

Kaleigh Fisher, Ph.D.

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Education

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| University of California, Riverside <i>Advisor: S. Hollis Woodard</i> | Entomology | Ph.D. 2021 |
| University of Michigan <i>Advisor: Ivette Perfecto</i> | Natural Resources and Environment | M.S. 2016 |
| University of Michigan | Ecology and Evolutionary Biology | B.S. 2013 |

Professional Experience

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| Lecturer Santa Clara University | Environmental Studies and Sciences | 2025-Present |
| Adjunct Lecturer University of California, Davis | Wildlife, Fish and Conservation Biology and Evolution and Ecology | 2025 |
| NIFA Postdoctoral Researcher University of California, Davis <i>Supervisor: Santiago Ramirez</i> | Evolution and Ecology | 2022-2024 |
| Postdoctoral Researcher University of California, Riverside <i>Supervisor: S. Hollis Woodard</i> | Entomology | 2021-2022 |

Publications

Published, in press, or accepted (undergraduate mentees underlined)

Fisher K, Guillen M, Dahankaur A, Yamanaka N, Woodard SH. (2025). BMC Genomics. Expression analyses of chemosensory genes provide insights into evolution of gustatory receptor genes in the bumble bee *Bombus impatiens*. 26(1).

Gustilo ES, **Fisher K**, Woodard SH. (2023). Parental care behaviour in bumble bee queens is tightly regulated by the number of helpers in incipient nests. In press for Animal Behaviour.

Costa CP, Leza M, Duennes MA, **Fisher K**, Vollaro A, Hur M, Kirkwood JS, Woodard SH. (2022). Pollen diet mediates how pesticide exposure impacts brain gene expression in nest-founding bumble bee queens. *Science of the Total Environment* 833: 155216. DOI: 10.1016/j.scitotenv.2022.155216.

Fisher K, Watrous KM, Richardson LL, Williams NM, Woodard SH. (2022b). A contemporary survey of bumble bee diversity across the state of California. *Ecology and Evolution* 12(3): e8505. DOI: 10.1002/ece3.8505.

Fisher K, Sarro E, Miranda CK, Guillen BM, Woodard SH. Worker task organization in incipient bumble bee nests. (2022a). *Journal of Animal Behaviour* 185: 143-161. DOI: 10.1016/j.anbehav.2021.12.005.

Costa CP, **Fisher K**, Guillen BM, Bloch G, Yamanaka N, and Woodard SH. (2021) Care-giver identity impacts offspring development and performance in an annually social bumble bee. *BMC Ecology and Evolution*.

Costa CP, Duennes MA, **Fisher K**, Der JP, Watrous KM, Okamoto N, Yamanaka N, and Woodard SH. (2020) Transcriptome analysis reveals nutrition- and age-related patterns of gene expression in the fat body of pre-overwintering bumble bee queens. *Molecular Ecology* 29(4):720-737. DOI: [10.1111/mec.15361](https://doi.org/10.1111/mec.15361).

Fisher K, West M, Lomeli AM, Woodard SH and Purcell J. (2018) Are societies resilient? Challenges faced by social insects in a changing world. *Insectes Sociaux*: 1-9.

Vaidya C, **Fisher K** and Vandermeer J. (2018) Colony development and reproductive success of bumblebees in an urban gradient. *Sustainability* 10: 1936.

Fisher K, Gonthier D, Ennis K and I Perfecto. (2017) Floral resource availability from groundcover promotes bee abundance in coffee agroecosystems. *Ecological Applications* 27: 1815-1826.

Lu B, Bridges D, Yang Y, **Fisher K**, Cheng A, Chang L, Meng Z, Lin J, Downes M, Yu R, Liddle C, Evans R and A Saltiel. (2014) Metabolic crosstalk: molecular links between glycogen and lipid metabolism in obesity. *Diabetes*.

Bridges D, **Fisher K**, Zolov SN, Xiong T, Inoki K, Weisman L, and AR Saltiel. (2012) Rab5 proteins regulate activation and localization of target of rapamycin complex 1. *Journal of Biological Chemistry* 287.

Publication Pre-prints

Submitted, in review, and/or available via bioRxiv

Fisher K, Duennes MA, Woodard SH. (2022). Mountains as refugia: evidence from bumble bee brain transcriptomes. *bioRxiv*, DOI: 10.1101/2022.09.09.507046.

Fellowships, Grants and Awards

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| 2023 | German Research Foundation for International Collaborations with Leonhardt Lab | \$5,000 |
| 2021 | USDA NIFA Postdoctoral Research Fellowship | \$224,773 |
| 2021 | NSF Postdoctoral Research Fellowship in Biology (declined) | \$138,000 |
| 2020 | Shipley Skinner Award, UCR | \$12,952 |
| 2020 | Professor Rahamimoff Travel Grant, US-Israel Binational Science Foundation | \$4,000 |
| 2018 | Mildred E. Mathias Grant, UCR | \$1,000 |
| 2017 | UC MEXUS Small Grant | \$1,400 |
| 2016-2021 | UC Riverside Chancellor's Distinguished Fellowship | \$20,378 |
| 2016 | Donald M. Mathews Award in Forest Stewardship | \$500 |
| 2014 | Rackham Graduate Student Research Grant, University of Michigan | \$1,500 |
| 2014 | SNRE Thesis Research Grant, University of Michigan | \$1,000 |
| 2014 | Women's National Michigan Farm & Garden Association Award | \$1,000 |

Presentations

Invited Presentations

- 2024** Center for Population Biology Seminar, UC Davis, Davis, CA
- 2020** Fisher K. Social insects and evolution. University of the Arts London, Biodesign Program.
- 2020** Fisher K. Bumble bees: their evolutionary past and uncertain future. Claremont McKenna, W.M. Keck Science Department, Claremont, California.
- 2019** Fisher K, Sarro E, Woodard S. Division of labor in bumble bee microcolonies: A tool for studying responses to resources fluctuations. Entomology Society of America, St. Louis, Missouri.

Contributed Presentations

- 2022 **Fisher K**, Duennes MA, and Woodard SH. Mountains as refugia: evidence from bumble bee transcriptomes. Ecological Society of America Annual Meeting, Montreal, CA.
- 2018 **Fisher K** and Woodard SH. Evidence for a foraging division of labor in bumble bee (*Bombus impatiens*) micro-colonies. Southern California Animal Behavior Conference, Los Angeles, USA. Poster
- 2017 **Fisher K**, de la Mora A, and Woodard SH. Seasonal variation in resource collection by *Tetragonisca angustula* in a coffee agroecosystem. Congreso Mesoamericano sobre Abejas Nativas, Antigua, Guatemala. Poster.

- 2017 Vaidya C, **Fisher K**, Vandermeer J. Colony development and reproductive success of bumble bees in an urban gradient. Ecological Society of America Annual Meeting, Portland, USA. Oral presentation COS 165-2.
- 2017 **Fisher K**, de la Mora A, and Woodard SH. Stingless bee foraging activity and success in dynamic resource environments. Association for Tropical Biology and Conservation, Merida, Mexico. Poster.
- 2016 **Fisher K**, Gonthier D, Ennis K, and Perfecto I. Phenological floral resource complementarity is important for bee abundance. Alliance of women in Agroecology (AMA-AWA), Uduado, Puerto Rico. Poster.
- 2015 **Fisher K**, Gonthier D, Ennis K, and Perfecto I. The effect of temporal resource availability on bee diversity and pollination services in a coffee agroecosystem. Ecological Society of America Annual Meeting, Baltimore, USA.
- 2014 **Fisher K**, Iverson A, Gonthier D, Ennis K, Philpott S, and Perfecto I. Shade coffee can conserve biodiversity without sacrificing yield. Ecological Society of America Annual Meeting, Sacramento, USA. Poster PS 59-14
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Teaching Experience

Instructor of Record

- 2025 University of California, Davis, Department of
Applied Statistics for Wildlife Biology (WFC103)

Guest Lecturer:

- 2020 R-Ladies, Riverside
Topic: Intro to Github and R
- 2020 University of California, Riverside, *Undergraduate Research Methods (ENTM 197)*
Topic: Data Manipulation and Reproducibility
- 2020 University of California, Riverside, *Entomology Graduate Student Core (ENTM 203)*
Topic: Data Manipulation and Reproducibility
- 2018 University of California, Riverside, *Insect Behavior (ENTM 162)*
Topic: Social Insects
- 2018 University of California, Riverside, *Entomology for Non-Majors (ENTM 010)*
Topic: Social Insects
- 2017 University of California, Riverside, *Insect Behavior (ENTM 162)*
Topic: Social Insects

Teaching Assistant:

- 2018 University of California, Riverside, *Entomology for Non-Majors*
- 2017 University of California, Riverside, *Insect Behavior*
- 2016 University of Michigan, *Introductory Biology Lab*
- 2015 University of Michigan, *Ecology Lab*
- 2015 University of Michigan, *Introductory Biology Lab*
- 2014 University of Michigan, *Our Common Future*
- 2014 University of Michigan, *Introductory Biology Lab*
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Mentorship

- 2022-Present** University of California, Davis: Postdoctoral Fellow
- Mentored three undergraduate students
- 2021-2022** University of California, Riverside: Postdoctoral Fellow
- Mentored two undergraduate students
- 2016-2021** University of California, Riverside: PhD student
- *Mentored five undergraduate students in summer and during the academic year; two students are now in graduate school*
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Training Workshops

- 2018** University Teaching Course, UC Riverside
- 2017** Native Bees in Central America Meliponiculture Workshop, Antigua, Guatemala
- 2017** Chancellor's Diversity Education Program: Making Excellence Inclusive, UC Riverside
- 2017** La Kretz Institute Conservation Genomics Workshop, UC Los Angeles
- 2015** Native Bees in Central America Taxonomy Course, San Cristobal de las Casas, Chiapas, Mexico
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Science Outreach and Service

- 2021** **Break out group leader for US National Native Bee Monitoring Research Coordination Network Workshop**
Led five breakout sessions to discuss objectives to achieve a national native bee monitoring strategy with a diverse group of stakeholders including academics, government employees, land managers, and non-profit employees.
- 2020-2021** **Skype-a-scientist volunteer**
Organized and led virtual outreach activities for K-12 classrooms.
- 2020** **Bees of California Presentation, Belaire Garden Club, Belaire, California**
Delivered a lecture on Native Bees of Southern California at monthly meeting.
- 2016-2021** **Outreach with the Entomology Department at UC Riverside**
Completed more than 300 hours of outreach with K-12 schools and programs. Coordinated outreach activities for all graduate students from 2016 to 2017. Co-founded the Entomology department summer camp, which is now a week-long summer camp held yearly for 4th-6th graders.
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Professional Service and Membership

Committee work:

- 2022-2024** **Early Career Representative for Ecology Society of America Publications Committee**
Represented the Early Career Section of the Ecology Society of America on the committee. Focused on increasing representation of international researchers in ESA publications as well as early career researchers.

- 2020-2021 **Chair and Founding Member of Entomology Graduate Student Association Diversity, Equity and Inclusion Committee**
Established and formulated objectives for the committee. Created partnership with Entomology Faculty DEI Committee. Hosted quarterly graduate student support workshops and panels.
- 2020-2021 **Graduate Student Representative for Entomology Department Instruction and Student Affairs Committee, University of California, Riverside**
Represented graduate students in the monthly committee meetings. Helped update the graduate student handbook and served on subcommittee to choose first DEI undergraduate award recipient.
- 2016-2018 **Representative for the Entomology Graduate Students at the Graduate Student Association (GSA), University of California, Riverside**
Represented Entomology graduate student needs at monthly meetings and served on the GSA Basic Needs Committee and GSA Diversity and Inclusion Committee
- 2018-2020 **Graduate Student Representative for the Entomology Department Seminar Committee, University of California, Riverside**
Helped organize logistics for visiting speakers as part of the seminar series.

Reviewer:

Agriculture, Ecosystems and the Environment; Tropical Conservation Science; Scientific Reports; Proceedings of the Royal Society B: Biological Sciences.

Society Membership:

Society for the Study of Evolution, Ecological Society of America, International Union for the Study of Social Insects, Society for Open, Reliable, and Transparent Ecology and Evolutionary Biology.
