**Pat M. Martin**

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**EDUCATION**

Rice University (RU), Houston, TX

**Ph.D. in Ecology and Evolutional Biology**  May 2010

*Specialization: Population Ecology*

**Masters of Arts in Ecology and Evolutional 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 date

**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; attach 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 Lotak-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. Specials 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. Schulter, 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, Broaddus, TX.

**REVIEWER**

*The American Naturalist*