



Megan Barkdull

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EDUCATION

Cornell University

Ph.D. Student

Advisor: Dr. Corrie Moreau

expected 2025

New College of Florida

Bachelor of Arts in Biology

Honors Thesis Topic: *Population Genetics of the Threatened Florida Duskywing Skipper*

2018

RESEARCH EXPERIENCE

Post-baccalaureate Intern

Cornell University, Zamudio Lab

Sept. 2018 – Aug. 2019

- Conducted conservation genetics research on a number of reptile and amphibian species.
- Responsible for assisting all lab members with wet lab work (DNA extractions, microsatellite sequencing, Sanger sequencing, MiSeq).
- Collaborated on a project to describe the genetic mating system of the Brazilian frog *Cycloramphus boraceiensis* (data in prep for publication).

Hawkmoth Sensory Behavior Volunteer

Cornell University, Raguso Lab

Sept. 2018 – Dec. 2018

- Participated in weekly hawkmoth colony care tasks (feeding, plant care, pupae counts etc.).
- Ran experiments testing the role of floral humidity in hawkmoth feeding choice.

Birdsong Evolution, Research Assistant

Cornell University Lab of Ornithology, Drs. Araya-Salas and Odom

May 2018 – May 2019

- Assisted in coding birdsong spectrograms for downstream data analysis.
- Created analysis protocol and generate graphics for future researchers on the project.

Florida Duskywing Genetics Project, Research Assistant

New College of Florida, Saarinen Lab

Aug. 2017 - May 2018

- Carried out a population genetics analysis of the threatened Florida Duskywing skipper butterfly to inform conservation policy.
- Performed next-generation sequencing in order to develop novel microsatellite markers

NSF Research Experiences for Undergraduates Intern

American Museum of Natural History, Siddall Lab

May 2017 - Aug. 2017

- Used genetic techniques (Sanger sequencing etc.) to identify the hosts of terrestrial bloodfeeding leeches.
- Presented results at 2017 AMNH REU Symposium; manuscript published in PLoS One.
- Conducted fieldwork to collect invertebrate (leeches, crayfish) for related lab projects.

Dakota Skipper Wolbachia Status, Research Assistant

Jan. 2017 - May 2017

New College of Florida, Saarinen Lab

- Conducted DNA extractions and PCR amplifications of Wolbachia pathogen genes from the endangered Dakota Skipper butterfly to identify pathogen strains.
- Performed significant PCR troubleshooting of genes which repeatedly failed to amplify.
- Prepared a poster on the findings of the project; presented at a meeting of at the Imperiled Butterfly Working Group.

TEACHING EXPERIENCE

Introduction to Evolution and Diversity Teaching Assistant

Jan. 2020 - May 2020

Cornell University

- Taught three weekly discussion/lab sections.
- Assisted with course transition to an online format due to COVID-19.

Comparative Physiology Teaching Assistant

Aug. 2019 - Dec. 2019

Cornell University

- Taught three weekly discussion/lab sections, leading hands-on investigations of physiological concepts covered in lectures.
- Created extensive, novel course review materials; available on my GitHub.

Foundations of Biology Teaching Assistant

Aug. 2017 - Dec. 2017

New College of Florida

- Led review sessions prior to tests and quizzes.
- Graded tests and quizzes.
- Met individually with students to address performance questions.

Cellular Biology Teaching Assistant

Aug. 2016 - Dec. 2016

New College of Florida

- Led content-delivery and problem-solving review sessions once per week.
- Assisted in exam grading and clerical tasks.

PUBLICATIONS

Siddall, M. E., **Barkdull, M.**, Tessler, M., Brugler, M. R., Borda, E., & Hekkala, E. (2019). Ideating iDNA: Lessons and limitations from leeches in legacy collections. *PloS one*, 14(2), e0212226.

In review:

Williams, K., Fahmy, M., **Barkdull, M.**, Kvist, S., Hekkala, E., Siddall, M.E. (2020). Caught red handed: iDNA reveals wild source of CITES contraband medicinal leeches". In review at the European Journal of Wildlife Research.

PRESENTATIONS

Lightning talks:

Barkdull, M. and Moreau, C. (2020). Formicidae caste determination: single cell and functional genomic techniques. Social Insects in the Northeast Region meeting, Brooklyn, NY.

*postponed to Spring 2020 due to COVID-19.

Posters:

Markee, A.N., Saarinen, E. V., **Barkdull, M.** (2019). Conservation genetics of the Florida duskywing skipper (*Ephyriades brunnea*): a multi-population assessment of a rare South Florida butterfly. Entomological Society of America meeting, St. Louis, MO.

Ash, M., **Barkdull, M.**, Elmir, G. (2017). Are endangered Dakota Skipper populations infected with *Wolbachia*? Imperiled Butterflies Working Group meeting, Miami, FL.

AWARDS

Book Award for Best First-Year Symposium Presentation

Dec. 2019

SERVICE

EvoDay Planning Committee

Spring 2020

- Identify and invite speakers for a day-long symposium on the theme of "Evolution in Deep Time".

*postponed to Spring 2020 due to COVID-19.

Cornell Ecology & Evolutionary Biology Seminar Series Committee

Aug. 2019- present

- This committee plans and coordinates the department's weekly seminar series.
- Responsible for soliciting speaker nominations, constructing schedule of speakers, and assisting host labs with managing their speaker visits.

OUTREACH

Cornell Insectapalooza

Oct. 2019

- Manned a table on ant diversity and discussed all things ant with members of the public, including young children, teens and adults.

