

ERICA SARRO GUSTILO, PhD

gustiloe@uw.edu

EDUCATION

PhD in Entomology

University of California Riverside | Sept 2017 – June 2022
Department of Entomology; Woodard Lab
NSF Computational Entomology Fellow

Bachelor of Arts in Biology

Colorado College | May 2014
Major in Biology – Organisms, Ecology & Evolution; Minor in Environmental Issues
cum laude, Distinction in Biology

APPOINTMENTS

2024-Present **Postdoctoral Fellow**, National Science Foundation Postdoctoral Research Fellowship in Biology & University of Washington, Seattle, WA
2022-24 **Biologist**, U.S. Geological Survey, Northern Rocky Mountain Science Center, West Glacier, MT
2021 **Directorate Fellow**, U.S. Fish and Wildlife Service, Ecological Services, Yreka, CA

PUBLICATIONS

¹shared first authorship; *undergraduate mentee

PEER REVIEWED

Stein, E, W Janousek, **ES Gustilo**, T Graves (*In Review*) Integrating targeted surveys during community-wide assessments improves detection rates for species of concern.

Gustilo ES, W Velman, RE Newton, C Boone, RG Hatfield, T Graves (*In Review*) Quantifying floral resource value to pollinators: A case study from bumble bees in Montana, North Dakota, and South Dakota.

Gustilo ES, WH Grover, SH Woodard (2025) Wild Foundress Queen Bumble Bees Make Numerous, Short Foraging Trips and Exhibit Frequent Nest Failure: Insights From Trap-Nesting and RFID Tracking. *Ecology and Evolution*. 15(2), e71016. <https://doi.org/10.1002/ece3.71016>

Gustilo ES, K Fisher, SH Woodard (2023) Parental care behavior in bumble bee queens is tightly regulated by the number of helpers in incipient nests. *Animal Behaviour*. 203, 241-250. <https://doi.org/10.1016/j.anbehav.2023.07.009>

Sarro E (2022) Bumble bee queen plasticity and social regulation of traits. UC Riverside eScholarship. <https://escholarship.org/uc/item/9x39453s>

Sarro E, A Tripodi, SH Woodard (2022) Bumble bee (*B. vosnesenskii*) queen nest searching occurs independent of ovary developmental status. Integrative Organismal Biology. obac007. <https://doi.org/10.1093/iob/obac007>

¹Fisher K, ¹**Sarro E**, *C Miranda, *B Guillen, SH Woodard (2022) Worker task organization in incipient bumble bee nests. Animal Behaviour. 185:143-161. <https://doi.org/10.1016/j.anbehav.2021.12.005>

Sarro E, P Sun, K Mauck, *D Rodriguez-Arellano, N Yamanaka, SH Woodard (2021) An organizing feature of bumble bee life history: worker emergence promotes queen reproduction and survival in young nests. Conservation Physiology 9(1):coab047. <https://doi.org/10.1093/conphys/coab047>

TECHNICAL REPORTS AND NON-PEER REVIEWED PUBLICATIONS

*Dose L, **ES Gustilo**, TA Graves (2024) Bumble bees and flowering plants in Glacier National Park 2023. NPS Cooperator Report.

Gustilo ES. (2024) Pollinators in Central Montana – A Story from USGS. Winnett ACES Newsletter.

Gustilo ES, T Graves. (2024) Native Pollinators on Montana Rangelands. BLM Cooperator Report.

PRESENTATIONS

*undergraduate mentee

INVITED TALKS

- 2025 Bumble bee queen plasticity and social regulation of traits. Ohio State University. Columbus, OH.
- 2019 Social regulation of queen reproductive physiology. BOMBUSS 2.0: Building Our Methods by Using Sound Science, Next Steps in North American Bumble Bee Monitoring and Conservation. Toronto, ON.
- 2014 The power of active citizenship. Keynote Speech. Pikes Peak Justice & Peace Commission’s Annual Meeting. Colorado Springs, CO.

CONTRIBUTED TALKS (*SELECTED*)

- 2025 Uncovering the driving mechanisms of range contractions in bumble bees. North Coast and Cascades Science Days, Virtual Conference.
- 2024 Assessing pollinators in Montana rangelands (and beyond). USGS Sage & Fire Science Tech Transfer Webinar. Virtual Presentation.
- 2023 Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Ecological Society of America Annual Meeting, Portland, OR.
- 2023 Native Pollinators in Montana Rangelands. Winnett ACES Quarterly Meeting. Winnett, MT. Public Outreach Presentation.
- 2023 The importance of supporting bumble bees in the early spring. Montana Chapter of the Wildlife Society Annual Meeting, Helena, MT.
- 2022 Bumble bee queen plasticity and social regulation of traits. UC Riverside Dissertation Defense for the Department of Entomology, Riverside, CA.
- 2022 Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Pacific Branch of the Entomological Society of America Annual Meeting, Santa Rosa, CA.

- 2021 Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Colorado Pollinator Summit. Virtual Conference.
- 2021 Ovary development and mite presence in relation to nest establishment in bumble bee (*B. vosnesenskii*) queens. Ecological Society of America Annual Meeting, Virtual Conference.
- 2020 Ovary development is independent of nest establishment in bumble bee queens. University of California Riverside Entomology Seminar, Riverside, CA.
- 2019 *Miranda C. Crowdsourcing video data analysis of *Bombus impatiens* behavior in microcolonies. Pacific Branch of the Entomological Society of America, San Diego, CA.
- 2018 Does the social environment confer resilience? Effects of bumble bee workers on queen nest initiation. University of California Riverside Entomology Graduate Student Seminar Day, Riverside, CA.
- 2014 The effect of housing density and proximity to water on bee community assemblages. Colorado College Annual Biology Day, Colorado Springs, CO.

POSTERS (*SELECTED*)

- 2024 Native pollinators in Montana rangelands. Montana Pollinator Summit. Virtual Conference.
- 2023 Bumble bees and flowering plants in Montana Rangelands. Society for Rangeland Management Annual Meeting. Sparks, NV.
- 2021 *Guillén B. Survey of pathogens in relation to ovary development for bumble bee queens in Maine and Southern California. Ecological Society of America Annual Meeting. Denver, CO.
- 2021 Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Entomology Graduate Student Seminar Day, Riverside, CA.
- 2019 Social regulation of queen reproductive physiology. Entomology Graduate Student Seminar Day, Riverside, CA. ***First place in poster contest.***
- 2019 *Zhou G. Accelerated egg laying behavior in *Bombus impatiens* queens. Pacific Branch of the Entomological Society of America, San Diego, CA. ***First place in poster contest.***
- 2018 Does the social environment confer resilience? Effects of bumble bee workers on queen nest initiation. Ecological Society of America, Vancouver, BC.
- 2013 Test of homogenization of leaf traits across US cities. Ecological Homogenization of Urban America Meeting, Minneapolis, MN.

AWARDS

FELLOWSHIPS

- 2024-27 **National Science Foundation**, Postdoctoral Research Fellowship in Biology, \$240,000
- 2018-22 **National Science Foundation**, Research Traineeship in Computational Entomology, \$155,000
- 2021 **US Fish and Wildlife Service**, Directorate Fellows Program, Western Bumble Bee Monitoring for Species Status Assessment Development; *11-week, full-time position*
- 2018 **National Science Foundation**, Graduate Research Fellowship Program, *Honorable Mention*

GRANTS AND AWARDS

- 2025 **Western Society of Naturalists**, Rafe Sagarin Fund for Innovative Ecology Award, \$2,500

2024-25	U.S. Fish and Wildlife Service , USFWS-USGS Interagency Agreement for Unified sample design for evaluating refuge management effects on pollinators, \$120,000
2023-25	Bureau of Land Management , BLM-USGS Interagency Agreement for Pollinator diversity, habitat selection, and response to different grazing systems, \$275,000
2022	Rocky Mountain Biological Laboratory , Graduate Research Fellowship, \$550
2021	University of California Riverside , Graduate Dean's Dissertation Research Grant, \$1,000
2021	Colorado Mountain Club Foundation , Graduate Research Fellowship, \$1,000
2021	Rocky Mountain Biological Laboratory , Graduate Research Fellowship, \$1,170
2019	University of California Riverside Department of Entomology , Graduate Student of the Year
2019	University of California Natural Reserve System , Mildred E. Mathias Graduate Student Research Grant, \$1,000
2017	University of California Riverside , Chancellor's Distinguished Fellowship, \$6,000
2014	Colorado College , James Enderson Award in Conservation Biology
2010-14	Colorado College , Presidential Scholarship, \$20,000

TEACHING

PEDAGOGICAL TRAINING

2025	Evidence-Based Teaching in Biology: Teaching for Equity in STEM 10-week seminar, University of Washington
2021	College Level: Teaching Biology 10-week course, University of California Riverside
2020	Teaching Development Day 1-day workshop, Teaching Assistant Development Program, University of California Riverside

INSTRUCTION

2021	TEACHING ASSISTANT AND GUEST LECTURER, Insect Behavior ENTM162 , University of California Riverside
2021	TEACHING ASSISTANT, Evolution & Ecology BIOL005C , University of California Riverside
2019	GUEST LECTURER, Adventure Risk Challenge Yosemite , Yosemite National Park, CA
2018-19	CURRICULUM DEVELOPER & INSTRUCTOR, Junior Entomologists Summer Camp , Entomology Graduate Student Association, University of California Riverside
2016-17	INSTRUCTOR, PoshSplat Paint Studio , Boulder, CO
2015	TEACHING ASSISTANT, Biostatistics & Experimental Design BE220 , Colorado College
2014-15	TEACHING ASSISTANT AND GUEST LECTURER, Biology of Animals BE106 (x3 iterations), Colorado College
2014-15	TEACHING ASSISTANT AND GUEST LECTURER, Ecology BE208 (x2 iterations), Colorado College
2011-12	INSTRUCTOR, Young Farmers Summer Camp , Muscoot Farm, Katonah, NY

MENTORSHIP

2025	Ian Choy, University of Washington Undergraduate <i>Bumble bee thermal tolerance equipment design (lab)</i>
------	--

2025	Emma Lo, University of Washington Undergraduate <i>Bumble bee thermal tolerance equipment design (lab)</i>
2024	Janen Ritchea, U.S. Geological Survey Field Technician <i>Plants and pollinators in cattle-grazed systems (field)</i>
2024	Tyler Hannum, U.S. Geological Survey Field Technician <i>Plants and pollinators in cattle-grazed systems (field)</i>
2023-24	Lindsey Dose, U.S. Geological Survey Field Technician & Contractor <i>Plants and pollinators in cattle-grazed systems, Bumble bee detection (field)</i> - NPS report first author
2023	Christopher McGlone, U.S. Geological Survey Field Technician <i>Plants and pollinators in cattle-grazed systems (field)</i>
2022	Kate Neamsapaya, UC Riverside Undergraduate <i>Bumble bee social behavior (lab)</i>
2022	Brianna Baeza, UC Riverside Undergraduate <i>Bumble bee social behavior (lab)</i>
2021	Alexander Brinkley, UC Riverside Undergraduate <i>Bumble bee queen foraging and nesting behavior (field)</i>
2020-21	Ernesto Gonzalez, UC Riverside Undergraduate <i>SciComm@UCR, Popular Science Writing</i> - PopSci article first author
2020-21	Scott Nguyen, UC Riverside Undergraduate <i>SciComm@UCR, Popular Science Writing</i> - PopSci article first author
2019-21	Blanca Ortega Guillén, UC Riverside Undergraduate <i>Bumble bee behavior, reproductive physiology, and pathogens (lab)</i> - Manuscript co-author, ESA Talk
2019-21	Damaris Rodriguez-Arellano, UC Riverside Undergraduate <i>Reproductive physiology of bumble bee queens (lab)</i> - Manuscript co-author
2017-20	Christie Miranda, UC Riverside Volunteer <i>Bumble bee nest behaviors, Community science (lab)</i> - EntSoc Pacific Branch Talk
2018-19	Gina Zhou, UC Riverside Undergraduate <i>Reproductive physiology of bumble bee queens (lab)</i> - EntSoc Pacific Branch Poster (first place)
2018	Claire Healey, UC Riverside Field Technician <i>Bumble bee queen collection, rearing, and foraging behavior (field & lab)</i>
2018	Charles Schneider, UC Riverside Field Technician <i>Bumble bee queen collection, rearing, and foraging behavior (field & lab)</i>

OUTREACH & SERVICE

COMMUNITY OUTREACH

2018-22	FOUNDER & COORDINATOR, Junior Entomologists Summer Camp , Entomology Department, University of California Riverside, 150 hours
---------	---

- 2019 TRIP CO-LEADER, **Science in the Field: Tracking Wild Bumble Bees in Sequoia**, Atlas Obscura, Mineral King, CA, *50 hours*
- 2017-18 EVENT COORDINATOR, **Entomology Outreach Committee**, University of California Riverside, *75 hours*
- 2018-22 MEMBER, **Outreach and Educational Events Planning Committee**, Entomology Graduate Student Association, University of California Riverside, *75 hours*
- 2021-22 MARKETING CHAIR, **SciComm@UCR**, University of California Riverside, *50 hours*
- 2019-22 MEMBER, **SciComm@UCR**, University of California Riverside, *50 hours*
- 2015-16 ZOO INTERPRETATION INTERN, **Butterfly Pavilion Invertebrate Zoo**, Westminster, CO, *400 hours*

SERVICE COMMITTEES

- 2025 CHAIR, **Review Committee for Graduate Student Grants**, Rocky Mountain Biological Laboratory, *15 hours*
- 2024 MEMBER, **Review Committee for Graduate and Postdoc Grants**, University of Washington, *10 hours*
- 2024 MEMBER, **Review Committee for Graduate Student Grants**, Rocky Mountain Biological Laboratory, *10 hours*
- 2017-22 MEMBER, **Entomology Graduate Student Association**, University of California Riverside, *100 hours*
- 2019-20 GRADUATE STUDENT REPRESENTATIVE, **Entomology Outreach Committee**, University of California Riverside, *10 hours*

CONFERENCE SYMPOSIA

- 2024 CO-ORGANIZER, **Conference Symposium: Pollinator Work on Federal Lands**, Entomological Society of America Annual Meeting, Phoenix, AZ
- 2022 CO-ORGANIZER, **Conference Symposium: Causes and Consequences of Behavior in Social Hymenopteran Systems**, Pacific Branch of the Entomological Society of America Annual Meeting, Santa Rosa, CA

MANUSCRIPT REVIEWS

Journal of Animal Ecology, U.S. Geological Survey Fundamental Science Practices, Insectes Sociaux, Journal of Basic and Applied Ecology, Journal of Ecological Entomology

PROFESSIONAL DEVELOPMENT

- 2024 **Native Bee Conservation**, 2-day workshop, Entomological Society of America Annual Meeting, Phoenix, AZ
- 2024 **Google Earth**, 1-day workshop, Seattle, WA
- 2021 **Young Voices of Science**, 7-week invited workshop series, Hubbard Brook Research Foundation
- 2020 **Defending Science: Managing Rhetoric in SciComm**, ½ day workshop, Dr. Annika Speer, University of California Riverside
- 2019 **Reproducible and Collaborative Data Science**, 10 week course ENTM161, University of California Riverside
- 2019 **Software Carpentry: GitHub & Python**, 1-day workshop, University of California Riverside
- 2019 **Communicating Science with a General Audience**, ½ day workshop, University of California Riverside
- 2018 **Introduction to ArcGIS**, 1-day workshop, University of California Riverside
- 2018 **Computational Entomology**, 5-day boot camp, University of California Riverside
- 2017 **Approaches to Effective Outreach in Entomology**, 2-day workshop, The Bug Chicks

PROFESSIONAL MEMBERSHIPS

Ecological Society of America
Entomological Society of America
International Union for the Study of Social Insects
National Native Bee Monitoring Research Coordination Network
The Wildlife Society
Washington Native Bee Society
Washington Native Plant Society
West Seattle Garden Club
Western Society of Naturalists