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## Jennifer Anne Hamel, Ph.D.

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### RESEARCH INTERESTS

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I work at the intersection of behavior, ecology, and evolution: I study how community interactions contribute to the evolution of individual and collective behaviors. To do this, I study insect species in natural and agricultural landscapes. I also care deeply about helping students learn the process of science, and I integrate research with classroom learning.

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### CURRENT POSITION

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2012 – Present Postdoctoral Associate, University of Florida  
Department of Entomology and Nematology  
Advisor: Christine Miller

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### EDUCATION

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2011 Ph.D. in Biological Sciences and Graduate Certificate in Science Outreach,  
University of Missouri. Dissertation: *Communication about Predation Risk  
between Parents and Offspring Groups in Treehoppers*. Advisor: Rex Cocroft.  
Graduate certificate in Science Outreach.

2003 – 2005 Post-Baccalaureate coursework and research, University of North Carolina at  
Asheville. Research mentors: Tim Forrest, Jim Petranka, and Kitt Reynolds.

2004 B.H.A. in Art and Russian Studies, Carnegie Mellon University

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### AWARDS and FELLOWSHIPS

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2012 *Warner Clyde Allee Award Finalist*, Animal Behavior Society

2011 *Teaching Assistant Choice Award* (nominated), Missouri Student Association

2007 – 2010 *U.S. Department of Education Graduate Assistance in Areas of National Need  
(GAANN) Fellowship*

2005 *Genesis Award*, Animal Behavior Society

2005 *Distinction in Biological Research*, University of North Carolina, Asheville

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### PUBLICATIONS

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5 peer-reviewed publications, 2 book chapters  
Manuscripts nearing submission: 2; Projects with data collected: 8

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#### Journal Articles

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- Miller, CW, JA Hamel, KD Holmes, WL Helmeý-Hartman, and D Lopatto. (2013) Expanding your research team: learning gains when a laboratory partners with a classroom. *BioScience* 63(9):754-762. DOI: 10.1525/bio.2013.63.9.11
- Hamel JA and RB Cocroft. (2012) Functions and benefits of negative feedback in collectively signaling treehoppers. *Proceedings of the Royal Society B*. 279:3820-3826.
- Hamel, JA. (2009) *Anaxyrus americanus*. (American toad). Egg cannibalism. *Herpetological Review*. 40 (1):67-68.
- Petranka JW, EM Harp, CT Holbrook, & JA Hamel. (2007) Long-term persistence of amphibian populations in a restored wetland complex. *Biological Conservation*. 138: 371–380.

Reynolds BC, J Hamel, Isbanioly J, Klausman L & KK Moorhead. (2007) From forest to fen: Microarthropod abundance and litter decomposition in a Southern Appalachian floodplain/fen complex (USA). *Pedobiologica*. 51: 273–280.

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### Book Chapters

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RB Cocroft, JA Hamel, Q Su, and J Gibson. (Submitted.) Playback of animal vibrational signals. *Vibrational Communication in Arthropods*. Eds. RB Cocroft, M Gogala, A Wessel, Springer.

Cocroft, RB and JA Hamel. (2010) Vibrational communication in the “other” social insects: a diversity of ecology, signals, and signal functions. In: *The Use of Vibrations in Communication: Properties, Mechanisms and Function across Taxa*. Ed. CE O’Connell-Rodwell, Research Signpost.

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### Manuscripts – Near Submission (\* denotes undergraduate coauthor)

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Hamel JA and RB Cocroft. Negative feedback acting on collective behavior has different benefits in two closely-related species. (In preparation for *Animal Behaviour*.)

Hamel JA, S Nease\*, and CW Miller. Male mate choice and female receptivity contribute to reproductive interference between insect species. (In preparation for *Behavioral Ecology and Sociobiology*.)

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### TEACHING INTERESTS

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- Introductory biology
  - Evolution
  - Ecology
  - Behavior
  - Entomology/invertebrate zoology
  - Seminar/discussion courses
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### TEACHING EXPERIENCE

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#### Courses Taught

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**Life Science for Educators** (ENY 3007c/5160c), *Instructor*, Department of Entomology and Nematology, University of Florida, August – December 2013

- Students learn foundational biology and explore current research on teaching and learning, design an experiment, develop lesson plans, and evaluate credibility and accuracy in media coverage of science.

**Morphometrics** (ENY 4905), *Co-Instructor*, Department of Entomology and Nematology, University of Florida, January – May 2012

- Collaboratively developed lecture/discussions, readings, and assessments for undergraduate research experience course. Students learned about the nature of science through readings, discussions, and presentations of primary literature, and acquired hands-on research experience by assisting with an NSF-funded research project (25 students).

**Essentials of Biology** (BIO 105), *Instructor*, Department of Biology, Westminster College, Fulton, MO, August – December 2010

- Developed syllabus, lectures, and assessments for Introduction to Biology (non-majors) (19 students).
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#### Guest Lectures

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- ‘*Why and how to study behavior*’, Insect Behavior and Systematics, University of Florida, 2013
- ‘*Academic job hunting*’, Grant Writing (graduate), University of Florida, 2013

- 'Community biology and sexual selection', Behavioral Evolution (graduate), University of Florida, 2012
- 'Insect predators, parasitoids, and defenses', Principles of Entomology, University of Florida, 2012
- 'Animal communication', Introductory Biology (non-majors), Moberly Area Community College, Columbia, MO, 2008

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#### Graduate Teaching Experience, University of Missouri

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- General Ecology Laboratory (BIO 3650) (writing intensive), 2005, 2006
  - Introductory Biology Laboratory (majors) (BIO 1500), 2006, 2008, 2010, 2011
  - Ornithology Laboratory (BIO 2600), 2007
  - Molecular Ecology Laboratory (capstone course) (BIO 4983), 2008
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#### MENTORING

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##### Graduate Committees

Wendy Helmey-Hartman, Ph.D. Candidate, University of Florida  
Timothy Golden, Ph.D. Student, University of Tulsa

##### Undergraduate / Post-Baccalaureate

##### Independent Researchers

University of Florida: Savannah Nease, Natalia Piñeros  
University of Missouri: Jasmine Dillard, Timothy Golden, Ashley Groves, Megan Johnson

##### Research Assistants

University of Florida: Jonathan Alerte, Isabel Betancourt, Christian Caro, Michelle Feole, Katherine Holmes, Patricia Jayakumar, Alexander LoCastro, Zachary Nolen, Yaneke Paulay, Anthony Riggio, Sydney Roig, Holley Short, Kirsten Verster  
University of Missouri: Alicia Burke, James Benjamin Christ, Rodrigo Landeros, Shannon Dennis  
SUNY Oneonta: Kevin Bender  
GA Southern: Lexie Dorfzaun

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#### FUNDING

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##### Competitive Funding

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- 2014 National Academies Keck Futures Initiative (NAKFI) conference, "Social Behaviors" At a 2009 working group (*Microbes to Metazoans: Regulation, Dynamics, and Evolution of Social Behavior*, Georgia Institute of Technology, Atlanta, GA), I contributed to the NAKFI proposal for this meeting.
- 2013 - 2014 USDA APHIS 10201 Farm Bill. Evaluated, Improved, and Expanded Collaborative and Enhanced First Detector Training for Florida, California, and New York. PIs: Amanda Hodges, Jennifer A. Hamel, Stephanie Stocks, Brian Myers, Carrie Lapaire Harmon, Leroy Whilby, Rick Bostock, Richard Hoenisch, Rachel McCarthy. (\$175,000) \* *Because of my passion for science outreach, I co-developed this suggestion and workplan with the PI, Amanda Hodges.*
- 2008 - 2010 TWA Scholarship, University of Missouri (\$14,000)
- 2008 The Explorers Club Exploration Fund, "Investigating the function of maternal signaling in treehoppers (Hemiptera: Membracidae) during predator encounters" (\$1015)
- 2007 TWA Scholarship, University of Missouri (declined) (\$7000)
- 2004 Acoustical Society of America, *Robert W. Young Award* (\$500)

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**Travel Funding**


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- 2005 – 2011 University Conference and Seminar Travel Awards, (\$1225)
- 2005 – 2009 External Conference Travel Awards (\$1500),  
Microbes to Metazoans: Regulation, Dynamics, and Evolution of Social Behavior  
*Charles H. Turner Travel Award*, Animal Behavior Society  
Society of Wetland Scientists
- 2006, 2008 Professional Workshop Travel Awards (\$1600),  
Summer Institute in Statistical Genetics Scholarship, University of Washington  
Enhancing Linkages between Mathematics and Ecology, Michigan State University
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**PRESENTATIONS**


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9 conference presentations and 6 invited talks/workshops.

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**Invited Talks and Workshops**


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- 2013 Women Evolving Biological Sciences National Symposium. Selected participant.
- 2012 “*Functions and benefits of negative feedback in collectively signaling treehoppers,*”  
Annual Meeting of the Animal Behavior Society, Warder Clyde Allee Symposium,  
Albuquerque, NM.  
“*Bringing research into the undergraduate classroom,*” with CW Miller, W Helmey-  
Hartman, and K Holmes. CALS (College of Agricultural and Life Sciences)  
Teaching Enhancement Symposium. University of Florida.  
“*Communication between treehopper parents and offspring about changes in  
predation risk,*” Entomology Seminar Series, Department of Entomology and  
Nematology, University of Florida, Gainesville, FL.
- 2011 “*Science teaching roadmap: how to incorporate pedagogical tools and tips to  
inform your science teaching,*” with K O’Donnell, E Walter, and S Witzig. Sandra  
K. Abell Conversations about College Science Teaching Seminar Series.  
University of Missouri.
- 2009 “*Receivers, functions, and costs of parent-offspring signaling in treehoppers  
(Hemiptera: Membracidae),*” Ecology Seminar Series, Department of Biology,  
State University of New York, Potsdam, NY.
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**Contributed Presentations**


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- 2012 First Joint Congress on Evolutionary Biology, Ottawa, ON
- 2011 Annual Meeting of the Animal Behavior Society, Indiana University, Bloomington, IN  
Invertebrate Sound and Vibration 13<sup>th</sup> International Meeting, University of Missouri,  
Columbia, MO
- 2010 Annual Meeting of the Animal Behavior Society, William and Mary College,  
Williamsburg, VA  
Society for Integrative and Comparative Biology Annual Meeting, Seattle, WA
- 2009 Microbes to Metazoans: Regulation, Dynamics, and Evolution of Social Behavior,  
Georgia Institute of Technology, Atlanta, GA  
Evolution Annual Meeting, University of Idaho, Moscow, ID
- 2008 International Society for Behavioral Ecology Annual Meeting, Cornell University,  
Ithaca, NY

2005 Annual Meeting of the Animal Behavior Society, Snowbird, UT

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**PROFESSIONAL DEVELOPMENT**

2012 CALS (College of Agricultural and Life Sciences) Teachers' College, University of Florida

2012 "Write Winning Grant Proposals," workshop. Stephen W. Russell and David C. Morrison: The Grant Writer's Seminars and Workshops ([www.grantcentral.com](http://www.grantcentral.com)). University of Florida Institute for Food and Agriculture Professional Development Series.

2010 – 2011 *Preparing Future Faculty Fellow*, University of Missouri

2009 *Public Understanding of Science* graduate course, University of Missouri

2008 *College Science Teaching* graduate course, University of Missouri

2008 *Computing for Statistical Genetics and Regression and Analysis of Variance* modules, Summer Institute in Statistical Genetics, University of Washington

2007 *Entering Mentoring* undergraduate mentor training module, University of Missouri

2006 *Modeling in Behavioral Ecology* workshop, Enhancing Linkages between Mathematics and Ecology, Kellogg Biological Station, Michigan State University

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**SERVICE**

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**Professional**

Ongoing Reviewer for *Animal Behaviour* (1), *Behavioral Ecology and Sociobiology* (3), *Behaviour* (2), *Ethology* (3), *Florida Entomologist* (1), *Naturwissenschaften* (1)

2012 Judge, Animal Behavior Society Genesis Award, undergraduate poster competition

2010 Volunteer, Society for Integrative and Comparative Biology Annual Meeting, Seattle

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**Academic**

2007 – 2009 Graduate Student Representative, University of Missouri Conservation Biology Graduate Certificate Program. Developed curriculum for graduate level certificate program with faculty advisor and faculty and student committees.

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**Public**

2012 – 2013 Develop and coordinate outreach events for Miller lab, University of Florida.

2008 – 2011 Instructor, *Women in Science*. Outreach program with Columbia, Missouri Girl Scouts of America. Female MU graduate science students developed and taught hands-on modules in ecology and wildlife for Girl Scouts (Ages: ~6 – 14).

2009 "Vibrational Communication in Insects," Invited talk. Columbia Audubon Society.

2008 – 2009 Participant/Presenter, University of Missouri *Science and Me*. Developed and delivered peer-reviewed oral presentation on amphibian conservation ecology to lay adult audiences at assisted living facilities and on community television.

2006 – 2009 Walk-leader and Public Relations Coordinator, *Columbia BioBlitz*.

2008 "Bug Talk," Invited talk. Daniel Boone Regional Public Library. Columbia, Missouri.

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**PROFESSIONAL AFFILIATIONS**

Animal Behavior Society, American Society of Naturalists