

**Rebecca M. Clark**  
**Curriculum Vitae**

**Department of Entomology**  
Texas A&M University  
TAMU 2475  
College Station, TX 77843

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[rmclark1@tamu.edu](mailto:rmclark1@tamu.edu)  
[www.acromyrmex.net](http://www.acromyrmex.net)

**Expertise in** Nutritional physiology, behavioral ecology, social evolution, social insects, leafcutter ants, crickets

**APPOINTMENTS**

2011- Postdoctoral Research Associate, Department of Entomology, Texas A&M University:  
Nutrient regulation and physiological allocation in wing-dimorphic crickets (Supervisors:  
Spencer Behmer and Anthony Zera)

**EDUCATION**

2011 Ph.D., Arizona State University (Biology; Supervisor: Jennifer H. Fewell)  
2003 B.A., Tufts University (Bio-Psychology; Supervisor: Klaus Miczek)

**PUBLICATIONS**

**Refereed Articles**

10. Clark, R.M., Zera, A.J., and Behmer, S.T. (2015). Nutritional physiology of life history trade-offs: how food protein-carbohydrate content influences life-history traits in the wing-polymorphic cricket *Gryllus firmus*. *Journal of Experimental Biology* 218:298-308.
9. Clark, R.M., and Fewell, J.H. (2014). Transitioning from unstable to stable colony growth in the desert leafcutter ant *Acromyrmex versicolor*. *Behavioral Ecology and Sociobiology* 68:163-171.
8. Clark, R.M., and Fewell, J.H. (2014). Social dynamics drive selection in cooperative associations of ant queens. *Behavioral Ecology* 25:117-123.
7. Overson, R., Gadau, J., Clark, R.M., Pratt, S.C., and Fewell, J.H. (2014). Behavioral transitions with the evolution of cooperative nest founding by harvester ant queens. *Behavioral Ecology and Sociobiology* 68:21-30.
6. Clark, R.M., McConnell\*, A., Zera, A.J., and Behmer, S.T. (2013). Nutrient regulation strategies differ between cricket morphs that trade-off dispersal and reproduction. *Functional Ecology* 27:1126-1133.
5. Kang, Y., Clark, R., Makiyama, M., and Fewell, J. (2011). Mathematical modeling on obligate mutualism: Interactions between leaf-cutter ants and their fungus garden. *Journal of Theoretical Biology* 289:116-127.
4. Holbrook, C.T., Clark, R.M., Moore, D., Overson, R.P., Penick, C.A., and A.A. Smith. (2010). Social insects inspire human design. *Biology Letters* 6(4): 431-433.

- Holbrook, C.T., Clark, R., Jeanson, R., Bertram, S., Kukuk, P., and Fewell, J.H. (2009). Emergence and consequences of division of labor in forced associations of the normally solitary halictine bee *Lasioglossum* (Ctenonomia) NDA-1. *Ethology* 115:301-310.
- Jeanson, R., Clark, R., Holbrook, C.T., Bertram, S., Fewell, J.H., and Kukuk, P. (2008) Division of labour and socially-induced changes in response thresholds in associations of solitary Halictine bees. *Animal Behavior* 76:593-602.
- Clark, R., Anderson, K.E., Gadau, J., Fewell, J.H. (2006) Behavioral regulation of genetic caste determination in a *Pogonomyrmex* population with dependent lineages. *Ecology* 87(9): 2201-2206.

### Book Chapters

- Clark, R., Fewell, J.H. (2004) Eusociality. In: Beckoff, M., ed. *The Encyclopedia of Animal Behavior*. Greenwood Press: Connecticut. 992-993.

### Other Publications

- Clark, R.M. and C.T. Holbrook. (2010) Ant Farm: Ask-a-Biologist activity for the classroom and home. *Ask-A-Biologist* [http://askbiologist.asu.edu/sites/default/files/resources/activities/ant\\_farm/ant\\_farm\\_activity\\_packet.pdf](http://askbiologist.asu.edu/sites/default/files/resources/activities/ant_farm/ant_farm_activity_packet.pdf)
- Clark, R.M. (2009) Ant Farm. *Ask-A-Biologist* [http://askbiologist.asu.edu/explore/ant\\_farm](http://askbiologist.asu.edu/explore/ant_farm)
- Clark, R.M. (2009) Collecting Ants. *Ask a Biologist* <http://askbiologist.asu.edu/explore/collecting-ants>
- Clark, R.M. (2009) Cool Ant Experiments. *Ask-A-Biologist* <http://askbiologist.asu.edu/ant-experiments>
- Holbrook, C.T. and R.M. Clark. (2009) Secrets of a superorganism. *Ask-A-Biologist* <http://askbiologist.asu.edu/content/secrets-superorganism>

### TALKS

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| 2014 | Communal nutrition and the division of labor in leafcutter ants.<br>University of California at Riverside; University of Texas at Tyler   |
| 2013 | Nutrition in insects: A tale of two paradigms. Department of Entomology Seminar,<br>Texas A&M University.   |
| 2007 | The sociality paradox: Social organization in <i>Pogonomyrmex</i> queen associations.<br>HexaPodium, Center for Insect Science, University of Arizona and Arizona State<br>University |

### AWARDS AND HONORS

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| 2010 | First Place, Student Competition, Entomological Society of America Annual<br>Meeting |
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### GRANTS AND FELLOWSHIPS

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| 2013      | NSF REU (supplement to NSF IOS-1121960) "Diet composition and feeding<br>strategies of <i>Gryllus texensis</i> crickets," Co-PI: Spencer Behmer; \$3200 |
| 2010-2012 | NSF IOS-1011171 "Dissertation Research: Regulation of colony growth in<br>leafcutter ants," Co-PI: Jennifer Fewell (\$13,334)                           |

- 2010-2011 NSF IOS-0964277 “Conference Grant: Social Biomimicry: Conference on Insect Societies and Human Design,” PI: Jennifer Fewell (\$16,838)
- 2009-2010 Arizona State University, Frontiers in Life Sciences Conference Grant: “Social Biomimicry: Insect Societies and Human Design,” Co-PI with C.T. Holbrook, D. Moore, R.P. Overson, C.A. Penick, and A.A. Smith (\$29,975)
- 2009-2010 Arizona State University, Graduate and Professional Students Association Event Grant, “Social Biomimicry: Insect Societies and Human Design,” Co-PI with C.T. Holbrook, D. Moore, R.P. Overson, C.A. Penick, and A.A. Smith (\$2,000)
- 2007 Sigma Xi Grants-in-Aid of Research, “Nutritional dynamics of leafcutter ant colonies: Characterizing the relationship between the fungal substrate and fungus growth,” (\$400)
- 2006 Arizona State University, Graduate and Professional Students Association, “Regulation of leafcutter and colony growth by its mutualist fungus: A stoichiometric approach,” (\$2000)

## TEACHING

### Biostatistics Workshops

- 2014 Open-Source for Open Science – Evolution. Introduction to R. Ecology and Evolutionary Biology Program, Texas A&M University.  
Open-Source for Open Science. Introduction to R; Publication-Quality Graphics. Ecology and Evolutionary Biology Program, Texas A&M University.
- 2012 Using R for Behavioral Analysis. School of Life Sciences, Arizona State University.

### Teaching Assistant, Arizona State University

- General Genetics (Summer 2010, Spring 2011).  
General Biology I (Fall 2006-2007, 2008-2010, Spring 2010).  
Honors Lab Instructor, General Biology I. (Fall 2008).  
Human Anatomy and Physiology (Fall 2004-2005, Spring 2005-2006, Summer 2009).  
Introductory Biology for Non-Majors (Fall 2003, Spring 2004).

### Drop-in Tutor, Arizona State University

- American Indian Institute. (Fall 2005-Summer 2006) Writing, Biology, Psychology, and Statistics for undergraduate Native American students.

### Writing Fellow, Tufts University

- Writing, Thinking, and Speaking Center (Fall 2000 - Spring 2003) Taught effective writing and revision strategies to students in history, biology, psychology, and engineering.

## MENTORING

### Honors Thesis

- 2005-2010 Kimberly Shaffer, ASU, “Identification of an exudate produced by fungal gardens of the desert leafcutter ant *Acromyrmex versicolor*,” (co-mentored with Jennifer Fewell); Master’s of Business, ASU
- 2007-2009 Jennifer Hale, ASU, “Division of labor as a function of *A. versicolor* worker size,” (co-mentored with Jennifer Fewell); Master’s in Biology, The Ohio State University

- Leah Drake, ASU, “Division of labor scales with colony size in desert leafcutter ants,” (co-mentored with Jennifer Fewell); Master’s in Teaching, University of San Francisco  
2004-2005 Eric Ovalle, ASU, “The division of labor in small social groups of the seed harvester ant *Pogonomyrmex barbatus*.” (co-mentored with Jennifer Fewell)

### **Research Students**

- 2013 Lewis Sherer, TAMU  
2012 Kerstin Alander, TAMU, “Diet composition and feeding strategies of *Gryllus texensis* crickets”  
Emily Franco, TAMU  
2011 Matthew Barnard, ASU  
2010 Daeho Pak, ASU  
2009 Sarah Drayer, ASU  
Rini Parekh, ASU  
2008 Aaron Bynum, ASU; now D.M.D.  
2005 Carmenlita Chief, ASU; Currently earning a Master’s of Public Health at the University of Arizona  
Antonio Benavidez, ASU; Master’s of Public Policy, Harvard Kennedy School of Government

### **SERVICE**

#### **Peer Review**

*Behavioral Ecology, Behavioral Ecology and Sociobiology, Behavioural Processes, Ecological Entomology, Functional Ecology, Insectes Sociaux, the Journal of Insect Physiology, Oecologia, Philosophical Transactions of the Royal Society B, Physiological and Biochemical Zoology*

#### **Grant Review**

Graduate and Professional Students Association, Arizona State University, 2005

#### **Student Committee Representative**

North American Section to the International Committee, International Union for the Study of Social Insects (IUSI), 2010

Research and Training Initiatives Committee, School of Life Sciences, 2005-2008

Animal Behavior Student Rep, School of Life Sciences, Arizona State University, 2004-2006

#### **Web Administrator**

Graduate Student Blackboard Site. Created and managed a site for over 200 graduate students in the School of Life Sciences, 2008-2009

Social Insect Research Group, Arizona State University, 2006-2009

### **PROFESSIONAL AFFILIATIONS**

Society for Integrative and Comparative Biology (SICB)

International Union for the Study of Social Insects, North American Section (NAS-IUSI)

Entomological Society of America (EntSoc)

Association for Women in Science (AWIS)

Phi Beta Kappa National Honors Society