

Matina C. Donaldson-Matasci

(formerly Matina C. Donaldson)

University of Arizona

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Research**Positions****Postdoctoral research associate.** University of Arizona, Department of Ecology & Evolutionary Biology. July 2009–present.

Research topic: Communication and collective behavior in social insects

Research group: Social Insect Lab (Anna Dornhaus)

Postdoctoral research associate. Max Planck Institute for Evolutionary Anthropology, Department of Evolutionary Genetics. June 2008–June 2009.

Research topic: Information and evolution in biological systems

Research group: Theoretical Biology (Michael Lachmann)

Education**Ph.D. in Biology.** University of Washington, June 2008.Dissertation: *Adaptation in a changing environment: Phenotypic plasticity in response to environmental uncertainty and information*

Advisor: Carl Bergstrom

B.A. in Mathematics. Reed College, May 1996.Thesis: *Tiling with Dominoes*, on the relationship between group theory and graph theory

Advisor: Joe Buhler

Peer-reviewed publications**Donaldson-Matasci MC**, CT Bergstrom, and M Lachmann. When unreliable cues are good enough. *American Naturalist* 182 (3): 313-327.**Donaldson-Matasci MC**, G DeGrandi-Hoffman, and A Dornhaus (2013). Bigger is better: honey bee colonies as distributed information-gathering systems. *Animal Behaviour* 85 (3): 585-592. **Highlighted in *Nature* 496 (7443): 8.****Donaldson-Matasci MC** and A Dornhaus. (2012) How habitat affects the benefits of communication in collectively foraging honey bees. *Behav Ecol & Sociobiol* 66 (4): 583-592.**Donaldson-Matasci MC**, CT Bergstrom, and M Lachmann. (2010) The fitness value of information. *Oikos* 119 (2): 219-230.**Donaldson-Matasci MC**, M Lachmann, and CT Bergstrom. (2008) Phenotypic diversity as an adaptation to environmental uncertainty. *Evol Ecol Research* 10 (4): 493-515.**Donaldson MC**, M Lachmann, and CT Bergstrom. (2007) The evolution of functionally referential meaning in a structured world. *J of Theor Biol* 246 (2): 225-233.

Other publications and manuscripts

Nguyen N, **MC Donaldson-Matasci**, and MC Shin (2013). Improving pollen classification with less training effort. IEEE Workshop on the Applications of Computer Vision (WACV). January 17-18, 2013.

Donaldson-Matasci MC and A Dornhaus. Dance communication narrows resource use in pollen-foraging honey bees. *In review*.

Donaldson-Matasci MC, M Rivera*, and A Dornhaus. How do honey bees decide to abandon a resource? *In prep*. * Undergraduate author

Donaldson-Matasci MC. (2011) Book review of "Honeybee Democracy," by Thomas D. Seeley. *The Quarterly Review of Biology* 86 (4): 360.

Teaching and Mentoring

Research Mentor, University of Arizona, Fall 2009-present. Mentored 15 undergraduates from Pima Community College & University of Arizona, and one high school student.

KEYS Summer Internship Mentor, University of Arizona, Summer 2011. Mentored a high school student for a 5-week internship involving an individual research project.

Instructor, Pima Community College, Fall 2010 (PERT Postdoctoral Program.) Taught "Natural History of the Desert Southwest" for non-science majors.

Instructor, MPI for Evolutionary Anthropology, Fall 2006. Taught a course in evolutionary game theory to a multidisciplinary group of graduate students and postdocs.

Co-instructor, MPI for Evolutionary Anthropology, Spring 2005. Co-taught a course on group selection to a multidisciplinary group of graduate students & postdocs.

Outreach

Arizona Insect Festival, University of Arizona, Fall 2012 & 2013. Organized an exhibit showcasing social insects, with live ants & bees, and hands-on activities for children. Promoted event on Twitter via @AZInsectFest.

Animal Behavior Society Outreach Fair, Wonderlab, Bloomington IN, Summer 2011. Co-organized an active exhibit on honey bees for public visitors to the science museum.

Passport to High School Summer Program, University of Arizona, Summer 2011 & 2012. Gave lab tours to junior high school students from disadvantaged backgrounds.

Integration of Science and Computing Summer Camp, University of Arizona, Summer 2011 & 2012. Led a combined lecture and activity session on plant structure and function for junior high school students learning about computer vision.

WISE Expanding Your Horizons Workshop, University of Arizona, Spring 2011. Co-organized a workshop on careers in animal behavior for junior high school girls.

Fellowships and Awards

PERT Postdoctoral Fellow, an NIH-funded program to foster a connection between university researchers and community college students (2009–2012.)

NSF Graduate Research Fellow (2004–7.)

Selected by the Zoology department at the University of Washington to receive the merit-based **ARCS Fellowship** for incoming Ph.D. students (2002.)