

Matthew McDonald

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Undergraduate Biology Student

EDUCATION

College of Charleston, Charleston — *B.S Biology*

GPA: 3.94/4.00

Expected Graduation: 2026

EXPERIENCE

REU Research, California Academy of Sciences — *Internship*

June 2024- July 2024

• 7 week full time paid internship at the California Academy of Sciences Summer Systematics Institute investigating the phylogeography of the Baja Coachwhip Snake using low coverage whole genome sequencing of mitochondrial DNA. Responsibilities include:

- Creating programs within the Bash shell programming language to sequence mitochondrial DNA using Low Coverage Whole Genome Sequencing for over 70 whole mitochondrial genomes
- Producing phylogenies using IQtree and GENEious programs
- Writing manuscripts, and presenting results at the 2024 Summer Systematics Research symposium.

Independent Undergraduate Research, Charleston — *Undergraduate Researcher*

August 2022- Present

- Funded research to assess the impact of pine savannah management regimes on the population ecology of arthropods and squamates in seasonal wetlands. Responsibilities include:
 - Field work such as trapping insects and monitoring pitfall traps
 - Identifying arthropods to the order level, and recording abundance and biomass data
 - Generating protocols, manuscripts, and other research documentation
 - Disseminating results to the peers and public

Awards

2023 SSME Grant (6,000)

2023-present SC LIFE Scholarship and STEM Enhancement (7,500)

SC HOPE Scholarship (2,800)

2024 CIE Travel Abroad Scholarship (2,000)

2024 Maggie T. Pennington Scholarship (3,000)

2024 SACNAS Travel Scholarship

Tri-Beta Honors Society Member

Relevant Courses

Independent Biological Research
Herpetology
General Ecology
Biodiversity and Conservation Biology

SCDNR, Charleston — *Wildlife Technician*

June 2021- August 20, 2022

• Preparing and assisting in installing recycled oyster reefs and Spartina Grass as a means of shoreline restoration, erosion mitigation, and providing of habitat. Responsibilities include:

- Installing oyster reefs and salt marsh grass restoration
- Surveying reef biodiversity through gill and seine netting
- Collecting geospatial data through Trimble GIS
- Growing and planting of Spartina marsh grass
- Educating students and the public on coastal natural resources
- Towing and operation of medium-sized boats in coastal SC waters

Turtle Survival Alliance , South Carolina/ Florida — *Volunteer*

2020 - 2022

• Volunteer in the two-day population survey of Weeki Wachee Springs State Park in Florida. Species surveyed included species in the Pseudemys and Trachemys Genera. Responsibilities include:

- hand capture of turtles by snorkeling
- weighing, measuring, marking, and assisting in PIT tagging
- Assisting in 2019-2022 population surveys on Kiawah Island SC for Diamondback Terrapins. Surveying responsibilities include:
 - visual surveying and seine netting of intertidal creeks in and around the Kiawah River

Various Organizations, South Carolina — *Volunteer*

2020- Present

- Radio Telemetry tracking of Eastern Diamondback Rattlesnakes and Northern Pine Snakes
- Installation and monitoring of animal drift fences
- Assisting in prescribed burns of Longleaf Pine Savannah
- Assisting in habitat enhancement for Black Rails in wetlands
- Population Survey of Eastern Bluebirds as part of the Survival By Degrees program

Conferences and Presentations

2023 Poster presenter, Undergraduate Research Symposium, College of Charleston

2024 Poster Presenter, Undergraduate Research Symposium, College of Charleston

2024 Poster Presenter, Sea Grant Consortium Forested Wetlands Conference

2024 Poster Presenter, SACNAS Diversity in STEM Conference

2024 Speaker, Phylogeographic Patterns in the Baja Coachwhip (*Masticophis fuliginosus*), REU Research Symposium

2023 Speaker, Ecology of Wetland Arthropods, College of Charleston Biology Club

References

Dan McGlinn, Associate Professor of Biology — College of Charleston
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Edward Meyers, Ph.D. - Researcher at the California Academy of Sciences and American Museum of Natural History
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Michael Hodges, Head Biologist — SCDNR Oyster Recycling and Enhancement Program
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Kevin Swain, Biologist — SCDNR Oyster Recycling and Enhancement Program
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