



# Megan Barkdull

PH.D STUDENT

Department of Ecology and Evolutionary Biology, Cornell University

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## Education

### Ph.D Student, Department of Ecology and Evolutionary Biology

ADVISOR: DR. CORRIE MOREAU

### Bachelor of Arts in Biology

ADVISOR: DR. EMILY SAARINEN

- Honors 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.
- 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

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### Published:

- 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 press:

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

## Talks

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### 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 due to COVID19.

### 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

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### Book Award for Best First-Year Symposium Presentation

*December 2019–NA*

## Service

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### 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

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### 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.

