Curriculum Vitae

Keaka Farleigh

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WEBSITES AND SOCIAL MEDIA

Coding Repository: https://github.com/kfarleigh
Research profiles: Google Scholar
ResearchGate
Website: https://kfarleigh.github.io

EDUCATION

August 2024 **Ph.D Ecology, Evolution, and Environmental Biology**. Miami University
Advisor: Tereza Jezkova

May 2018 **B.A. Biology.** Capital University
Advisor: Christine Anderson

PUBLICATIONS

5. Koochekian, N., Ascanio, A., **Farleigh, K.**, Card, D. C., Schield, D. R., Castoe, T. A., & Jezkova, T. (2022). A chromosome-level genome assembly and annotation of the desert horned lizard, Phrynosoma platyrhinos, provides insight into chromosomal rearrangements among reptiles. *GigaScience*, *11*.

4. Finger, N., **Farleigh, K.**, Bracken, J. T., Leaché, A. D., François, O., Yang, Z., ... & Blair, C. (2022). Genome-Scale Data Reveal Deep Lineage Divergence and a Complex Demographic History in the Texas Horned Lizard (*Phrynosoma cornutum*) throughout the Southwestern and Central United States. *Genome biology and evolution*, 14(1), evab260.

3. **Farleigh, K.**, Vladimirova, S. A., Blair, C., Bracken, J. T., Koochekian, N., Schield, D. R., ... & Jezkova, T. (2021). The effects of climate and demographic history in shaping genomic variation across populations of the Desert Horned Lizard (*Phrynosoma platyrhinos*). *Molecular Ecology*, 30(18), 4481-4496.

2. Santibáñez-López, C. E., **Farleigh, K.**, Cushing, P. E., & Graham, M. R. (2021). Restriction enzyme optimization for RADseq with camel spiders (Arachnida: *Solifugae*). *The Journal of Arachnology*, 48(3), 346-350.

1. **Farleigh, K.** (2018). Genetic estimates of migration for white-footed mice (*Peromyscus leucopus)* at the Primmer Outdoor Learning Center. *2018 NCUR Proceedings*.

Manuscripts in Review

Farleigh, K. & T. Jezkova. Genetic signals of local adaptation in a desert rodent that occupies diverse climates and habitats. *In Review at Global Change Biology*.

Farleigh, K., Ascanio, A., Farleigh, M.E., Schield, D.R., Card, D.C., Leal, M., Castoe, T.A., Jezkova, T., Rodriguez-Robles, J.A. Signals of differential introgression in the genome of natural hybrids of Caribbean anoles. *In Review at Molecular Ecology*.

Orton, R.W., **K. Farleigh**, Z.L. Nikolakis, K.N. Ivey, D.R. Schield, B.W. Perry, J. Parker, J.M. Meik., S.P. Mackessy, T. Jezkova, and T.A. Castoe. Environmental heterogeneity and historical climate shifts explain genetic structure in the wide-ranging rattlesnake Crotalus viridis. *In Review at J. Biogeography*.

PRESENTATIONS

2022 Koochekian, N., Ascanio, A., **Farleigh, K.**, Card, D.C., Schield, D.R., Castoe, T.A., Jezkova, T. A chromosome-level genome assembly and annotation of the desert horned lizard, *Phrynosoma platyrhinos*, provides insight into chromosomal rearrangements among reptiles. Evolution 2022. Oral Presentation.

2022 **Farleigh, K.,** & Jezkova, T. Genetic signals of local adaptation in a desert rodent that occupies diverse climates and habitats. Evolution 2022. Oral Presentation. Virtual.

2022 **Farleigh, K.,** & Jezkova, T. Exploring signatures of differential selection and local adaptation across climate and habitat in the chisel-toothed kangaroo rat (*Dipodomys microps*). International Biogeography Society Meeting. Oral Presentation. Virtual.

2021 Koochekian, N., Ascanio, A., **Farleigh, K.**, Card, D.C., Schield, D.R., Castoe, T.A., Jezkova, T. The genome of *Phrynosoma platyrhinos.* Virtual Evolution 2021. Oral Presentation. Virtual.

2021 **Farleigh, K.,** & Jezkova, T. Identifying genomic adaptations in *Dipodomys microps*. American Society of Mammalogists 100th Annual Meeting. Oral Presentation. Virtual.

2021 **Farleigh, K.** Identifying genomic adaptations in *Dipodomys microps*. Miami University Ecolunch. Oral Presentation. Virtual.

2020 Jezkova, T., & **Farleigh, K.** Detecting genomic signals of population adaptation. City University of New York Bioinformatics Bootcamp for Ecology and Evolution. Oral Presentation. Virtual.

2019 Blair, C., Finger, N., Jezkova, T., François, O., Williams, D., Leachè, A.D., Charran, T., **Farleigh**, **K.,** Bracken, J.T. Genomic data reveal deep lineage divergence and molecular adaptation in the Texas horned lizard (*Phrynosoma cornutum*), Poster Presentation. Annual Evolution Meeting. Providence, RI,

2019 **Farleigh, K.,** & T. Jezkova. Identifying genomic adaptations to diverse environments in the Chiseled-Toothed Kangaroo Rat (*Dipodomy microps*). Oral presentation. American Society of Mammalogists 99th Annual Meeting. Washington D.C.

2018 **Farleigh, K.,** Ignoffo, T., & W.J. Kimmerer. Variability in development rate within and between clutches from individual females copepods (*Pseudodiaptomus forbesi*). Oral Presentation. Capital University Symposium for Undergraduate Research. Columbus, OH.

2018 **Farleigh, K.,** & C.S. Anderson. Population Genetics and Migration of *Peromyscus leucopus,* a Lyme disease reservoir species. Poster Presentation. Capital University Symposium for Undergraduate Research. Columbus, OH.

2018 **Farleigh, K.,** & C.S. Anderson. Population Genetics and Migration of *Peromyscus leucopus,* a Lyme disease reservoir species. Poster Presentation. Ohio Academy of Science (OAS) 127th Annual Meeting. Bowling Green, OH.

2018 **Farleigh, K.,** & C.S. Anderson. Conservation genetics and migration of Lyme disease reservoir species. Poster Presentation. National Conference on Undergraduate Research. Edmond, OK.

2018 **Farleigh, K.,** & C.S. Anderson. Bioinformatics in Conservation of Lyme disease reservoir species *Peromyscus leucopus*. Poster Presentation. Ohio Fish and Wildlife Management Association Conference. Columbus, OH.

2017 **Farleigh, K.,** Ignoffo, T., & W.J. Kimmerer. Variability in development rate within and between clutches from individual females copepods (*Pseudodiaptomus forbesi*). Poster Presentation. Coastal and Estuarine Research Foundation Biennial Convention. Providence, RI.

2017 **Farleigh, K.,** Ignoffo, T., & W.J. Kimmerer. Variability in development rate within and between clutches from individual females copepods (*Pseudodiaptomus forbesi*). Oral Presentation. Romberg Tiburon Research Symposium. San Francisco, CA.

2017 **Farleigh, K.,** Ignoffo, T., & W.J. Kimmerer. Variability in development rate within and between clutches from individual females copepods (*Pseudodiaptomus forbesi*). Oral Presentation. Summer Research Symposium at San Francisco State University. San Francisco, CA.

2017 **Farleigh, K.,** & C.S. Anderson. Genetic estimates of migration of white-footed mice (*Peromyscus leucopus*) between two habitats at Primmer Outdoor Learning Center. Poster Presentation. Capital University Symposium for Undergraduate Research. Columbus, OH.

2017 **Farleigh, K.,** Mcknight, M., Rios, B., & K. Cheesman. Nitrate Consumption of *Chlorella vulgaris* and *Ulothrix*. Poster Presentation. Capital University Symposium for Undergraduate Research. Columbus, OH.

GRANTS AND AWARDS

2022 Thesis and Dissertation Research Support – Miami University: *Identifying genomic adaptations of Ambystoma salamanders using whole exome sequencing* (**$600**)
2020 Theodore Roosevelt Memorial Grant Program – American Museum of Natural History: *Identifying genomic adaptations to diverse climates and habitats in Dipodomys microps* (**$2,000**).
2020 NSF Graduate Research Fellowship Program: *Identifying genomic adaptations to diverse climates and habitats in Dipodomys microps populations* (**$134,000**).
2018 Diversity Enhancement Pathway (DEP) Graduate Assistantship
2018 Graduate School Scholar Assistantship
2018 Magna Cum Laude
2017 Boyd Fund Memorial Grant – Capital University: *Bioinformatics in Conservation of Lyme disease reservoir species Peromyscus leucopus* (**$1,000**).
2017 Beta Beta Beta Research Grant: *Bioinformatics in Conservation of reservoir species Peromyscus leucopus* (**$500**).
2017 NSF REU Travel Grant: *Variability in development rate within and between clutches from individual female copepods (Pseudodiaptomas forbesi)* (**$1,000**).
2017 President's List, Capital University
2014-2017 Capital Grant Award
2014-2017 Presidential Scholarship
2014-2017 Discover Cap Grant
2014-2017 Rev. Rufus Tarrant Grant
2014-2017 HWCIA Scholarship
2014-2016 Dean's List, Capital University

SOFTWARE AND DATA REPOSITORIES

HybridFindR (https://github.com/kfarleigh/HybridFindR):
An R package to detect signals of differential introgression in hybrid individuals.

Bioinformatics Bootcamp 2020 (https://github.com/kfarleigh/BioinformaticsBootcamp_2020):

A tutorial to perform genome-environment association analysis using data published in Farleigh et al., (2021; see publication #3). This tutorial was presented at the City University of New York Bioinformatics Bootcamp in the Summer of 2020.

Moments (https://github.com/kfarleigh/Moments):

Python scripts and demographic models used to model the demographic history of 3 and 4 populations. Models were originally published in Farleigh et al., (2021; see publication #3).

STUDENT ADVISING AND TRAINING

As a Ph.D. student in the laboratory of Dr. Jezkova at Miami University, I have assisted Dr. Jezkova in mentoring eight undergraduate researchers and one high school researcher. I have trained students in molecular laboratory techniques, including parts of next-generation library construction, and have trained students in bioinformatic techniques as well as the use of Geographic Information Systems (GIS) programs.

TEACHING EXPERIENCE

Assistant Instructor Summer 2019, 2021

Computer Science in Modern Biology – Miami University**,** Oxford, OH
Assistant instructor for introduction to R and data visualization classes.

Instructor Summer 2020

Bioinformatics Boot Camp for Ecology and Evolution – The City University of New York, New York, NY
Instructor for a tutorial demonstrating how to use genetic and environmental data to perform genome-environment association analyses.

Graduate Teaching Assistant Fall 2018

Miami University, Oxford, OH
Laboratory instructor for semester long course **Biological Concepts: Ecology, Evolution, Genetics, and Diversity** (BIO 115).

PROFESSIONAL SOCIETIES

Member	Beta Beta Beta, National Biological Honor Society
Member	Society for the Study of Evolution

SERVICES

2017-2018	Treasurer, Beta Beta Beta, Capital University
2018	Participant, Student Leadership Conference, Capital University
2017	Presenter, Science Visit Day, Capital University
2017	Judge, Horizon Science Academy Science Fair
2017	Panelist, Capital University Student Science Opportunities Panel

2017	Student Coordinator, Capital University Primmer Property Cleanup and BBQ
2017	Beta Beta Beta National Biological Honor Society, Capital University
2017	Volunteer, Relay for Life, Capital University

SKILLS

Programs

R: High proficiency;
- Ability to implement standard and advanced statistical processes
- Data Cleaning, Mining, and Modeling
- GIS Mapping
- Basic Function Writing
- Data Visualization

Python: Working proficiency;
- Ability to implement standard statistical processes
- Data Visualization

ArcGIS: High proficiency;
- Spatial Analysis – proficient

Microsoft: High proficiency;
- PowerPoint
- Word
- Excel

Languages

Spanish – Beginner