

# ERICA SARRO GUSTILO, PhD

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## 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 & University of Washington, Seattle, WA

2022-2024 **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

**Sarro Gustilo E**, WH Grover, SH Woodard (*In Review*) Foundress queen bumble bees make frequent, short foraging trips and experience high nest failure: Insights from trap-nesting and RFID tracking.

**Sarro Gustilo E**, 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>

<sup>1</sup>Fisher K, <sup>1</sup>**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>

<sup>1</sup>shared first authorship; \*undergraduate mentee

## REPORTS & ARTICLES

\*Dose, L, **ES Gustilo**, T Graves (2024) Glacier National Park Bumble Bee Survey Report 2023. GNP IRMA. <https://doi.org/10.5066/P13FOZ7U>

**Gustilo ES** (2024) Pollinators in Central Montana - A Story from USGS. Winnett ACES Newsletter, March 2024.

\*mentee

## PRESENTATIONS

### INVITED TALKS

- 2019 **Sarro E**, SH Woodard. 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 **Sarro E**. The power of active citizenship. Keynote Speech. Pikes Peak Justice & Peace Commission's Annual Meeting. Colorado Springs, CO.

### CONTRIBUTED TALKS (*SELECTED*)

- 2023 **Sarro Gustilo E**, 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 **Sarro Gustilo E**, Native Pollinators in Montana Rangelands. Winnett ACES Quarterly Meeting. Winnett, MT. Public Outreach Presentation.
- 2023 **Sarro Gustilo E**, The importance of supporting bumble bees in the early spring. Montana Chapter of the Wildlife Society Annual Meeting, Helena, MT.
- 2022 **Sarro E**, Bumble bee queen plasticity and social regulation of traits. UC Riverside Dissertation Defense for the Department of Entomology, Riverside, CA.
- 2022 **Sarro E**, W Grover, SH Woodard. 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 **Sarro E**, W Grover, SH Woodard. Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Colorado Pollinator Summit.
- 2021 **Sarro E**, A Tripodi, SH Woodard. Ovary development and mite presence in relation to nest establishment in bumble bee (*B. vosnesenskii*) queens. Ecological Society of America Annual Meeting, Virtual Meeting.

- 2020 **Sarro E**, SH Woodard. Ovary development is independent of nest establishment in bumble bee queens. University of California Riverside Entomology Seminar, Riverside, CA.
- 2019 \*Miranda C, **E Sarro**, K Fisher, SH Woodard. Crowdsourcing video data analysis of *Bombus impatiens* behavior in microcolonies. Pacific Branch of the Entomological Society of America, San Diego, CA.
- 2018 **Sarro E**, SH Woodard. 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 **Sarro E**. The effect of housing density and proximity to water on bee community assemblages. Colorado College Annual Biology Day, Colorado Springs, CO.

\*undergraduate mentee

## POSTERS (*SELECTED*)

- 2023 **Sarro Gustilo E**, W Velman, C Boone, N Hupp, R Newton, A Oestreich, T Graves. Bumble bees and flowering plants in Montana Rangelands. Society for Rangeland Management Annual Meeting, Sparks, NV .
- 2021 \*Guillén B, **E Sarro**, SH Woodard. 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 **Sarro E**, W Grover, SH Woodard. Leveraging radio frequency identification (RFID) technology to track foraging behavior of early spring bumble bee queens. Entomology Graduate Student Seminar Day, Riverside, CA.
- 2019 **Sarro E**, P Sun, K Mauck, N Yamanaka, SH Woodard. Social regulation of queen reproductive physiology. Entomology Graduate Student Seminar Day, Riverside, CA. **First place in poster contest.**
- 2019 \*Zhou G, **E Sarro**, K Fisher, \*A Vanecek, K Watrous, SH Woodard. 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 **Sarro E**, SH Woodard. Does the social environment confer resilience? Effects of bumble bee workers on queen nest initiation. Ecological Society of America, Vancouver, BC.
- 2013 **Sarro E**, J Braun, J Cavender-Bares, S Hobbie, W Pearse. Test of homogenization of leaf traits across US cities. Ecological Homogenization of Urban America Meeting, Minneapolis, MN.

\*undergraduate mentee

## AWARDS

### FELLOWSHIPS

- 2024-2027 **National Science Foundation**, Postdoctoral Research Fellowship in Biology, \$240,000
- 2018-2022 **National Science Foundation**, Research Traineeship in Computational Entomology, \$155,000
- 2022 **Rocky Mountain Biological Laboratory**, Graduate Research Fellowship, \$550
- 2021 **US Fish and Wildlife Service**, Directorate Fellows Program, Western Bumble Bee Monitoring for Species Status Assessment Development; *11-week, full-time position*

2021	<b>Colorado Mountain Club Foundation</b> , Graduate Research Fellowship, \$1,000
2021	<b>Rocky Mountain Biological Laboratory</b> , Graduate Research Fellowship, \$1,170
2018	<b>National Science Foundation</b> , Graduate Research Fellowship Program, <i>Honorable Mention</i>
2017	<b>University of California Riverside</b> , Chancellor's Distinguished Fellowship, \$6,000

## GRANTS AND AWARDS

2021	<b>University of California Riverside</b> , Graduate Dean's Dissertation Research Grant, \$1,000
2019	<b>University of California Riverside Department of Entomology</b> , Graduate Student of the Year
2019	<b>University of California Natural Reserve System</b> , Mildred E. Mathias Graduate Student Research Grant, \$1,000
2014	<b>Colorado College</b> , James Enderson Award in Conservation Biology
2010-2014	<b>Colorado College</b> , Presidential Scholarship, \$20,000

## TEACHING

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### PEDAGOGICAL TRAINING

2021	<b>College Level: Teaching Biology</b> Course BIOL301, University of California Riverside
2020	<b>Teaching Development Day</b> Workshop, Teaching Assistant Development Program, University of California Riverside

### INSTRUCTION

2021	<b>Teaching Assistant and Guest Lecturer</b> , Insect Behavior ENTM162, University of California Riverside
2021	<b>Teaching Assistant</b> , Evolution & Ecology BIOL005C, University of California Riverside
2019	<b>Guest Lecturer</b> , Adventure Risk Challenge Yosemite, Yosemite National Park, CA
2018-2019	<b>Curriculum Developer &amp; Teacher</b> , Junior Entomologists Summer Camp, Entomology Graduate Student Association, University of California Riverside
2016-2017	<b>Teacher</b> , PoshSplat Paint Studio, Boulder, CO
2015	<b>Teaching Assistant</b> , Biostatistics & Experimental Design BE220, Colorado College
2014-2015	<b>Teaching Assistant and Guest Lecturer</b> , Biology of Animals BE106 (x3 iterations), Colorado College
2014-2015	<b>Teaching Assistant and Guest Lecturer</b> , Ecology BE208 (x2 iterations), Colorado College
2011-2012	<b>Teacher</b> , Young Farmers Summer Camp, Muscoot Farm, Katonah, NY

## OUTREACH & SERVICE

2024	<b>Co-Organizer</b> , Conference Symposium: Pollinator Work on Federal Lands, Entomological Society of America Annual Meeting, Phoenix, AZ
2024	<b>Graduate Fellowship Committee Member</b> , Rocky Mountain Biological Laboratory Grants Committee
2022-2024	<b>Volunteer Visiting Scientist</b> , University of Washington, Department of Biology, Brosi Lab
2023	<b>Manuscript Reviewer</b> , US Geological Survey Fundamental Science Practices
2022-2023	<b>Manuscript Reviewer</b> , Insectes Sociaux
2018-2022	<b>Founder &amp; Coordinator</b> , Junior Entomologists Summer Camp, Entomology Department, University of California Riverside, <i>150 hours</i>
2018-2022	<b>Member</b> , Outreach and Educational Events Planning Committee, Entomology Graduate Student Association, University of California Riverside, <i>75 hours</i>
2022	<b>Co-Organizer</b> , Conference Symposium: Causes and Consequences of Behavior in Social Hymenopteran Systems, Pacific Branch of the Entomological Society of America Annual Meeting, Santa Rosa, CA
2021-2022	<b>Marketing Chair</b> , SciComm@UCR, University of California Riverside, <i>50 hours</i>
2021	<b>Manuscript Co-Reviewer</b> , Journal of Ecological Entomology
2020-2021	<b>Mentor</b> , Undergraduate Mentorship Program in Popular Science Writing, SciComm@UCR, University of California Riverside, <i>20 hours</i>
2019-2020	<b>Graduate Student Representative</b> , Outreach Committee, Entomology Department, University of California Riverside, <i>10 hours</i>
2019	<b>Manuscript Co-Reviewer</b> , Journal of Basic and Applied Ecology
2019	<b>Trip Co-Leader</b> , Science in the Field: Tracking Wild Bumble Bees in Sequoia, Atlas Obscura, Mineral King, CA, <i>50 hours</i>
2017-2018	<b>Outreach Coordinator</b> , Entomology Department, University of California Riverside, <i>75 hours</i>
2016	<b>Research Intern</b> , The Guppy Project, University of California Riverside, Arima Valley, Trinidad & Tobago, <i>400 hours</i>
2015-2016	<b>Zoo Interpretation Intern</b> , Butterfly Pavilion Invertebrate Zoo, Westminster, CO, <i>400 hours</i>
2015-2016	<b>Entomology Collections Volunteer</b> , University of Colorado Museum of Natural History, Boulder, CO, <i>150 hours</i>

## PROFESSIONAL DEVELOPMENT

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2024	<b>Google Earth</b> 1-day Workshop, Seattle, WA
2021	<b>Young Voices of Science</b> 7-week Invited Workshop Series, Hubbard Brook Research Foundation
2020	<b>Defending Science: Managing Rhetoric in SciComm</b> Workshop, Dr. Annika Speer, University of California Riverside
2019	<b>Reproducible and Collaborative Data Science</b> Course ENTM161, University of California Riverside
2019	<b>Software Carpentry: GitHub &amp; Python</b> Workshop, University of California Riverside

- 2019 **Communicating Science with a General Audience** Workshop, University of California Riverside
- 2018 **Introduction to ArcGIS** Workshop, University of California Riverside
- 2018 **Computational Entomology** Boot Camp 5-day Workshop, University of California Riverside
- 2017 **Approaches to Effective Outreach in Entomology** 2-day Workshop, The Bug Chicks