Savannah Ryburn

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EDUCATION

Ph.D. in Ecology	***University of North Carolina at Chapel Hill (2019 - present)*** Advisor: Dr. John F. Bruno
B.S. in Zoology	***University of Florida (2014 - 2018)*** Cum laude, Dean's Honored Student

RESEARCH INTERESTS

- Elucidating the diet of sharks with the use of fecal DNA and metabarcoding
- Identification and characterization of scalloped hammerhead shark nursery habitats in the Galápagos
- Ecology and habitat use of juvenile scalloped hammerhead sharks

PUBLICATIONS (* Undergraduate mentee)

Accepted	**Ryburn SJ**, Ballantine WM, Loncan FM, Manning OG, Meggan AA, Steinwand B, and Bruno JF. *The public's awareness of seafood mislabeling*. PeerJ
In Prep	Frock CF, Potash AD, **Ryburn SJ**, Shiver SS, Conner ML, and McCleery RA. *An extreme weather event and weather variability affects the movement behavior of a GPS-collared small mammal species*.
In Prep	**Ryburn SJ**, Wisely E, Plumlee JD, Branham C, Fodrie FJ, Bruno JF. *Elucidating the diet of sharks with DNA metabarcoding of fecal matter*.
In Prep	Plumlee JD, Branham C, **Ryburn SJ**, Parker C*, Srebnik ER*, Fodrie J. *Elucidating trophic and habitat partitioning of a diverse marine predatory community.*

EXPERIENCE

2018 - 2019 **Research Technician** *Cape Eleuthera Institute*

- Assisted in research focused on the pelagic food web within the Exuma Sound with the use of fish aggregation devices, light traps, surface transects, environmental DNA, shark satellite tagging, muscle, fin, fecal swab, and blood sampling
- Assisted in novel research focused on coral reef restoration and propagation
- Assisted in research focused on sea turtle behavior, population dynamics, morphologies, and predator prey relationships through drone surveys, tagging, and attaching an animal borne camera to the carapace
- Management of interns and assisted in the operation and maintenance of a remote field station
- Taught a scientific research class to high school students at the Cape Eleuthera Island School

2018 - 2019 **Independent Undergraduate Research** *University of Florida*

Used GPS data from collared fox squirrels investigating the effects that hurricanes have on fox squirrel activity and movement

2017 - 2018 **Undergraduate Research Assistant** *University of Florida*

Assisted in graduate research focused on how variations in fox squirrel pelage cluster in space and with environmental conditions by measuring pelage color of museum specimens using novel technology, tracking fox squirrels using radio telemetry, and assisting with fox squirrel captures

2017 **Undergraduate Research Assistant** *University of Florida*

Collected data for a long-term study comparing the effects that the presence and absence of African elephants have on the biodiversity of African savannahs through bird surveys, small mammal trapping, vegetation surveys, and game camera and anabat recordings in South Africa and Eswatini

2016 - 2017 **Undergraduate Research Assistant** *University of Georgia*

Assisted in graduate research focused on the long-term population dynamics of vermetid snails

2016 **Undergraduate Research Assistant** *University of Florida*

Assisted in marine invertebrate collections for the Florida Museum of Natural History

2016 **Independent Undergraduate Research** *University of Florida*

Designed and conducted a field study on the effects that coral reef fish characteristics and tourism density have on fish fear using flight initiation distances in Akumal, Mexico

TEACHING

2021, 2022 **Teaching Assistant - Biology of Marine Organisms Lab** *University of North Carolina at CH*

- Taught an advanced biology lab focused on marine animal phylogeny, anatomy, and identification
- Designed and converted the course to an online format
- Spring 2022 in person; Spring 2021 online

2021 **Teaching Assistant - Seafood Forensics** *University of North Carolina at CH*
Taught an advanced biology lab focused on identifying mislabeled seafood using DNA barcoding

2019 - 2020 **Teaching Assistant - Biology 101 Lab** *University of North Carolina at CH*

- Taught an introductory biology lab course for three semesters
- Fall 2019 and Spring 2020 in person; Fall 2020 online

2019 **Applied Research Instructor** *Cape Eleuthera Island School*

- Lead field expeditions and taught grades 10-12 in an experimental study abroad program focused on scientific method, data analysis, scientific writing, public speaking, and field skills
- Resulted in a published poster with the Fisheries Conservation Foundation
  - Investigating the vertical and horizontal movements of juvenile silky sharks

2015 **Undergraduate Teaching Assistant - X-Lab** *University of Florida*
Assisted graduate teaching assistant in conducting each interdisciplinary Biology I, Chemistry I, and Physics I lab

MENTORSHIP

Undergraduate:
Makala Wiles (Fall 2020 – Spring 2021)
Caroline Parker (Fall 2021 - present)
Emma Rudy Srebnik (Spring 2022 - present)

Post-Graduate:
Creed Branham (Summer 2020)

PRESENTATIONS

2022 **Ryburn SJ**, Wisely E, Plumlee JD, Branham C, Fodrie FJ, Bruno JF. *Elucidating the diet of sharks with DNA metabarcoding of fecal matter.* Benthic Ecology Meeting. Poster Presentation.

2021 Plumlee JD, Branham C, **Ryburn SJ**, Fodrie J. *Elucidating trophic and habitat partitioning of a diverse marine predatory community.* Coastal & Estuarine Research Federation. Virtual Presentation.

2021 Plumlee JD, Branham C, **Ryburn SJ**, Fodrie J. *Elucidating trophic and habitat partitioning of a diverse marine predatory community.* North Carolina American Fisheries Society Meeting. Virtual Presentation.

2019 *Marine Ecology*. Leon Levy Native Plant Preserve National Park Day, Eleuthera, The Bahamas. Oral Presentation.

2016 **Ryburn SJ**, Mallica CM, and Gil MA. *Impacts of fish traits and tourist density on reef fish fear*. UF Undergraduate Research Symposium, Gainesville, FL. Poster Presentation.

2016 **Ryburn SJ**, Mallica CM, and Gil MA. *Impacts of fish traits and tourist density on fish fear and species richness in Akumal, Mexico coral reefs*. UF Biology Department Undergraduate Research Assistantship Program, Gainesville, FL. Poster Presentation.

SCHOLARSHIPS AND GRANTS

2021	UNC Graduate School Summer Research Fellowship	$5,000
2020	Sigma Chi Small Research Grant	$750
2018	Cape Eleuthera Institute Educational Opportunity Grant	$1,000
2017	Universidad de Guadalajara PEPE Scholarship	$1,250
2017	University of Florida Study Abroad Scholarship	$1,250
2016	University of Florida Biology Immersion Semester Grant	$500

PROFESSIONAL AFFILIATIONS

2021 - present British Ecological Society (Member)

CERTIFICATIONS

2022 Divers Alert Network (DAN) Member Diving First Aid for Professional Divers certification
2019 Florida Boaters License (250 hours)
2019 SOLO Wilderness First Responder
2018 AGRRA (Atlantic Gulf Rapid Reef Assessment) Coral
2016 American Academy of Underwater Science (AAUS) Scientific Diver
2016 NAUI Rescue Diver
2016 NAUI Enriched Air Nitrox

2016 NAUI Advanced Open Water
2014 NAUI Open Water SCUBA

SKILLS

Field Research Techniques:

- Abundance Surveys and Animal Capture:
    - Long lining, drum lining, gill netting, seine netting, underwater video surveys, underwater quadrat surveys, underwater transect surveys, drone / ROV piloting and navigation
    - Coral fragmenting, coral tree construction and maintenance
    - Wildlife handling, trapping, sampling, and tagging (aquatic and terrestrial)
- General Skills:
    - Small boat operation (250 hours of driving), radio telemetry, dissection, marine species ID, husbandry
    - English (fluent), Spanish (limited)

Laboratory Techniques:

- Genetic Analysis: DNA extraction, PCR, gel electrophoresis, metabarcoding

Quantitative Skills:

- Computer Software: R studio, ImageJ, Adobe Photoshop/InDesign/Illustrator, Microsoft Office Suite

POPULAR PRESS

UNC PhD students turn challenges of pandemic into opportunities in Galapagos. *Center for Galapagos Studies*. September 21, 2021. https://galapagos.unc.edu/unc-phd-students-turn-challenges-of-pandemic-into-opportunities-in-galapagos/

UNC institute's shark survey a trove of 50 years of data. *Coastal Review*. July 14, 2021. https://coastalreview.org/2021/07/unc-institutes-shark-survey-a-trove-of-50-years-of-data/

The 50-year shark search: UNC's Institute of marine sciences celebrates shark research anniversary. *North Carolina Public Radio*. July 13, 2021. https://www.wunc.org/science-technology/2021-07-13/unc-marine-sciences-shark-research

Researchers working to protect shark population, food sources in North Carolina. *WITN*. August 13, 2020. https://www.witn.com/2020/08/13/researches-working-to-protect-shark-population-food-sources-in-north-carolina/

Shark Week: Carteret Country scientists research, educate year-round. *Carteret County News-Times*. August 8, 2020. https://www.carolinacoastonline.com/news_times/article_41eb4494-d8c6-11ea-bc21-1b08f167f942.html#comments

The past, present, and future of shark research. *The Well*. August 7, 2020. https://thewell.unc.edu/2020/08/07/the-past-present-and-future-of-shark-research/

OUTREACH

2021 **Researcher** *SciREN Coast Networking Workshop;* North Carolina

- Created and distributed an interactive lesson plan on the adaptations and diets of sharks for K- 12th grade teachers to implement in their classrooms

2018 - 2019 **Volunteer** *Cape Eleuthera Institute;* Eleuthera, The Bahamas

- Taught local children how to swim every other week
- Taught hands on lessons about marine biology to grades 3-9 at Deep Creek Middle School
- Lead field expeditions and taught lessons on marine biology to educational groups visiting the Cape Eleuthera Institute ranging from grades 5-12 and college students

2012 - 2013 **Volunteer** *Honeymoon Island State Park;* Dunedin, FL

- Monitored the beach for sea turtle nests with the park biologist, relocating them if necessary
- Assisted in park maintenance through beach clean ups and manning the toll booths
- Taught hands on lessons about marine biology and conservation to preschoolers and grades K-5