LISA COUPER, PH.D.

Department of Biology, Stanford University
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EDUCATION

Environmental Health Sciences, UC Berkeley 2023 - present
Postdoctoral scholar

Biology, Stanford University 2018 - 2023, Ph.D.
Thesis: Mosquitoes in a warming world: climate adaptation and its consequences for disease transmission

Biology, San Francisco State University 2016 - 2018, M.S.
Thesis: Microbial community ecology of California Lyme disease system

Environmental Science, University of North Carolina 2010 - 2014, B.S. Highest Honors
Thesis: Land use affects coastal stream phytoplankton nutrient and light limitation

PUBLICATIONS

16. **Couper LI**, Farner JE, Lyberger KP, Lee AS, Mordecai EA, Lyberger KL. Evidence of thermal adaptation in a widely distributed mosquito species *Submitted. Available now on bioRxiv*

15. Ismail S, Farner JE, **Couper LI**, Mordecai EA, Lyberger KL. Temperature and intraspecific variation affect host-parasite interactions. *Under review at Oecologia*

14. **Couper LI** and Mordecai EA. Ecological drivers of dog heartworm transmission in California. Parasites and Vectors. 2022.

13. Kirk D, Straus S, Childs LM, Harris M, **Couper LI**, Davies JT, Forbes C, Gehman AL, Groner ML, Harley C, Lafferty KD, Savage V, Skinner E, O'Connor M, Mordecai EA. Temperature impacts on dengue incidence are nonlinear and mediated by climatic and socioeconomic factors. *Under review at Nature Climate Change.*

12. Ring KC **Couper LI**, Sapiro AL, Yarza F, Yang XF, Clay K, Mateusiak C, Chou S, Swei A. Host blood meal identity modifies vector gene expression and competency. Molecular Ecology. 2022.

11. **Couper LI**, Farner JE, Caldwell JM, Childs ML, Harris MJ, Kirk DG, Nova N, Shocket M, Skinner EB, Uricchio LH, Exposito-Alonso M, and Mordecai EA. How will mosquitoes adapt to climate warming? eLife. 2021

10. **Couper LI**, NJ Sanders, NE Heller, and DM Gordon. Multiyear drought exacerbates long-term effects of climate on an invasive ant species. Ecology. 2021.

9. **Couper LI**, MacDonald AJ, Mordecai EA. Impact of prior and projected climate change on US Lyme Disease incidence. Global Change Biology. 2021.

8. Childs ML*, Kain MP*, Kirk D*, Harris M, **Couper LI**, Nova N, Delwel I, Ritchie J, Mordecai EA. The impact of long-term non-pharmaceutical interventions on COVID-19 epidemic dynamics and control: the value and limitations of early models. Proceedings of the Royal Society B. 2021

7. Athni TS, Shocket MS, **Couper LI**, Nova N, Caldwell IR, Caldwell JM, Childress JN, Childs ML, De Leo GA, Kirk D, MacDonald AJ, Olivarius K, Pickel DG, Winokur OC, Young HS, Cheng J, Grant EA, Kurzner PM, Kyaw S, Lin BJ, López RC, Massihpour DS, Olsen EC, Roache M, Ruiz A, Schultz EA, Shafat M, Spencer RL, Bharti N, Mordecai EA How vector-borne disease shaped the course of human history. Ecology Letters. 2021.

6. **Couper LI**, Yang Y, Yang XF, Swei A. Comparative vector competence of North American Lyme disease vectors. Parasites and Vectors. 2020.

5. Swei A, **Couper LI**, Coffey LL, Kapan D, Bennett S. Patterns, drivers, and challenges of vector-borne zoonotic disease emergence. Vector Borne Zoonotic Diseases. 2020.

4. Swei A, O'Connor KE, **Couper LI**, Thekkiniath J, Conrad PA, Padgett KA, Burns J, Yoshimizu MH, GonzalesB, Munk B, Shirkey N, Konde L, Mamoun CB, Lane LS, Kjemtrup A. 2018. Evidence for transmission of the zoonotic apicomplexan parasite Babesia duncani by the tick Dermacentor albipictus. Int J Parasitol. 2019.

3. **Couper LI**, Kwan JY, Ma J, Swei A. Drivers and patterns of microbial community assembly in a Lyme disease vector. Ecol. Evol. 2019.

2. Chicana B, **Couper LI**, Kwan JY, Tahiraj E, Swei A. Microbiome profiles of sympatric tick species in the western United States. Insects. 2019.

1. **Couper LI** and Swei A. Tick microbiome characterization by next-generation 16S rRNA amplicon sequencing. J. Vis. Exp. 2018.

Book Chapters

Kirk DG, Skinner EB, Shocket MS, **Couper LI**, Nova N, Athni TS, Pourtois JD, Farner JE, Childs ML, Nyathi S, Mordecai EA. Climate Change and Disease Ecology. In: Suzán G, Aguirre AA, Mills JM, editors. The Ecology of Infectious Diseases: Methods on Evolution, Biodiversity, and Environmental Interactions. Oxford University Press. In press.

Shocket MS, Anderson CB, Caldwell JM, Childs ML, **Couper LI**, Han S, Harris MJ, Howard ME, Kain MP, MacDonald AJ, Nova N, Mordecai EA. 2020. Environmental Drivers of Vector-Borne Diseases. In: Drake JM, editor. Ecology and Evolution of Infectious Diseases: Population Biology of Vector-borne Diseases. Oxford University Press (accepted, in press).

Conference paper

Johannes K, Powers J, **Couper LI**, Silberglitt M, Davenport JL. 2016. Tangible Models and Haptic Representations Aid Learning of Molecular Biology Concepts. Proceedings of the 38th Annual Meeting of the Cognitive Science Society, 372-377

PRESENTATIONS AND TALKS

Conference Talks

ESA 2023: "Evidence of thermal adaptation in a widely distributed mosquito species"

Invited Talks

PacVec Annual Meeting, 2022 and Mosquito and Vector Control Association of California annual conference, 2022: "Variation in thermal tolerance in the western tree hole mosquito, Aedes sierrensis"

Santa Clara University, Department of Biology 2021.

Poster presentations

Couper LI, MacDonald AJ, Mordecai EA. AGU, San Francisco, CA. Climate warming likely to increase Lyme disease in the Northeastern US. 2019

Couper LI, Yang Y, Yang XF, Clay K, Swei A. ESA, New Orleans, LA. Tick Microbiome Affects Competence for Lyme Disease Bacteria. 2018

Couper LI, Kwan J, Ma J, Swei A. EEID, Santa Barbara, CA. Microbiome Variation and Competitive Consequences in the California Lyme Disease Vector. 2017

REVIEWING

Journal of Thermal Biology, BMC Genomics, BMC Microbiology, Parasites and Vectors, PNAS, Ticks and Tick-borne diseases, PeerJ Life and Environment, Vector-borne and Zoonotic Diseases

AWARDS, GRANTS AND FELLOWSHIPS

Predoctoral Fellow, Center for Computational, Evolutionary and Human Genomics (CEHG), Stanford University ($17,000)	2022 - 2023
Philippe Cohen Graduate Fellowship (2 year stipend and tuition)	2021 - 2023
Stanford Graduate Fellowship (3 year stipend and tuition)	2018 - 2021
Pacific Southwest Center of Excellence in Vector-Borne Diseases Training Grant ($25,000)	2021
A.W. Mellon Foundation grant ($14,000)	2018, 2020
Lewis and Clark Field Scholar ($3,300)	2021
Society of Integrative and Comparative Biology Student Research Award Recipient ($1,000)	2022
Sigma Xi member	2020 - present
Excellence in Teaching Award, Department of Biology, Stanford	2019
Best Graduate Student Poster, Ecological Society of America	2018
Symposium Scholar, Population Biology of Vector-borne Diseases	2018
Graduate award for distinguished achievement, Department of Biology, SFSU	2018
Highest Honors with Distinction, Department of Environmental Science, UNC	2014
Buckley Public Service Scholar, UNC	2014
Betsy Steele and Geo Watts Carr award. Environmental Science, UNC	2014

TEACHING

Instructor, Foothill College. R Programming for Biology.	2022
Teaching Assistant, Stanford. Introduction to Ecology	2019
Teaching Assistant, Stanford. Introduction to Problem Solving in Biology	2019
Instructor, San Francisco State University. Introduction to R Programming.	2017 - 2018

SERVICE AND MENTORSHIP

High School Tutor, East Palo Alto Tennis and Tutoring	2021-2022
Research mentor, Biology Summer Undergraduate Research Program (B-SURP), Stanford	2019-2022
Research mentor, Future Advancers of Science and Technology (FAST), Stanford	2020
Article writing chair. Scientists Speak Up, Stanford	2018-2021
Chair, Biology Department Seminar Series Speaker Selection Student Committee, Stanford	2019
Co-Organizer, Bay Area Ecology and Evolution of Infectious Disease conference	2019

PROFESSIONAL EXPERIENCE

WestEd, Oakland (2014 - 2016). Developed and assessed efficacy of tangible molecular models to improve high school biology learning