

SUSAN VILLARREAL

Curriculum Vitae

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Department of Entomology
Cornell University
Ithaca, NY 14853
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Education

- 2006-2013 **Ph.D., Cornell University**, Ithaca, NY
Graduate Field: Entomology
Advisor: Dr. Cole Gilbert
Thesis Project: *Acoustic communication in the duetting katydid, Scudderia pistillata (Orthoptera: Tettigoniidae: Phaneropterinae)*
- 2002-2006 **B.S. with Honors, Truman State University**, Kirksville, MO
Major: Organismal Biology; Minor: Printmaking
Advisor: Dr. Laura Fielden-Rechav
Honors Thesis: *Mathematical Biology Initiative: Tick underwater respiration*

Honors and Awards

- 2012 Outstanding Teaching Assistant, Cornell University College of Agriculture and Life Sciences, for *BIOG 1500: Investigative Biology*
- 2011 Best Student Oral Presentation, June 5, 13th International Meeting of Invertebrate Sound and Vibration, Columbia, MO
- 2009 Outstanding Entomology Graduate Teaching Assistant, Cornell University College of Agriculture and Life Sciences, for *ENTOM 3150: Spider Biology*

Grants and Fellowships

- 2015 Postdoctoral Fellowship, Reproductive Sciences and Genomics Training Program, National Institute of Health (awarded to support one year of postdoctoral research)
- 2008, 2010, 2012 Rawlins Endowment Fund, Department of Entomology, Cornell University (\$2700 total), awarded to support travel to meetings
- 2007, 2008 Grace Griswold Endowment Fund, Department of Entomology, Cornell University (\$1600 total), awarded to support acoustic equipment for research on katydid song
- 2007 Grant-in-Aid of Research, Cornell Chapter Sigma Xi (\$800), awarded to support acoustic equipment for katydid research
- 2006-2007, 2009 Diversity Fellowship, State University of New York (awarded to support two years of dissertation research)

Publications

Villarreal, S.M. & Gilbert, C. 2014. Male *Scudderia pistillata* katydids defend their acoustic duet against eavesdroppers. *Behavioral Ecology & Sociobiology*. 68: 1669-1675.

Villarreal, S.M. & Gilbert, C. 2013. Female acoustic reply to variation in the male call in a duetting katydid, *Scudderia pistillata*. *Behaviour*. 150: 525-546.

Villarreal, S.M. & Gilbert, C. 2011. The unique counting call of a katydid, *Scudderia pistillata*. *Annals of the Entomological Society of America*. 104: 945-951.

Fielden, L.J., Knolhoff, L.M., **Villarreal, S.M.**, & Ryan, P. 2011. Underwater survival in the dog tick *Dermacentor variabilis* (Acari: Ixodidae). *Journal of Insect Physiology*. 57: 21-6.

Professional Experience

- 2013-Present **Postdoctoral Associate**, Cornell University, Entomology
PIs: Dr. Laura C. Harrington, Dr. Mariana Wolfner
Molecular and behavioral mating interactions of mosquitoes
- 2013-2014 **Grant Project Coordinator**, Second Annual Faculty Institute on Community Engaged Learning & Teaching, A collaboration between Cornell's Center for Teaching Excellence and Engaged Learning + Research, funded by the Association of American Colleges and Universities. Performed administrative duties as well as developed all marketing materials and moderated the two-day session
- 2013 **Technician**, Cornell University, Entomology
PI: Dr. Bryan Danforth
Native bee pollination in apple orchards: collected, identified, and entered bee specimens into digital collection using a biodiversity database management system (Biota)
- 2002-2006 **Research Assistant**, Truman State University, Biology
Advisor: Dr. Jon Gering
Population ecology of local katydid species

Teaching Experience

- Teaching Interests: General Biology/Zoology, Introductory Molecular Biology, Organismal Biology, Animal Behavior/Communication, Behavioral Ecology, Entomology, Invertebrate Biology, Reproductive Behavior & Physiology, Methods in Field Biology
- Current **Instructor**: *BIOG 1250: Insects in Science Fiction & Pop Culture*, Cornell University (1 credit). Creator and sole instructor of this first-year biology seminar
- 2012, 2015 **Invited Lecturer**: *ENTOM 3250: Insect Behavior*, Cornell University. Presented one 1-hour lecture entitled "Acoustic Communication in Insects"

- 2012 **Graduate Teaching Assistant:** *ENTOM 2120: Insect Biology*, Cornell University (4 credits). Attended all lectures, set up and assisted weekly laboratory exercises, including answering student questions and assisting with identifications, graded exams, and presented a lecture on “Insect Reproduction”
- 2009-2012 **Graduate Teaching Assistant:** *BIOG 1500: Investigative Biology Lab*, Cornell University (2 credits). Independently led two, 3-hour lab sessions each week, guided students one-on-one through laboratory exercises, held office-hours, wrote and administered quizzes, developed discussion materials, assisted lecture instructor in administering and grading exams
- 2008 **Graduate Teaching Assistant:** *ENTOM 2150* (2 credits) and *3150* (3 credits): *Spider Biology*, Cornell University. Attended all class lectures, led open labs, assisted students with spiders identification, graded student’s spider collections, graded exams and papers
- 2007-2008 **Graduate Teaching Assistant:** *BIOG 1101-1104: Introductory Biology*, Cornell University (2 credits). Independently guided students one-on-one through weekly laboratory exercises for two, 3-hour sessions each week, created tests and quizzes as well as discussion materials

Outreach Experience

- 2015 **Invited Presentation:** “Insects in Hollywood.” Oral presentation at the Alice Cook House dormitory, Cornell University, Ithaca, NY, April 12 & November 9
- 2014-present **Educational Website** www.insectinterviews.com: Developed this website to introduce children to the world of insects through one-on-one interviews with the animals themselves
- 2013 **Educational Video:** “Insect Sounds: Nature’s Orchestra” with Mariah Slone as part of the Naturalist Outreach Program <https://goo.gl/1lqoFy>

- 2007-2013 **Organizational Committee “Insectapalooza”:** Cornell Department of Entomology’s annual insect fair: created posters, signage, maps, illustrations, initiated and created custom volunteer t-shirts each year, as well as created materials for multiple exhibits and served as an event volunteer
- 2009 **Student Outreach Practicum member:** Gave numerous 30-90 minute presentations on insect communication to groups of 5-50 individuals, ranging from grades 2-12. Created all presentation materials.
- 2009 **Invited Lecturer:** Visitor Showcase at Dryden Central School: Presented one 1-hour lecture entitled “The Technology of Sound” then participated in a 1-hour question/answer session followed by a podcast interview

Professional Service

- 2015 **Reviewer,** Journal of Insect Behavior
- 2014 **Reviewer,** Animal Behavior Society Student Research Grant, Journal of the Annals of the Entomological Society of America
- Organizational Committee Member and Moderator,** Seminal Proteins & Reproductive Physiology II, International Conference on Insect Reproductive Molecules, Cornell University
- 2013 **Oral & Poster Presentation Judge,** 2nd Annual Entomology Graduate Symposium, Department of Entomology, Cornell University
- 2012 **Poster Presentation Judge,** 27th Annual Undergraduate Spring Research Forum, Cornell Undergraduate Research Board
- Buddy,** Expanding Your Horizons, Cornell University
- Mentor,** Women in Technology Sharing Online
- 2010-2012 **President,** Jugatae, Cornell Department of Entomology’s Graduate Student Entomology Association

2008 **Signage Committee Co-Member & Volunteer**, International Society of Behavioral Ecology Meeting, Cornell University

2007-2009 **Student Representative**, Rawlins Endowment Fund Selection Committee, Department of Entomology, Cornell University

Leadership and Professional Development Training

2015 **An Introduction to Evidence-Based Undergraduate STEM Teaching** Massive Open Online Course, Cornell's Center for the Integration of Research, Teaching, and Learning (12 hours)

2015 **Teaching with Technology** Massive Open Online Course, Cornell's Center for the Integration of Research, Teaching, and Learning (12 hours)

2015 **PREPARE Certificate** in *Assessment Practices for the STEM Classroom*, Cornell's Center for the Integration of Research, Teaching, and Learning (4.5 hours)
 Designing Multiple-Choice or Open-Ended Questions
 Effective Grading
 Diversity in the Classroom

2015 **Postdoctoral Leadership Development Program Certificate**, Cornell's Office of Postdoctoral Studies (20 hours)
 Understanding Leadership Style
 Building Your Team
 Managing Staff Performance
 Dealing with Challenges
 Cultural Fluency
 Cultural Nuances and Conflict
 Developing Resilience
 Understanding Organizations

2011-2013 **Get SET Workshop Certificates**, Cornell's Center for Teaching Excellence (9 hours)
 Creating an Engaging Classroom
 Innovative Approaches in Pedagogy
 Developing a Professional Identity in Teaching

- 2010 **University-Wide Graduate Teaching Workshop**, Cornell's Center for Teaching Excellence (4 hours)
 Challenging Classroom Situations
 Teaching Excellence Practicum
 Effective Teaching Methods and Tools
 Making the Most of the Teaching Experience
- 2007 **Teaching Development Workshop Certificate**, Cornell's Center for Teaching Excellence (7.5 hours)
 Communicating with Faculty
 Class Preparation
 The Teaching Portfolio
 Dealing with Students in Office Hours
 Grading and Assessing Student Learning

Professional Meeting Presentations

- 2014 The role of male seminal fluid proteins on female post-mating behavior in the mosquito *Aedes aegypti*. Annual meeting of the Animal Behavior Society, Princeton, NJ, August.
- Seminal fluid protein and female post-mating responses in the dengue vector mosquito, *Aedes aegypti*. International Conference on Insect Reproductive Molecules, Cornell University, Ithaca, NY, July.
- The role of male seminal fluid proteins on female mosquito post-copulatory behavior. EvoDay Symposium on Sexual Selection, Cornell University, Ithaca, NY, May.
- 2012 Dynamic Duet: Acoustic and behavioral dynamics of the katydid *Scudderia pistillata*. Annual meeting of the Animal Behavior Society, Albuquerque, NM, June.
- Acoustic and behavioral interactions between male and female duetting katydids. Annual Meeting of the Entomological Society Eastern Branch, Hartford, CT, March.

- 2011 Acoustic duetting in insects with special emphasis on *Scudderia pistillata*, a counting katydid. Acoustic Communication by Animals: Third International Symposium, Ithaca, NY, August.
- 1 pulse, 2 pulse, 3 pulse, 4: Acoustic communication in a duetting katydid, *Scudderia pistillata*. International Meeting of Invertebrate Sound and Vibration, Columbia, MO, June.
- 2010 The male counting call and female acoustic response of a katydid, *Scudderia pistillata*. Annual Meeting of the Animal Behavior Society, Williamsburg, VA, July.
- 2008 The Counting Katydid: analysis of male call and female acoustic response. International Meeting of Invertebrate Sound and Vibration, Tours, France, October.
- Male chorusing and female choice in a bush katydid, *Scudderia pistillata* (Orthoptera: Tettigoniidae: Phaneropterinae). International Society for Behavioral Ecology Conference, Ithaca, NY, August.
- 2006 Tick Plastron Respiration (Acari: Ixodidae). National Conference of Undergraduate Research, Ashville, NC, April.
- Tick Plastron Respiration. AAAS annual meeting, St. Louis, MO, February 18.
- 2005 Mathematical modeling of plastron respiration of *Dermacentor variabilis* (Acari: Ixodidae). Entomological Society of America Annual Meeting, Ft. Lauderdale, FL, December.

Interviews

BBC Radio 4: Served as guest expert to discuss beetles and cockroaches and their representation in media for the series *Natural Histories* (air date TBD)

The Ithaca Voice: "How Ithaca website pulls kids into the 'fascinating world of insects'" by Jeff Stein, (January 9, 2015; <http://goo.gl/0KyAZI>)

The Ithaca Journal: "In search of 'counting katydid'" by Linda Stout, (July 4, 2008; pp. 1B-2B)

Society Memberships

American Society of Tropical Medicine and Hygiene
International Society of Behavioral Ecology
Orthopterists' Society
Animal Behavior Society
Entomological Society of America