

# Clara Rehmann

## Ph.D. Candidate

Institute of Ecology and Evolution, University of Oregon

✉ [crehmann@uoregon.edu](mailto:crehmann@uoregon.edu)

🔗 [clararehmann.github.io](https://clararehmann.github.io)

📄 [github.com/clararehmann](https://github.com/clararehmann)

## Education

**Ph.D.** Ecology and Evolutionary Biology

University of Oregon *Eugene, Oregon*

September 2021 - present

**Bachelor of Science** Biology

University of Oregon *Eugene, Oregon*

University of California, Los Angeles *Los Angeles, California*

June 2020

September 2018 - June 2020

September 2017 - June 2018

## Research experience

**Spatial dynamics of selective sweeps**

September 2022 - present

Advisor: Dr. Andrew Kern, *University of Oregon*

Simulation-based research for PhD dissertation investigating the effects of spatial population structure on selective sweeps.

**Machine learning inference of location from genetic data**

June 2020 - present

Advisor: Dr. Andrew Kern, *University of Oregon*

Simulation-based research investigating the impact of spatially-biased training data on machine learning inference of location from genetic data.

**Cross-species analysis of transcription expression**

March 2022 - June 2022

Advisor: Dr. William Cresko, *University of Oregon*

Rotation project assessing the effects of cross-species scRNA-seq integration methods on analysis outcomes.

**Modeling high-order epistasis in populations**

September 2021 - December 2021

Advisor: Dr. Michael Harms, *University of Oregon*

Rotation project simulating population-level evolutionary trajectories across fitness landscapes.

**Bacterial-host evolutionary conflict**

April 2020 - June 2021

Advisor: Dr. Matthew Barber, *University of Oregon*

Computational and experimental work investigating coevolutionary dynamics between the primate immune system and bacteria.

**Fitness effects of inaccurate translation**

September 2017 - June 2018

Advisor: Dr. Beth Lazazzera, *University of California, Los Angeles*

Experimental work investigating impacts of the loss of aminoacyl-tRNA synthetase editing on *E. coli* fitness

## Teaching Experience

### Evolutionary Biology

Fall 2023

Guest Lecturer *Department of Biology, University of Oregon*  
Lectured on integrating evolutionary forces.

### Computational Genetics

Spring 2023

Guest Lecturer *Department of Biology, University of Oregon*  
Lectured on principal component analysis and data visualization.

### Evolutionary Biology

Fall 2022

Guest Lecturer *Department of Biology, University of Oregon*  
Lectured on genotypic and phenotypic variation.

### General Biology IV: Mechanisms

Spring 2022

Graduate Employee *Department of Biology, University of Oregon*  
Lead and instructed students during wet and dry lab activities, graded assignments and assisted in curriculum development.

### Immunology and Infectious Disease

Winter 2022

Graduate Employee *Department of Biology, University of Oregon*  
Developed discussion material, lead and instructed students during discussions, and graded assignments.

### Evolutionary Biology

Fall 2021

Graduate Employee *Department of Biology, University of Oregon*  
Lead student discussions of publications in evolutionary biology, and graded assignments.

### Marine Biology

Winter 2020

Biology Undergraduate Lab Assistant *Department of Biology, University of Oregon*  
Assisted in instruction of students during wet lab activities.

### General Biology IV: Mechanisms

Summer 2019

Biology Tutor for Undergraduates *Department of Biology, University of Oregon*  
Assisted in instruction of students during lectures and wet and dry lab activities

## Conferences and Meetings

### SMBE

July 2024

Society for Molecular Biology and Evolution, *Puerto Vallarta, Jalisco, Mexico*  
Talk: In space no one can hear you sweep: A novel signal of selective sweeps in continuous geographic space

### The Allied Genomics Conference

March 2024

Genetics Society of America, *National Harbor, Maryland, USA*  
Poster: In space no one can hear you sweep: Dynamics and outcomes of selective sweeps in continuous geographic space

### SMBE

July 2023

Society for Molecular Biology and Evolution, *Ferrara, Italy*  
Poster: Location, location, location: Evaluating evidence for co-geography in the *Anopheles* Plasmodium host-parasite system

## EVO-WIBO

April 2023

American Society of Naturalists, *Port Townsend, Washington, USA*

Poster: Location, location, location: Dissecting errors in machine learning prediction of geography

## Population, Evolutionary, and Quantitative Genetics

June 2022

Genetics Society of America, *Asilomar, California, USA*

Poster: Location, location, location: Dissecting errors in machine learning prediction of geography

## Probabilistic Modeling in Genomics

April 2021

Cold Spring Harbor Laboratories, *virtual*

Poster: Location, location, location: Dissecting errors in machine learning prediction of geography

## Publications

**Rehmann CR**, Ralph PL, Kern AD. Evaluating evidence for co-geography in the *Anopheles Plasmodium* host-parasite system. *G3 Genes—Genomes—Genetics*, Volume 14, Issue 3, March 2024, jkae008, DOI: 10.1093/g3journal/jkae008

### *Preprints:*

Chevy E, Miseon J, Caudill V, Champer S, Haller B, **Rehmann CR**, Smith CS, Tittes S, Messer P, Kern AD, Ramachandran S, Ralph PL. Population genetics meets ecology: a guide to individual-based simulations in continuous landscapes. DOI: 10.1101/2024.07.24.604988

### *In prep:*

**Rehmann CR**, Ralph PL, Kern AD. A novel signal of selective sweeps in continuous geographic space.

## Outreach and Community Involvement

### Women in Graduate Sciences

Fall 2021 - present

#### *President*

Academic Year 2024 - 2025

Conducting and aiding in organization of WGS meetings and events; collaborating with the Graduate School, UO Foundation, and Associated Students of the UO; promoting the mission of WGS.

#### *Public Relations Chair*

Academic Year 2023 - 2024

Communicating with WGS members; advertising WGS events to the on- and off-campus community.

#### *Social Co-chair*

Academic Year 2022 - 2023

Planning and organizing social events for WGS members and the local community.

#### *Mad Duck Outreach*

Winter 2023 - present

Helping facilitate on-campus science activities for middle school students.

### Graduate Evolutionary Biology and Ecology Students

Fall 2021 - present

#### *SPECIE2S chair*

Academic year 2023 - 2024

Organizing and facilitating weekly writing groups and peer feedback sessions.

#### *Seminar committee*

Academic Year 2022 - 2023; 2023 - 2024

Helping plan and organize an annual free public seminar on current topics in biology.

**Genetics Society of America Member**

Winter 2022 - present

**American Society of Naturalists**

Winter 2023 - present

**Society for Molecular Biology and Evolution**

Spring 2023 - present

## **Invited Talks**

**Lighthouse Lightning Talks**

2 February 2024

Verena Viral Emergence Research Institute, *virtual*

Location, location, location: Evaluating evidence for co-geography in the Anopheles Plasmodium host-parasite system