

CURRICULUM VITAE FOR NICOLA PLOWES

Objective

To perform essential research in social insect behavior that is applicable in the understanding of complex adaptive systems, conservation biology, behavioral ecology and the evolution of sociality in social insects.

To inspire and guide my students to fulfill their roles as the next generation of ecologically conscious and rational leaders.

Education

2008 **Ph. D. Entomology**. University of Connecticut.

2001 Participant in The Ant Course, an intensive course in myrmecology held by the American Museum of Natural History and California Academy of Sciences in Portal, AZ.

1999 **B.S. Biology** (Ecology, Evolution and Conservation). The University of Texas at Austin.

Publications

Plowes NJR & Adams ES (2005) An empirical test of Lanchester's square law: mortality during battles of the fire ant *Solenopsis invicta*. Proceedings of the Royal Society of London, Series B. 272:1809-1814.

Russell, KS, **Plowes, NJR**, Bender, JR (2001) Effects of cytokines on vascular endothelial synthesis and secretion of neuregulin. American Heart Association Scientific Sessions. Publishing ID: 989 Abstract ID: 116585.

Research and Professional Experience

2008- present **Lecturer/Post-Doctoral Researcher**, Arizona State University, Tempe, AZ. I am currently embarking on a new research project exploring the behavioral ecology of foraging in the harvester ant *Messor pergandei*. I am interested in the individual behaviors which result in group foraging and both the proximate and ultimate causes of the rotating foraging columns which result.

2001-2008 **Graduate assistant/Teaching assistant**, University of Connecticut, Storrs, CT. Thesis topic: Self-Organized Conflicts in Territorial Ants. My work analyzed conflicts and use of space in ants as model systems for understanding self-organized conflicts. My research combined experimental fieldwork with lab manipulations and computer simulations. I taught introductory biology and ecology labs to undergraduates from 2002-2008.

2000-2001 Lab research assistant, Cardiology Department, Yale University, New Haven. I conducted experiments investigating signal transduction pathways in heart tissues. We used cellular and molecular biological techniques to answer specific questions about the stimuli for, and effects of, neuregulin in vivo and vitro.

1999-2000 Lab research assistant, Gilbert Lab, The University of Texas, Austin, TX.

I performed field and lab research of fire ant biocontrol agents. In addition to creating and publishing a key to the ant taxa in Austin, I identified and curated voucher specimens and surveyed 13 Texan counties for ant diversity.

Teaching Experience

- 2008 – present. **Lecturer.** Arizona State University, School of Life Sciences.
 - Introduction to Biology for Majors: Ecology and Evolution (Fall 2008, Spring 2009)
- 2002-2008 **Teaching Assistant.** University of Connecticut, Ecology and Evolutionary Biology Department.
 - Ecology Discussion and Lab (Fall: 2007, 2006, 2005, 2004)
 - Introduction to Biology (plant based) (Spring 2006, Spring 2007)
 - Introduction to Biology Lab (for non-majors) (Spring: 2005, 2006)
 - Introduction to Biology Lab (Spring: 2002, 2003, 2004)

Fellowships/Grants/Awards

2007 First Place for the President's Prize (Entomological Society of America)
2007 Doctoral Fellowship from UCONN Graduate School (UCONN)
2007 Fellowship from the Center For Environmental Sciences and Engineering (UCONN)
2007 Demi Fellowship from the Department of Ecology and Evolutionary Biology (EEB)
2006 University of Connecticut Penner Endowment, EEB Summer Fellowship.
2005 University of Connecticut Penner Endowment, EEB Summer Fellowship.
2004 University of Connecticut Penner Endowment, EEB Summer Fellowship.

Presentations

- PhD defense (2008): Self Organized conflicts in territorial ants.
- Social Insect Research Group (2008), SOLS ASU: Modeling the spatio-temporal dynamics of territorial battles of the pavement ant *Tetramorium caespitum*.
- Entomological Society of America Annual Meeting (2007): Self-organizing conflicts: Modeling the spatio-temporal dynamics of territorial battles of the pavement ant *Tetramorium caespitum*. (Winner of the Student Competition for the President's Prize).
- Harvard Mind Brain Behavior: War and Conflict (2006): An Empirical Test of Lanchester's Square Law: Mortality During Battles of the Fire Ant *Solenopsis invicta*.
- Graduate Student Symposium (2006): When to follow a leader: recruitment behavior in the Pavement ant, *Tetramorium caespitum*.
- Graduate Student Symposium (2005): How to win an Ant War: Territoriality and Battles.
- NEEC (2005): How to win a battle against [sic] a colony of ants: Territory and War.
- Graduate Student Symposium (2002): Small warriors: the costs of waging war.
- UT Austin, Mueller Lab (2001): Ant wars.
- Invasive Biology (2006): Assessing Biotic Invasions: Space and Time.
- Insect Phylogeny (2002): Phylogeny of the Hymenoptera and Evolution of Sociality.

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- Decision making in Animals (2004): Introduction to Stochastic Dynamic Programming.
- Seminar in Biodiversity (2001): Modeling Ant Battles.
- Connecticut Entomological Society (2005): Identification of Common New England Ants.