

## KENNETH J. HOWARD

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### Education

- Ph.D., expected May, 2007, Zoology, University of Wisconsin, Madison, WI  
Thesis title: Alternative colony-founding behavior in the cavity-nesting ant, *Temnothorax longispinosus*  
Committee: Robert Jeanne (advisor), Jeffrey Baylis, Janette Boughman, Anthony Ives, and Ken Raffa.
- MS, 2003, Zoology, University of Wisconsin-Madison, Madison, WI.  
Masters thesis title: Foraging and growth strategies of the swarm-founding wasp, *Polybia occidentalis*.
- BS, 1998, High Honors in Biology, Davidson College, Davidson, NC.  
Honors thesis title: Queen-worker conflict in *Leptothorax* ants.

### Positions Held

- Teaching Assistant for Animal Biology Lab, Department of Zoology, University of Wisconsin. January – May 2000, September 2004 - present
- Teaching Assistant for Introduction to Biology, Department of Zoology, University of Wisconsin. January – May 2004
- Benthic Aquatic Macroinvertebrate Technician, Duke Power Environmental Labs, Mecklenburg County, NC. October 1997- June 1998
- Research Assistant, for Dr. Valerie Banschbach, Davidson College. June 1996- August 1996

### Selected Honors, Grants and Fellowships

#### Teaching awards

- Wm. C. Burns Teaching Award, Department of Zoology, U. of Wisconsin, Madison, 2006
- Howard Hughes Medical Institute Teaching Fellowship, 2004, to participate in the Howard Hughes Medical Institute New Generation Program for Scientific Teaching and mentor an undergraduate student

#### Graduate research awards

- National Science Foundation Graduate Research Fellowship, 2000-2003. Effects of colony stage on worker tempo in swarm-founding wasps.
- National Science Foundation Graduate Research Fellowship Travel Grant, 2001. Foraging behavior during the pre-emergence period of the swarm-founding wasp, *Polybia occidentalis*
- Kinney Award, spring 2006. Travel to the International Union for the Study of Social Insects international meeting in Washington, D.C., July, 2006. Department of Entomology, University of Wisconsin
- Emlen Award, 2003. Queen dimorphism in *Leptothorax longispinosus*. Department of Zoology, University of Wisconsin
- John Jefferson Davis Research Award, 2001. Foraging behavior during the pre-emergence period of the swarm-founding wasp, *Polybia occidentalis*. Department of Zoology, University of Wisconsin
- University Graduate Fellowship, 1999-2000. University of Wisconsin-Madison

#### Undergraduate awards

- Watson Fellowship, 1998-99. Recruitment to prey in *Eciton*, *Dorylus*, and *Aenictus* army

- ants. Thomas J. Watson Foundation
- Phi Beta Kappa, 1998
- Sigma Xi Excellence in Undergraduate Research Award, 1998
- Barry M. Goldwater Scholarship, 1997-98. For excellence in mathematics, science, and engineering
- Howard Hughes Summer Research Grant, summer 1997. Queen-worker conflict in *Leptothorax* ants. Davidson College
- Grants-in-Aid of Research, 1997. Queen-worker conflict in *Leptothorax* ants. Society of the Sigma Xi

### Publications (\*denotes undergraduate author)

- **Howard, K.J.** and D. Kennedy\* (submitted). Mating behaviors of the queen polymorphic ant *Temnothorax longispinosus*. *Ethology*.
- Bouwma, A.M., **K.J. Howard**, and R.L. Jeanne. (in press) Rates of non-legionary ant predation on colonies of a swarm-founding social wasp. *Biotropica*
- **Howard, K.J.** 2006. Three queen morphs with alternative nest-founding behaviors in the ant, *Temnothorax longispinosus*. *Insectes Sociaux* 53: 480-488.
- **Howard, K.J.** and R.L. Jeanne. 2005. Shifting foraging strategies in colonies of the social wasp *Polybia occidentalis* (Hymenoptera, Vespidae). *Behavioral Ecology and Sociobiology* 57: 481-9
- Bouwma, A.M., **K.J. Howard**, and R.L. Jeanne. 2005. Parasitism in a social wasp: effect of gregarines on foraging behavior, colony productivity, and adult mortality. *Behavioral Ecology and Sociobiology* 59: 222-233
- **Howard, K.J.** and R.L. Jeanne. 2004. Rates of brood development in a social wasp: effects of colony size and parasite infection. *Insectes Sociaux* 51: 179-185
- **Howard, K.J.**, A.R. Smith, S. O'Donnell, and R.L. Jeanne. 2002. Novel method of swarm emigration by the epiponine wasp, *Apoica pallens* (Hymenoptera Vespidae). *Ethology, Ecology, and Evolution* 14: 365-371

### Presentations

- International Union for the Study of Social Insects - International meeting - (invited paper). Queen presence determines female alate size in the queen-size polymorphic ant *Temnothorax longispinosus*. **K.J. Howard**. July 30, 2006
- International Union for the Study of Social Insects - North American Branch Meeting (submitted paper). Relationship of fat content, propagule numbers, and queen size to nest density in *Temnothorax longispinosus*. **K.J. Howard**. October 8, 2004
- Entomological Society of America National Meeting (submitted paper). Size dimorphism in queens of *Leptothorax longispinosus*. **K.J. Howard**. October 28, 2003
- Behavior Interdisciplinary Association, University of Wisconsin, Madison (invited paper). Wasps plan ahead: size of nest built by *Polybia occidentalis* swarms predicts colony foraging rates and productivity. **K.J. Howard** and R. L. Jeanne. Feb. 14, 2002
- Entomological Society of America National Meeting (submitted paper). Wasps plan ahead: size of nest built by *Polybia occidentalis* predicts pre-emergence foraging and productivity. **K.J. Howard** and R.L. Jeanne. Dec. 11, 2001
- National Conference for Undergraduate Research (submitted paper). Queen number and reproductive differences between *Leptothorax curvispinosus* populations at two southeastern sites. **K.J. Howard**, V.L. Banschbach, and P.A. Peroni. May 7, 1998
- North Carolina Academy of Science Annual Meeting (submitted paper). A comparison of queen number and reproductive allocation in two southeastern populations of the ant *Leptothorax curvispinosus*. **K.J. Howard**, V.L. Banschbach, and P.A. Peroni. April 20, 1998

- Entomological Society of America National Meeting (submitted paper). Queen number and reproductive differences between *Leptothorax curvispinosus* populations at two southeastern sites. **K.J. Howard**, V.L. Banschbach, and P.A. Peroni. Dec. 17, 1997

### **Memberships in Professional Organizations**

- Tri-Beta
- Entomological Society of America
- International Union for the Study of Social Insects

### **Teaching Experience**

#### **Guest lectures**

- "Insect Defenses", Insect Behavior, Department of Entomology, University of Wisconsin February, 2005.
- "Darwin's Revolutionary Idea: Introduction to Evolution and Natural Selection". Introductory Biology, Department of Zoology, University of Wisconsin. April, 2004

#### **Teaching Assistantships**

- Animal Biology, led discussions and labs, Department of Zoology, University of Wisconsin. January-May 2000, September 2004-present
- Introductory Biology, led discussions and labs, Department of Zoology, University of Wisconsin. January-May 2004

#### **Teaching and mentoring classes**

- Awarded an HHMI Teaching Fellowship, 2004. As part of this fellowship, I participated in the Howard Hughes Medical Institute New Generation Program for Scientific Teaching. I also mentored 1 student working in the 2004 Symbiosis Summer Program organized by the Department of Plant Pathology, University of Wisconsin, while participating in the class Teaching Biology: Special Topics - Mentoring. June-August, 2004
- Inquiry-based Biology Teaching with instructors Jo Handelsman and Sarah Lauffer. Focused on scientific teaching, inquiry-based techniques, classroom dynamics and diversity, course design, and assessment. Fall, 2004.
- Delta Instructional Materials Development Seminar, January - May, 2004. Collaborated with Robert L. Jeanne to develop questions and assessment materials for the use of "clickers" (a.k.a. personal response systems) in the Introductory Biology lecture class. The class included collaborative learning about teaching as a scientific process, assessment, and diversity.
- Teaching College Biology, with instructor Wayne Becker. June 2002. Introductions to important teaching concepts including active learning, engaging students, syllabus preparation, lecture designs. Also included a variety of guest speakers from teaching and research institutions.

#### **Mentoring experience**

- Mentored 5 students working on summer research projects for independent research in the departments of Entomology and Zoology, U. of Wisconsin, May-August 2003, and 1 student May-August 2005. Students wrote and revised a final scientific paper analyzing their results and discussing their findings.
- Continued mentoring 1 student as she presented a poster entitled "Relationship of worker size to queen size in the queen dimorphic ant *Leptothorax longispinosus*" as part of Introductory Biology Mentored Research Poster Presentation session, University of Wisconsin, December 10, 2003.
- Insect Ambassadors - Department of Entomology, U. of Wisconsin, Madison. Jan. 2005 - present

## **Names and contact information of references**

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