



Megan Barkdull

PH.D STUDENT

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Education

Ph.D Student

ADVISOR: DR. CORRIE MOREAU

Bachelor of Arts in Biology

ADVISOR: DR. EMILY SAARINEN

- Honor Thesis Topic: Population Genetics of the Threatened Florida Duskywing Skipper

Cornell University

August 2019–May 2025

New College of Florida

August 2014–May 2018

Research

Post-baccalaureate Intern

ZAMUDIO LAB

- 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).

Cornell University

September 2018–August 2019

Hawkmoth Sensory Behavior Volunteer

RAGUSO LAB

- 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.

Cornell University

September 2018–December 2018

Birdsong Evolution, Research Assistant

DRS. ARAYA-SALAS AND ODOM

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

Cornell Lab of Ornithology

May 2018–May 2019

Florida Duskywing Genetics Project, Research Assistant

SAARINEN LAB

- 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
- Results in prep for publication.

New College of Florida

August 2017–May 2018

NSF Research Experiences for Undergraduates Intern

SIDDALL LAB

- 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.

American Museum of Natural History

May 2017–August 2017

Dakota Skipper Wolbachia Status, Research Assistant

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.

New College of Florida

January 2017–May 2017

Teaching

Introduction to Evolution and Diversity Teaching Assistant

BIOEE1780

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

Cornell University

January 2020–May 2020

Comparative Physiology Teaching Assistant

BIOG1440

- 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.

Cornell University

August 2019–December 2020

Foundations of Biology Teaching Assistant

BIOL2100

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

New College of Florida

August 2017–December 2017

Cellular Biology Teaching Assistant

BIOL3500

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

New College of Florida

August 2016–December 2016

Publications

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

In review:

- 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.

Talks

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.

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

December 2019–NA

Service

Graduate Student Association Co-President

DEPT. OF ECOLOGY & EVOLUTIONARY BIOLOGY

Cornell University

July 2020–August 2022

EvoDay Planning Committee

* POSTPONED TO SPRING 2021 DUE TO COVID19

Cornell University

Spring 2020–NA

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

Department Seminar Series Committee

DEPT. OF ECOLOGY & EVOLUTIONARY BIOLOGY

Cornell University

August 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.
- While on this committee, I initiated a push to increase the diversity of our invited speakers, based on the best practices identified by Hagan et al. (2020).

Outreach

Cornell Insectapalooza

DEPT. OF ENTOMOLOGY

Cornell University

October 2019–NA

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

