

SUSAN VILLARREAL

Curriculum Vitae

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Department of Biology
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Education

- 2006-2013 **Ph.D., Entomology, Cornell University, Ithaca, NY**
- 2002-2006 **B.S. with Honors, Biology, Truman State University, Kirksville, MO**

Professional/Teaching Experience

- 2019-Present **Assistant Professor**, Denison University, Biology
- 2016-2019 **Visiting Assistant Professor**, Grinnell College, Biology
- 2013-2016 **Postdoctoral Associate/Fellow**, Cornell University, Entomology
- 2015 **Instructor**, *Insects in Science Fiction & Pop Culture*, Cornell University, Biology
- 2013-2014 **Grant Project Coordinator**, Faculty Institute on Community Engaged Learning & Teaching, Cornell University
- 2009-2012 **Teaching Assistant/Invited Lecturer**, Cornell University, Biology & Entomology
- 2006-2013 **Graduate Research Assistant**, Laboratory of Dr. Cole Gilbert, Cornell University, Entomology

Publications (Peer-Reviewed)

Villarreal, S.M., Pitcher, S., Helinski, M.E.H., Johnson, L., Wolfner, M.F., Harrington, L.C. 2018. Male contributions during mating increase female survival in the disease vector *Aedes aegypti*. *Journal of Insect Physiology*. 108: 1-9.

Villarreal, S.M., Winokur, O., Harrington, L.C. 2017. The impact of temperature and body size on fundamental flight tone variation in the mosquito vector *Aedes aegypti* (Diptera: Culicidae): Implications for acoustic lures. *Journal of Medical Entomology*. tjx079. doi:<http://dx.doi.org/10.1093/jme/tjx079>

Publications (Peer-Reviewed) Cont.

Alfonso-Parra, C., Ahmed-Braimah, Y.H., Degner, E.C., Avila, F.W., **Villarreal, S.M.**, Pleiss, J.A., Wolfner, M.F., & Harrington, L.C. 2016. Mating-induced transcriptome changes in the reproductive tract of female *Aedes aegypti*. *PLOS Neglected Tropical Diseases*. 10: e0004451.

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.

Select Professional Presentations

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| 2021 | The influence of habitat structure on mosquito diversity, Annual Meeting of the Entomological Society of America, Denver, CO, November. |
| 2021 | The mating behavior and behavioral ecology of <i>Culex</i> mosquitoes, Animal Behavior Society Virtual Conference, August. |
| 2019 | The Impact of Prairie Restoration on Insect Communities, Day of Insects, Iowa State University, Ames, IA, March. |
| 2018 | Let's get it on: The study of the sexual behavior of insects. Iowa State University Entomology Seminar, Ames, IA, January. |
| 2017 | The impact of management practice on insect community structure and diversity in tallgrass prairies (student poster). Annual Meeting of the Entomological Society of America, Denver, CO, November. |
| 2015 | Identifying seminal proteins that induce refractory behavior in mated <i>Aedes aegypti</i> females. Annual meeting of the American Society of Tropical Medicine and Hygiene, Philadelphia, PA, October. |
| 2014 | The role of male seminal fluid proteins on female post-mating behavior in the mosquito <i>Aedes aegypti</i> . Annual meeting of the Animal Behavior Society, Princeton, NJ, August. |
| | Seminal fluid protein and female post-mating responses in the dengue vector mosquito, <i>Aedes aegypti</i> . International Conference on Insect Reproductive Molecules, Cornell University, Ithaca, NY, July. |

Select Professional Presentations Cont.

- 2012 Dynamic Duet: Acoustic and behavioral dynamics of the katydid *Scudderia pistillata*. Annual meeting of the Animal Behavior Society, Albuquerque, NM, June.
- 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.

Select Professional Service

- Reviewer Animal Behaviour, Journal of Tropical Medicine & Hygiene, Proceedings of the Royal Society B, Annals of the Entomological Society of America, Animal Behaviour Society Student Research Grant, Animal Behaviour Society Outreach Grant, Annual Meeting of the Entomological Society of America (Student Presentations Judge)
- Committee Work **Co-Principle Investigator**, Raise II: Readiness and Inclusion in Science Education S-Stem Grant, NSF, Denison University
- Honorary Degrees Committee Member**, Denison University
- Denison University Biological Reserve Committee Member**, Biology Department, Denison University
- Search Committee Member**, Biology Department, Denison University
- Senior Writing Assessment Committee Member**, Biology Department, Denison University
- Outreach Grant Committee Member**, Animal Behavior Society
- Education Committee Member**, Entomological Society of America

Select Professional Service Cont.

Advising **Advising Circle**, Co-taught with Dr. Jessica Rettig, Fall 2022

June Orientation, Summers 2021 & 2022

Panelist, “Lab Tested” Admissions Panel, Spring 2022

Advising Circle, Co-taught with Dr. Heather Rhodes, Fall 2021

Mentor, part of the Animal Behavior Society Annual Meeting’s Mentorship Program, 2020 & 2021

Student Projects

Summer 2022 **Gabe Springer**: How urban forests affect mosquito communities

Patricia Ashun: The mating behavior of *Culex restuans*

Spring 2022 **Valeria Benitez**: How best to organize and database the Denison University Insect Collection

Fall 2021 **Max Milone**: The mating behavior of *Culex pipiens*

Summer 2021 **Amy Chiero**: Rearing protocols for studying mating behaviors of *Culex pipiens* mosquitoes with respect to wingspan

Emily Ji: The effect of proximity to water and anthropogenic level on abundance of insects (Continued as Senior Research)

Awarded Biology Senior Fellows and Senior Thesis with Distinction

Yanni Guo: The effects of habitat fragmentation on abundance and diversity in insect communities in Granville, Ohio (Continued as Senior Research)

Awarded Senior Thesis with Distinction

Spring 2021 **Joey Muncie**: Identification of mosquitoes collected through the Licking County Health Department

Outreach Experience

- Media **Educational Website:** www.insectinterviews.com, to introduce children to insects through one-on-one interviews with the animals themselves
- Educational Video:** “Insect Sounds: Nature’s Orchestra” with Mariah Slone as part of the Naturalist Outreach Program; <https://goo.gl/1lqoFy>
- Presentations “How Do Bugs Talk?” Busy Bee Camp, The Works, Newark, OH
 “The Creepy Crawlies of Hollywood.” Science Cabaret, Ithaca, NY
 “Insects in Hollywood.” Alice Cook House, Cornell University, Ithaca, NY
 “The Technology of Sound.” Dryden Central School, Ithaca, NY
 “The Sounds of Insects.” K-12 presentations to local schools, Ithaca, NY
- Events **Insectapalooza:** Department of Entomology’s annual insect fair, Cornell University, Ithaca, NY: 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
- “What Is Out Here?” Dawes Arboretum, Newark, OH: led a guided tour of the insects in the wetlands, with live collecting and a curated collection of preserved specimens
- “Singing Insects Night Hike” Dawes Arboretum, Newark, OH: led a guided tour of insects attracted to light traps and a curated collection of preserved specimens
- “A night at the Bioreserve” Denison University Biological Reserve, Granville, OH: led a guided tour of insects attracted to light traps

Media Experience

BBC Radio 4: Served as guest expert to discuss cockroaches and their representation in media for the series *Natural Histories* (air date Nov. 3, 2015; <http://goo.gl/Tep0yX>)

The Ithaca Voice: “How Ithaca website pulls kids into the ‘fascinating world of insects’” by Jeff Stein, (January 9, 2015; <http://goo.gl/OKyAZI>)

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

Society Memberships

Animal Behavior Society
Entomological Society of America
International Society of Behavioral Ecology