

Sarah K. Swiston

Washington University — Saint Louis, Missouri

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Professional Website: <http://sswiston.com>

My research focuses on developing phylogenetic methods for inferring where species used to live, using lizards as a primary system of study. I am also interested in teaching, pedagogy, and designing learning tools for current and future researchers.

EDUCATION

Washington University Saint Louis, MO	2020 – Present
Ph.D. Candidate in Ecology & Evolutionary Biology (in progress)	
University of Oklahoma Norman, OK	2016 – 2020
B.A. in Biology, B.S. in Mathematics, minor in Music, Summa Cum Laude	

FELLOWSHIPS & AWARDS

National Science Foundation Graduate Research Fellowship Program	2022 – Present
Washington University Center for Teaching and Learning Educational Development Graduate Fellowship	2025
ASN Outstanding Student Poster Award	
Morris B. Rettner Scholarship	
Carl & Pat Bynum Riggs Scholarship	2018
National Merit Scholar	2016
Illinois State Scholar	

RESEARCH EXPERIENCE

Ph.D. Candidate Dr. Michael Landis at Washington University	2021 – Present
<ul style="list-style-type: none">• Biogeography & phylogenetic comparative methods• R package & Docker image development• Biogeography of <i>Liolaemus</i> lizards, Hawaiian plants	
Rotation Student Dr. Jonathan Losos at Washington University	2020 – 2021
<ul style="list-style-type: none">• Global distribution of arboreal lizards• Herpetology field experience	
Research Student & Technician Dr. Katharine Marske at University of Oklahoma	2019 – 2020
<ul style="list-style-type: none">• Lab work including beetle DNA extraction, PCR, and gel electrophoresis• Data analysis in Geneious, QGIS, BEAST, R	
Research Apprentice University of Oklahoma Biological Station	2018 – 2018
<ul style="list-style-type: none">• Ant behavioral studies• Ant heat tolerance testing	

- Herpetology field experience
- Specimen preparation and maintenance
- Tissue sampling
- Lab work including DNA extraction and qPCR

PUBLICATIONS

Swiston, S. K., & Landis, M. J. (2025). Testing relationships between multiple regional features and biogeographic processes of speciation, extinction, and dispersal. *Systematic Biology*, 74(2), 282–300.

IN PREP

Swiston, S. K., Kuehne, L., Moore, R., & Landis, M. J. (2025). Assessing the efficacy of computational workshops and participatory live coding in evolutionary biology.

Swiston, S. K., McHugh, S., & Landis, M. J. (2025). EMPIRE: The ellipse model for phylogenetic inference of range evolution.

Lichter-Marck, I., **Swiston, S. K.**, Mendes, F. K., May, M., Neupane, S., Rønsted, N., Baldwin, B., Wagner, W., Wood, K., Zapata, F., Landis, M. J. (2025). Earth and life evolve together: Tracking the insular radiation of *Kadua* (Rubiaceae) across the Hawaiian conveyor belt.

PRESENTATIONS

CIRTL General Meeting

2025

IGNITE: The Interdisciplinary Graduate Network for Inquiry, Teaching, & Engagement
Co-Presenters: Nicole Strombom

Evolution Conference

EMPIRE: The ellipse model for phylogenetic inference of range evolution

Midwest Ecology and Evolution Conference

Modeling range evolution using ellipses in continuous space

The CIRTL Network Teaching-as-Research Presentations

Assessing the efficacy of computational workshops and participatory live coding in evolutionary biology

Graduate Research Symposium (Washington University)

Assessing the efficacy of computational workshops and participatory live coding in evolutionary biology

Ecology and Evolution Seminar (Washington University)

2024

Designing and disseminating phylogenetic models of historical biogeography

Evolution Conference

A model of range evolution using ellipses in continuous space

Society for the Study of Amphibians and Reptiles Conference

Testing relationships between regional features and biogeographic processes of speciation, extinction, and dispersal in *Liolaemus* lizards

Evolution Conference

2023

Testing relationships between multiple regional features and biogeographic process of speciation, extinction, and dispersal

Living Earth Collaborative Seminar (Washington University)

How the environment shapes diversification and dispersal: A feature-informed phylogenetic method of historical biogeography (+ Lizards!)

International Biogeography Society Conference

Inferring evolutionary rates in a geographic context: Incorporating region features

2022

Midwest Ecology and Evolution Conference

A phylogenetic model of historical biogeography incorporating regional features

Evolution Conference

Why are arboreal lizards a tropical phenomenon?

2021

POSTERS

Evolution Conference

EMPIRE: The ellipse model for phylogenetic inference of range evolution

2025

Graduate Research Symposium (Washington University)

Education in phylogenetic modeling: The pedagogy of tutorials, software, and workshops

Society for the Advancement of Biology Education Research Midwest Conference

Education in phylogenetic modeling: the pedagogy of tutorials, software, and workshops

2024

Evolution Conference

Education in phylogenetic modeling: The pedagogy of tutorials, software, and workshops

University of Oklahoma Undergraduate Research Day

Amphibious infectious disease in Oklahoma: A citizen science project

2017

THESES

Honors Thesis | University of Oklahoma

Phylogeography of New Zealand weevil *Geochus tibialis* (Curculionidae)

2019

PRESS

News Article | Neighbors of Glen Ellyn

A Science Grad Student's Journey

2024

TEACHING

Planned Spring 2026

2026

Instructor of Record | Mathematical Modeling in Ecology & Evolution

Co-Instructors: Dr. Abigail Jager

Workshop Instructor | Phylogenetic Biogeography Workshop

2024 – 2025

Co-Instructors: Michael Landis, Felipe Zapata, Isaac Lichter-Marck, Fábio Mendes, Michael May, Ixchel González Ramírez

Locations: Evolution Conference (2025), Washington University (2024)

Guest Lecture | Webster University

The Mathematics of Plant Structures

Peer Tutor Population Genetics	
Assistant Instructor Graduate Research Fundamentals	2023 – 2025
Participant Skype a Scientist	2023 – Present
Workshop Facilitator Data Analysis and Visualization in R for Ecologists	2023
Workshop Instructor: Kaija Gahm, through Carpentries	
Assistant Instructor Evolution	2022
Course Instructor: Dr. Ken Olsen	
Assistant Instructor Population Genetics	2021
Course Instructor: Dr. David Queller	
Teaching Team Member Young Scientist Program	2020 – Present

MENTORSHIP

Research Mentor Washington University	2025
Mentee: Matthew Pottinger, Washington University in Saint Louis (Undergraduate)	
Copy Editor & Reviewer Journal of Emerging Investigators	2022 – Present
Research Mentor Young Scientist Program Summer Focus Program	2022
Mentee: Benjamin Gondzur, Metro Academic and Classical High School (Senior)	
Teaching Team Member Young Scientist Program	2020 – Present

TEACHING PROFESSIONAL DEVELOPMENT

Educational Development Graduate Fellowship Center for Teaching and Learning	2025
Member IGNITE Learning Community	2024 – Present
(Interdisciplinary Graduate Network for Inquiry, Teaching, and Engagement)	
Member Washington University Education Research Group	2024 – Present
Teaching Citation Washington University	2023
Professional Development in Teaching Program	
Member Center for Teaching and Learning Graduate Student Advisory Council	2022 – 2024
Member EPIC Learning Community	2020 – 2021
(Exploring Practices in the Classroom)	
Member Washington University in Saint Louis Future Educators	2020
Competent in the following tools: Canvas, Zoom, Microsoft Office, Google Workspace	

WORKSHOPS ATTENDED

Using Game-Inspired Design to Spark Engagement and Deep Learning	2025
Washington University	
Instructor: Dr. Tori Mondelli, University of Missouri	
Sparkling Joy in Biology Education SABER 2025 Conference	
Scholarship of Teaching and Learning Seminar	2024
Washington University Center for Teaching and Learning	
Introduction to CODON Learning SABER Midwest 2024 Conference	

Data Management | Washington University Libraries Data Services
Responsible data management, storage, security, and availability

2023

The Inclusive STEM Teaching Project

Evolutionary Quantitative Genetics | Dr. Stevan J. Arnold & Dr. Joe Felsenstein
Lecturers: Dr. Patrick Carter, Dr. Adam Jones, Dr. Brian O'Meara, Dr. Samantha Price,
Dr. Josef Uyeda

2022

Short Teaching Workshops | Washington University Center for Teaching and Learning
Applying Cognitive Science (2021), Engaging in Equity Pedagogy (2021), Introduction to Pedagogical
Scholarship (2021), Developing Effective Summative Assessments (2022), Planning and Organizing a Class
Session (2023), Process Oriented Guided Inquiry Learning – POGIL (2024)

PROGRAMMING

PhyloDocker | Docker Image: hub.docker.com/r/sswiston/phylo_docker

2022 – Present

Competent in the following tools: R, R Devtools, R Shiny, RevBayes, Python, Java, Docker, QGIS, Unix

GRADUATE COURSEWORK

Population Genetics, Genomics, Community Ecology, Stochastic Processes, Data Structures & Algorithms,
Genomics, Ethics and Research Science

SOCIETY MEMBERSHIPS

American Society of Naturalists (ASN)

National Association of Biology Teachers (NABT)

Partners in Amphibian and Reptile Conservation (PARC)

Professional and Organizational Development Network in Higher Education (POD)

Society for the Advancement of Biology Education Research (SABER)

Society for the Study of Amphibians and Reptiles (SSAR)

Society of Systematic Biologists (SSB)

Society for the Study of Evolution (SSE)

REVIEWED FOR

Evolution

Journal of Emerging Investigators

Methods in Ecology & Evolution

Molecular Phylogenetics & Evolution

Proceedings of the Royal Society B

Systematic Biology

REFERENCES

Dr. Michael Landis
Assistant Professor, Department of Biology
Washington University in Saint Louis
CB 1137
One Brookings Drive
St. Louis, MO 63130
michael.landis@wustl.edu
314-935-8082
Relationship: Ph.D. Advisor

Dr. Felipe Zapata
Associate Professor, Department of Ecology and Evolutionary Biology
University of California Los Angeles
612 Charles E. Young Drive South
Botany Building
Los Angeles, CA 90095
fzapata@ucla.edu
Relationship: Collaborator

Dr. Lisa Kuehne
Assistant Director of Graduate and Postdoc Programs
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Relationship: Teaching Center Fellowship Supervisor