

Jennifer L. Kovacs, Ph.D.

Assistant Professor

Spelman College Biology Department
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Education:

Ph.D. 2009 Biology Advisor: Dr. Michael Goodisman Georgia Tech, Atlanta, GA
Dissertation: Queen specific selective pressures and caste dimorphism in the social wasp *Vespula maculifrons*
B.A. 2002 Biology & Sociology/Anthropology Agnes Scott College, Decatur, GA

Professional Appointments:

2012-Present Assistant Professor of Biology Spelman College, Atlanta, GA
2012-Present Adjunct Assistant Professor of Biology (without comp) Emory University, Atlanta, GA
2011-2012 Post-doctoral Fellow with Dr. Nicole Gerardo Emory University, Atlanta, GA
2009-2011 Post-doctoral Fellow with Dr. Yun Tao Emory University, Atlanta, GA
2004-2009 Graduate Research Assistant with Dr. Michael Goodisman Georgia Tech, Atlanta, GA

Peer-Reviewed Publications (* indicates undergraduate coauthor):

Pai, A., McGinnis, G., Cole, M., Stovall, K., **Kovacs, J.L.**, Lee, M. & D. Bryant. Submitted. Let's be friends: Using Facebook to enhance undergraduate science instruction. Cases on Social Networking Websites for Instructional Use.

Kovacs, J.L. & M.A.D. Goodisman. 2012. Effects of size, genotype, and mating on queen overwintering survival in the social wasp *Vespula maculifrons*. *Ecological Entomology*. 41(6): 1612-1620.

Kovacs, J.L., Altincicek, B., & N.M. Gerardo. 2012. Horizontally-transferred fungal carotenoid genes in the two-spotted spidermite *Tetranychus urticae*. *Biology Letters*. 8:253-257.

Kovacs, J.L., Hoffman E.A., Marriner S.M.* & M.A.D. Goodisman. 2010. Detecting selection on morphological traits in social insect castes: the case of the social wasp *Vespula maculifrons*. *Biological Journal of the Linnean Society*. 101:93-102.

Kovacs, J.L., Hoffman E.A., Marriner S.M.*, Rekau J.A.*, & M.A.D. Goodisman. 2010. Environmental and genetic influences on queen and worker body size in the social wasp *Vespula maculifrons*. *Insectes Sociaux*. 57:53-65.

Johnson, E.L.*, Cunningham, T.W.*, Marriner, S.M.*, **Kovacs, J.L.**, Hunt, B.G., Bhakta, D.B.*, & M.A.D. Goodisman. 2009. Resource allocation in a social wasp: Effects of breeding system and life cycle on reproductive decisions. *Molecular Ecology*. 18: 2908-2920

Goodisman, M.A.D., **Kovacs, J.L.**, & B.H. Hunt. 2008. Functional genetics and genomics in ants: The interplay of genes and social life. *Myrmecological News*. 11: 107-117

Hoffman, E.A., **Kovacs, J.L.**, & M.A.D. Goodisman. 2008. Genetic structure and breeding system dynamics of a social wasp and its social parasite. *BMC Evolutionary Biology*. 8:239

Kovacs, J.L., Hoffman, E.A., & M.A.D. Goodisman. 2008. Mating success in the polyandrous social wasp *Vespula maculifrons*. *Ethology*. 114: 340-350

Kovacs, J.L., & M.A.D. Goodisman. 2007. Irregular brood patterns and worker reproduction in social wasps. *Naturwissenschaften*. 94: 1011-1014.

Goodisman, M.A.D., **Kovacs, J.L.**, & E.A. Hoffman. 2007. The significance of multiple mating in the social wasp *Vespula maculifrons*. *Evolution*. 61 (9): 2260-2267

Goodisman, M.A.D., **Kovacs, J.L.**, & E.A. Hoffman. 2007. Lack of conflict during queen production in the social wasp *Vespula maculifrons*. *Molecular Ecology*. 16:2589-2595

Goodisman, M.A.D., Sankovich, K.A., & **J.L. Kovacs**. 2007. Genetic and morphological variation over space and time in the invasive fire ant *Solenopsis invicta*. *Biological Invasions*. 9: 571-584

Non Peer-Reviewed Publications:

Rudolph, D.D., **J.L. Kovacs** & N.M. Gerardo. 2012. Without a trace: the unfortunate mishap of the inhabitants of Planet Orr. Retrieved August 22, 2012 from Emory University, CASES Online Web site: http://www.cse.emory.edu/cases/casedisplay.cfm?case_id=4686

Teaching:

Instructor: Population Biology Bio 100 Spelman College, Atlanta, GA
Fall 2012: Taught two sections of lab, piloted pre-lab quizzes & reading assignments which included primary literature for all lab sections. Led 3 field trip groups to Arabia Mountain. Began reworking lab exercises to include multi-lab inquiry-based activities.

Instructor: Organismal Form & Function Emory University, Atlanta, GA
Spring 2012: Designed and delivered a problem based sophomore level organismal biology course.

Instructor: Evolution in Action Spelman College, Atlanta, GA
Spring 2011: Designed and delivered a lecture-free senior-level evolutionary biology class.

Instructor: Essential Labs Academy Atlanta Public Schools, Atlanta, GA
Summer 2009: Taught a 3-week long continuing education program for the Atlanta Public School high school biology teachers focused on generating new lab exercises and improving existing ones.

Instructor: Cell and Animal Biology Lab Agnes Scott College, Decatur, GA
Spring 2009: Taught two sections of introductory biology animal labs, including fetal pig dissections.

NSF STEP Teaching Fellow: Anatomy & Physiology Miller Grove High School, Atlanta, GA
2008-2009: Developed and led senior level high school Anatomy and Physiology labs. Initiated a forensic science afterschool club.

Teaching Assistant: Genetics Emory University, Atlanta, GA
Spring 2010: Led bi-weekly review sessions and provided tutoring for junior-level genetics course taught by Dr. Yun Tao. Taught population genetics section of the class.

Teaching Assistant: Introductory Biology Georgia Tech, Atlanta, GA
Summer 2009: Led weekly recitation sessions for 100+ student introductory biology lecture taught by Drs. Rupal Thazhath Cutting and David Garton. Taught genetics section of the class.

Teaching Assistant: Honors Introductory Biology Georgia Tech, Atlanta, GA
Fall 2008: Led inquiry based lab for freshman Honors Biology students co-taught with Dr. Rupal Thazhath Cutting.

Teaching Assistant: Summer Science Academies Atlanta Public Schools, Atlanta, GA
Summer 2008: Assisted Dr. Jennifer Leavey with a 2-week long continuing education program for the Atlanta Public School middle school life science and high school biology teachers. Duties included curriculum development and lab instruction.

Teaching Assistant: Molecular Project Lab Georgia Tech, Atlanta, GA
Spring 2007: Led senior level molecular biology independent project lab for biology capstone course co-taught with Dr. Jung Choi.

Teaching Assistant: Honors Introductory Biology Georgia Tech, Atlanta, GA
Fall 2007: Led problem based learning lab for freshman Honors Biology students co-taught with Dr. Rupal Thazhath Cutting.

Teaching Assistant: Genetics Georgia Tech, Atlanta, GA
Spring 2007 and Summer 2007: Led computer-based genetics laboratory classes under the direction of Dr. Mirjana Brockett.

Teaching Assistant: Organismal Biology Georgia Tech, Atlanta, GA
Fall 2004: Led introductory animal physiology and behavior laboratory classes under the direction of Dr. Steve Kudravi.

Teaching Assistant: Biology Department Agnes Scott College, Decatur, GA
Fall 2002- Summer 2004: Taught organismal biology laboratory classes for non-majors and assisted with classes and labs in cellular biology, molecular biology, ecology, evolution, developmental biology, genetics, microbiology, and environmental biology under the supervision of department chair Dr. Phil Gibson.

Course Development: Genetics Lab Georgia Tech, Atlanta, GA
Summer 2008: Re-developed a computer-based laboratory course to include pertinent wet laboratory exercises with Dr. Rupal Thazhath Cutting.

Course Development: Honors Ecology Georgia Tech, Atlanta, GA
Fall 2007: Participated in course and lab planning for a problem-based honors ecology course with Dr. Marc Weissburg, Dr. Lock Rogers, Dr. Anne-Marie Hoskinson, Wendy Morrison, and Jonathan Sylvester.

Oral Presentations:

- Kovacs, J.L., B. Altincicek, & N.M. Gerardo (2012) Horizontal gene transfer affects evolutionarily and ecologically important traits in two invertebrates, the two-spotted spider mite and the pea aphid. Evolution Conference, Ottawa, Canada
- Kovacs, J.L. (2012) Cooking up Top Chef style intro bio plant biology class. National IRACDA Conference, Philadelphia, PA
- Kovacs, J.L. & M.A.D. Goodisman (2009) I will survive: Sexual selection in a social wasp. Evolution of Sex and Recombination Conference, Iowa City, IA
- Kovacs, J.L. & M.A.D. Goodisman (2008) Male mate choice in a social wasp. North American Section of the International Union for the Study of Social Insects, Puerto Rico
- Kovacs, J.L. & M.A.D. Goodisman (2008) Sexual selection in social wasp queens. Annual Symposium of the American Genetic Association, Raleigh, NC
- Kovacs, J.L. & M.A.D. Goodisman (2008) I will survive: What factors influence hibernation survival in social wasp queens? Southeastern Ecology and Evolution Conference, Tallahassee, FL
- Kovacs, J.L., E.A. Hoffman, & M.A.D. Goodisman (2007) Genetic effects on worker and queen size in a polyandrous social wasp. Southeastern Population Ecology and Evolutionary Genetics Conference, Tremont, TN
- Kovacs, J.L., E. A. Hoffman, & M.A.D. Goodisman (2005) Mate choice and mating behavior of the polyandrous social wasp *Vespula maculifrons*. Southeastern Ecology and Evolution Conference, Athens, GA

Poster Presentations:

- Kovacs, J.L., B. Altincicek, & N.M. Gerardo (2012) Horizontally transferred fungal carotenoid genes in the two-spotted spider mite *Tetranychus urticae*. National IRACDA Conference, Philadelphia, PA
- Kovacs, J.L. & Y. Tao (2010) A good man is hard to find: Mapping hybrid male sterility genes in the *Drosophila simulans* subgroup. Southeast Population Ecology and Evolutionary Genetics Conference, Madison, FL
- Kovacs, J.L., E.A. Hoffman, & M.A.D. Goodisman (2010) The genetic architecture of caste in a highly social wasp. Evolution Conference, Portland, OR
- Kovacs, J.L., E.A. Hoffman, & M.A.D. Goodisman (2009) Environmental and genetic influences on queen and worker body size in the social wasp *Vespula maculifrons*. Society for Molecular Biology and Evolution Conference, Iowa City, IA
- Kovacs, J.L., E.A. Hoffman, & M.A.D. Goodisman (2006) Paternity skew in polyandrous *Vespula* wasps. Congress for the International Union for the Study of Social Insects, Washington, D.C.

Fellowships:

- 2009-2012 NIH Fellowship in Research and Science Teaching (FIRST) Fellow, Emory University, Atlanta, GA
- 2008-2009 NSF Student Teacher Enhancement Program (STEP) Teaching Fellowship, Georgia Tech, Atlanta, GA

Honors & Awards:

- 2009 School of Biology CETL/BP Outstanding Teaching Assistant Award nominee, Georgia Tech, Atlanta, GA
- 2008 Best Oral Presentation, Southeast Ecology and Evolution Conference, Tallahassee, FL
- 2007 School of Biology P.E.O. Outstanding Woman Graduate Student nominee, Georgia Tech, Atlanta, GA
- 2007 Meritorious Teaching Award, School of Biology, Georgia Tech, Atlanta, GA
- 2004 Outstanding Teaching Award, School of Biology, Georgia Tech, Atlanta, GA

Invited Talks:

- 2009 Evolution of Sex and Recombination Symposium, Iowa City, IA
- 2008 Annual Symposium of the American Genetic Association, Raleigh, NC
- 2008 North American Section of the International Union for the Study of Social Insects, San Juan, Puerto

Professional Development:

- 2012 Participated in and facilitated the “Quantitative Biology Workshop” at the Massachusetts Institute of Technology. Developed materials for future workshops as well as classroom materials for classes taught at Spelman. Accompanied six Spelman undergraduate from different STEM majors.
- 2012 Attended PKAL regional network fall meeting at Spelman College: “Active Learning Pedagogies: Promoting access & mastery in the STEM disciplines”
- 2012 Participated in the “Storytelling in Science” Workshop by Arri Michael Shapiro at Emory University
- 2012 Participated in the Annotated CV Workshop put on by Junior Faculty Committee Spelman College
- 2012 Attended the in “Classroom A/V Training Session” at Spelman College
- 2012 Participated in the “Navigating your Spel.e.Learn Course Workshop” at Spelman College
- 2011 Invited to attend NSF-sponsored Women Evolving Biological Sciences (WEBS) Symposium at the National Evolutionary Synthesis Center in Durham, NC
- 2011 Attended the Annual Case Studies in Science Fall Conference at SUNY Buffalo, NY
- 2011 Invited to attend NSF-sponsored Negotiating the Ideal Faculty Position Workshop at Rice University, Houston, TX

Professional Service:

Reviewer for Evolutionary Ecology, Insectes Sociaux, Naturwissenschaften, and Population Genetics

Member of the Society for the Study of Evolution (SSE) and Project Kalidescope (PKAL)

- 2012 Review panel member for the NSF Fall 2012 Evolutionary Genetics Panel, Washington D.C.
- 2012 Invited to serve on the “Academic Career Options in Higher Education Panel” at the Georgia Tech Graduate Career Symposium
- 2012 Served as faculty judge for student entries in the “Against Health Fair: Exploring the intersection between ideology and health disparities” at Spelman College
- 2012 Participated in the “Why I’m a Scientist” Panel for Spelman’s 2012-2013 Bioseminar Course

2010 Organizing Committee 2010 Southeastern Ecology and Evolution Conference, Georgia Tech
2010 Judge, Morehouse College, Mapp Science and Mathematics Symposium
2008-2009 Chair, School of Biology Graduate Student Seminar Series Committee, Georgia Tech
2008 Judge, Georgia Tech Undergraduate Research Symposium

Undergraduate Mentoring:

2012-present Dene Voisin, Spelman College. Identifying secondary symbionts in the several lady beetle and aphid species in the Southeast
- Received ASPIRE research scholar award
2012-present Michelle Newell, Field collections of lady beetle of the Southeast
2011-2012 Kelly Costopolous, Emory University. Fitness effects of aphid secondary symbionts on their primary predator, the lady beetle *Hippodamia convergens*
- one publication in prep

K-12 Outreach:

Fall 2012 Organized "Raiding the Kitchen" workshop for the LEADS/STEM Girls Leadership Institute at Spelman College for Atlanta area Middle School girls with Spelman biology sophomore volunteers. This workshop explored simple science experiments on specimens that are found in a typical kitchen with a large focus on hands-on microscopy by the students themselves.
Fall 2011 Participated in a 4 week Art & Science After-School Outreach Program at Redan Middle School in Lithonia, GA
Summer 2011 Supervised the research of an Emory-HHMI High School Teacher Fellow in the Gerardo Lab at Emory University. Helped integrate that research into the Environmental Science class at Martin Luther King, Jr. High School in Lithonia, GA
2008-2009 As an NSF STEP Graduate Teaching Fellow at Georgia Tech, I developed and led senior level high school Anatomy and Physiology labs, and initiated a forensic science afterschool club at Miller Grove High School in Lithonia, GA
2007 Volunteer tutor at Benjamin Carson Middle School in Atlanta, GA. Took part in one on one weekly tutoring with eighth grade students with a specific focus on mathematics and science.
Spring 2007 Volunteer tutor at Grady High School in Atlanta, GA. Assisted high school science teachers with after-school tutoring for state science exams for junior and senior high school students.

References:

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