Ecological Society of America, Snowbird, UT; to appear in R. Ricklefs and D. Schuller, eds., *Historical and Geographical Determinants of Community Diversity*, University of Chicago Press, Chicago.

Martin, P.M. Species interactions across spatial scales, presented at the November 2004 meeting on Bridging the Gap Between Theoretical and Empirical Ecology, Broadus, TX.

REVIEWER

The American Naturalist