

Sarah K. Swiston

Washington University — Saint Louis, Missouri

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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

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| Washington University Saint Louis, MO Ph.D. Candidate in Ecology & Evolutionary Biology (in progress) | 09 2020 – Present |
| University of Oklahoma Norman, OK B.A. in Biology, B.S. in Mathematics, minor in Music, Summa Cum Laude | 08 2016 – 05 2020 |

FELLOWSHIPS & AWARDS

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| National Science Foundation Graduate Research Fellowship Program | 2022 – Present |
| Morris B. Rettner Scholarship | 2025 |
| Carl & Pat Bynum Riggs Scholarship | 2018 |
| National Merit Scholar | 2016 |
| Illinois State Scholar | 2016 |

RESEARCH EXPERIENCE

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| Ph.D. Candidate Dr. Michael Landis at Washington University <ul style="list-style-type: none">• Biogeography & phylogenetic comparative methods• R package & Docker image development• Biogeography of <i>Liolaemus</i> lizards, Hawaiian plants | 09 2021 – Present |
| Rotation Student Dr. Jonathan Losos at Washington University <ul style="list-style-type: none">• Global distribution of arboreal lizards• Herpetology field experience | 09 2020 – 01 2021 |
| Research Student & Technician Dr. Katharine Marske at University of Oklahoma <ul style="list-style-type: none">• Lab work including beetle DNA extraction, PCR, and gel electrophoresis• Data analysis in Geneious, QGIS, BEAST, R | 01 2019 – 04 2020 |
| Research Apprentice University of Oklahoma Biological Station <ul style="list-style-type: none">• Ant behavioral studies• Ant heat tolerance testing | 06 2018 – 07 2018 |
| Lab Volunteer Sam Noble Oklahoma Museum of Natural History: Herpetology <ul style="list-style-type: none">• Herpetology field experience• Specimen preparation and maintenance• Tissue sampling• Lab work including DNA extraction and qPCR | 01 2017 – 12 2018 |

PUBLICATIONS

Swiston, S. K., & Landis, M. J. (2024). Testing relationships between multiple regional features and biogeographic processes of speciation, extinction, and dispersal. *Systematic Biology*.
<https://doi.org/10.1093/sysbio/syae062>

PRESENTATIONS

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| Ecology and Evolution Seminar (Washington University) Designing and disseminating phylogenetic models of historical biogeography | 10 2024 |
| Evolution Conference A model of range evolution using ellipses in continuous space | 07 2024 |
| Society for the Study of Amphibians and Reptiles Conference Testing relationships between regional features and biogeographic processes of speciation, extinction, and dispersal in <i>Liolaemus</i> lizards | 06 2024 |
| Evolution Conference Testing relationships between multiple regional features and biogeographic process of speciation, extinction, and dispersal | 06 2023 |
| Living Earth Collaborative Seminar (Washington University) How the environment shapes diversification and dispersal: A feature-informed phylogenetic method of historical biogeography (+ Lizards!) | 03 2023 |
| International Biogeography Society Conference Inferring evolutionary rates in a geographic context: Incorporating region features | 06 2022 |
| Midwest Ecology and Evolution Conference A phylogenetic model of historical biogeography incorporating regional features | 03 2022 |
| Evolution Conference Why are arboreal lizards a tropical phenomenon? | 06 2021 |

POSTERS

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| Society for the Advancement of Biology Education Research Midwest Conference Education in phylogenetic modeling: the pedagogy of tutorials, software, and workshops | 09 2024 |
| Evolution Conference Education in phylogenetic modeling: The pedagogy of tutorials, software, and workshops | 07 2024 |
| University of Oklahoma Undergraduate Research Day Amphibious infectious disease in Oklahoma: A citizen science project | 05 2017 |

MANUSCRIPTS & THESES

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| Manuscript Washington University in Saint Louis Climatic constraints and the latitudinal diversity gradient: Why are arboreal lizards a tropical phenomenon? | 03 2021 |
| Honors Thesis University of Oklahoma Phylogeography of New Zealand weevil <i>Geochus tibialis</i> (Curculionidae) | 12 2019 |

PRESS

News Article | Neighbors of Glen Ellyn
A Science Grad Student's Journey 06 2024

TEACHING

Guest Lecture | Webster University 10 2024
The Mathematics of Plant Structures

Assistant Instructor | Graduate Research Fundamentals Fall 2023, 2024

Workshop Instructor | Phylogenetic Biogeography Workshop 06 2024
Co-Instructors: Isaac Lichter-Marck, Fábio Mendes, Michael Landis, Felipe Zapata

Peer Tutor | Population Genetics Spring 2024

Workshop Facilitator | Data Analysis and Visualization in R for Ecologists 10 2023
Workshop Instructor: Kaija Gahm, through Carpentries

Teaching Citation | Washington University 05 2023
Professional Development in Teaching Program

Member | Center for Teaching and Learning Graduate Student Advisory Council 09 2022 – 05 2024

Assistant Instructor | Evolution Fall 2022
Course Instructor: Dr. Ken Olsen

Research Mentor | Young Scientist Program Summer Focus Program Summer 2022
Mentee: Benjamin Gondzur, Metro Academic and Classical High School (Senior)

Assistant Instructor | Population Genetics Fall 2021
Course Instructor: Dr. David Queller

Member | EPIC Learning Community 09 2020 – 04 2021
(Exploring Practices in the Classroom)

Member | Washington University in Saint Louis Future Educators 2020

Member | IGNITE Learning Community 09 2024 – Present
(Interdisciplinary Graduate Network for Inquiry, Teaching, and Engagement)

Member | Washington University Education Research Group 02 2024 – Present

Participant | Skype a Scientist 11 2023 – Present

Copy Editor & Reviewer | Journal of Emerging Investigators 02 2022 – Present

Teaching Team Member | Young Scientist Program 09 2020 – Present

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

WORKSHOPS ATTENDED

Scholarship of Teaching and Learning Seminar | Washington University Center for Teaching and Learning Spring 2024

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| Data Management Washington University Libraries Data Services Responsible data management, storage, security, and availability | 10 2023 |
| The Inclusive STEM Teaching Project | 04 2023 |
| 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 | 07 2022 |

Short Teaching Workshops | Washington University Center for Teaching and Learning
Applying Cognitive Science (09 2021), Engaging in Equity Pedagogy (11 2021), Introduction to Pedagogical Scholarship (12 2021), Developing Effective Summative Assessments (02 2022), Planning and Organizing a Class Session (09 2023)

GRADUATE COURSEWORK

Population Genetics, Genomics, Community Ecology, Stochastic Processes, Data Structures & Algorithms

SOCIETY MEMBERSHIPS

American Society of Naturalists (ASN)
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

Proceedings of the Royal Society B, Molecular Phylogenetics & Evolution, Methods in Ecology & Evolution, Evolution