LISA COUPER

Department of Biology, Stanford University
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EDUCATION

Biology, Stanford University 2018 - Present, Ph.D.

Fields of inquiry: Ecology and evolution of vector-borne disease

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

13. **Couper LI** and Mordecai EA. Ecological drivers of dog heartworm transmission in California. *Accepted at Parasites and Vectors.*

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

INVITED TALKS

Pacific Southwest Center of Excellence in Vector-borne Diseases annual conference	2022
Mosquito and Vector Control Association of California annual conference	2022
Department of Biology. Santa Clara University	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 Microbiology, Parasites and Vectors, Ticks and Tick-borne 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 present

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