

HANNAH-MARIE LAMLE

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Miami, FL - 33167, USA

RESEARCH INTERESTS

trait-based ecological modelling, coral macroalgal competition, reefscape ecology

EDUCATION

- **Florida International University** August 2023 - May 2028
P.h.D. Biological Sciences Miami, FL, USA
 - Advisor: Dr. Rolando Santos
 - Dissertation: "Quantifying colorful communities: Community assembly, function and resilience of corals throughout South Florida using spectral traits"
- **Indiana University** August 2018 - May 2022
B.S. Environmental Science Bloomington, IN, USA
 - Certification: Underwater Resource Management
 - Honors Thesis: "Coral Reefs under Threat: Could Repopulating the West Indian Spider Crab Help?"

RESEARCH EXPERIENCE

- **Graduate Research Assistant** [🌐] August 2023 - Present
Florida International University Santos Seascape Ecology Lab Miami, FL, USA
 - Conducting relevant literature reviews and experimental design for dissertation chapters
- **Research Associate** [🌐] August 2022 - July 2023
Indiana University Center for Underwater Science Bloomington, IN, USA
 - Field monitoring of IUCN recognized endangered coral species on shipwreck sites in Dominican Republic
 - Management of biological resource conservation of archaeological sites
- **Research Assistant** [🌐] August 2021 - May 2022
Indiana University Geobiology of Invertebrates Lab Bloomington, IN, USA
 - Curated datasets with 20+ years of coral abundance data across 6 archaeological sites in the Florida Keys and Dominican Republic
- **Research Assistant** [🌐] August 2020 - May 2022
Indiana University Center for Underwater Science Bloomington, IN, USA
 - Assisted with archaeological artifact research and maintenance (conservation, historical data collection, field excavation and maintenance)
 - Created government reports and interpretive materials for underwater archaeological sites
- **Intern** [🌐] May 2021 - August 2021
Mote Marine Laboratory International Center for Coral Reef Research and Restoration Summerland Key, FL, USA
 - Responsible for over 500 coral fragments, including day-to-day husbandry activities and preparation of fragments to be out-planted
 - Assisted with growth experiments using photogrammetry techniques to monitor coral growth
- **Research Assistant** [🌐] August 2020 - May 2021
Indiana University Maxwell Research Lab Bloomington, IN, USA
 - Responsible for priming, sampling and measuring of tulip tree core samples to aid in identification of historical climate events
- **Intern** [🌐] October 2018 - May 2019
Indiana University Integrated Program in the Environment Bloomington, IN, USA
 - Conducted guided research with a mentor assessing persistence of document preservation centers in the anthropocene
 - Presented research at annual Indiana University sustainability symposium

PROJECTS

- **Show me your colors: Using hyperspectral analysis to quantify coral health** *August 2024 - Present*
Tools: spectroscopy, laboratory analysis (spectrophotometer, hemocytometer), coral husbandry, R
 - Designed and developed an experimental framework to investigate influence of physiological trait values on coral spectral reflectance profile
 - Established protocols and methodologies for data collection, scheduled for Summer 2025
 - Coordinating logistics and preparations for implementation, including coral acquisition, methodological refinements, collaborations.
- **Stream Flow Reduction Experiment (StreamFRE)** *February 2024 - Present*
Tools: Animal tagging equipment (PIT tags, elastomer)
 - Conducted bi-annual field sampling for the Luquillo LTER, utilizing PIT tags and colored elastomer to track shrimp movement in mountain step-pools.
- **Fish In Seagrass Habitats: Seascape Connectivity Across Protected Ecosystems (FISHSCAPE)** *January 2024 - Present*
Tools: Underwater quadrat photography
 - Supported the use of GPS technology and ground-truthing to train machine learning models for mapping seagrass habitats.
- **Restoring the three-dimensional structure of hurricane-impacted coral reefs in Puerto Rico** *August 2023 - Present*
Tools: Coralnet, TagLab, R
 - Assisted with data analysis tracking coral colony growth and survivorship across multi-year observational study
 - Assisted with data analysis estimating benthic community coverage in large area images created via photogrammetry
 - Assisted with statistical analysis of population modeling
- **RAPID: Here we go again - The fate of Diadema antillarum and Caribbean reefs in the 21st century** *August, 2023 - December, 2024*
Tools: Coralnet, TagLab
 - Assisted with data analysis tracking coral colony growth and survivorship across multi-year observational study
 - Assisted with data analysis estimating benthic community coverage in large area images created via photogrammetry
- **Assessing Functional Trait Dynamics of Caribbean Scleractinia Communities in Puerto Rico's Northeast Marine Corridor** *January 2024 - May 2024*
Tools: Data curation
 - Assisted with the creation of regional trait database for selected species and traits of interest
- **Identification of the 16th Century Punta Espada Shipwreck** *January 2022 - July 2023*
Tools: underwater photogrammetry, magnetometer use, underwater survey methods for archaeology
 - Conducted archaeological survey and site assessment, including mapping of site and associated features
 - Assisted with field expedition planning and equipment management
 - Restored artifacts taken from the site to aid in pursuits of shipwreck discovery

PUBLICATIONS

Submitted:

- [1] **Lamle, H.M., Mucherheide, S.M., Divish, C., Baelz, J.D. (submitted). Biodiversity of coral species in selected Caribbean Regions.** Manuscript submitted for publication in the *Indiana University Journal for Undergraduate Research*.

PRESENTATIONS

Talks:

- [1] Bautista, V., Rivas, N., **Lamle, H.**, Nation, C., James, R., Santos, R. (April 12, 2024). **Assessing functional trait dynamics of Caribbean Scleractinia communities in Puerto Rico's Northeast Marine Corridor.** *Benthic Ecology Meeting*, in Charleston, SC, USA



Posters:

- [1] **Lamle, H.M., Santos, R.O. (2025). Show me your colors: Using spectroscopy to quantify coral health.** *FIU Biosymposium* in Miami, FL, USA.
- [2] **Lamle, H.M., Santos, R.O. (2025). Show me your colors: Using spectroscopy to quantify coral health.** *Reef Futures* in Rivera Maya, Mexico.

- [3] **Lamle, H.M.,** Bautista, V., Rivas, N.I., James, W.R., Santos, R.O. (April 13, 2024). **Exploring the inter- and intra-species pattern of spatial aggregation of coral recurits in Culebra, Puerto Rico.** *Benthic Ecology Meeting* in Charleston, SC, USA
- [4] **Lamle, H.M.,** Baelz, J.D., Johnson, C., Beeker, C.D. (January 2, 2023). **Biology of Shipwrecks in the Dominican Republic: How submerged cultural resources facilitate the growth of endangered and threatened coral species.** *Society of Historical Archaeology Conference* in Lisbon, Portugal.
- [5] **Lamle, H.M.,** Baelz, J.D., Johnson, C., Beeker, C.D. (January 3, 2022). **An updated report for the biology of shipwrecks in the Florida Keys National Marine Sanctuary.** *Society of Historical Archaeology Conference* in Philadelphia, PA, USA.
- [6] **Lamle, H.M.,** Morrison, K., Montoya, R.D. (May 2, 2019). **Document centers and environmental sustainability.** *Indiana University Sustainability Symposium* in Bloomington, IN, USA.

FUNDING

Current:

- **South Florida Program** August 2025 - August 2028
Environmental Protection Agency, Region 4: \$750,000 
 - Three year grant funding proposed novel coral monitoring technique utilizing hyperspectral imaging to non-invasively assess coral health
 - Assisted with proposal development and writing, creation of conceptual diagrams, and budget planning
- **Graduate Student Coastal and Ocean Research Fellowship** August 2024 - August 2025
Florida SeaGrant: \$25,000 
 - One year fellowship to fund graduate research activities in coastal/marine science

Completed:

- **Student Travel Award** December 2024
FIU CREST CAChE: \$500
 - Travel funding to Reef Futures Conference
- **Student Travel Award** December 2024
FIU Graduate and Professional Student Council: \$700
 - Travel funding to Reef Futures Conference
- **Student Travel Award** March 2024
FIU CREST CAChE: \$500
 - Travel funding to 52nd the Benthic Ecology Meeting
- **Blue World/Oceanic Research Group Undergraduate Marine Conservation Scholarship** March 2022
Women Divers Hall of Fame: \$1000
 - Scholarship to fund undergraduate research activities
- **Provost's Scholarship** August 2018 - January 2022
Indiana University Office of Scholarships: \$4500/semester
 - Scholarship to fund undergraduate tuition
- **Scholar's Award** August 2018 - January 2022
Indiana University O'Neill School of Public and Environmental Affairs: \$1500/semester
 - Scholarship to fund undergraduate tuition
- **Sustainability Scholarship** January 2019
Indiana University Integrated Program in the Environment: \$1000
 - Scholarship to fund undergraduate research experience

SKILLS AND CERTIFICATIONS

SCUBA diving:

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| <ul style="list-style-type: none"> • AAUS Scientific Diver (Florida International University) • Indiana University Scientific Diver • PADI Open Water Scuba Instructor (#523283) • PADI Enriched Air Diver | <ul style="list-style-type: none"> • PADI Underwater Photography • PADI Search and Recovery • PADI Cavern • TDI Ice Diver | <ul style="list-style-type: none"> • DAN Emergency Oxygen Provider • DAN First Aid for Hazardous Marine Life Injuries Provider • DAN CPR and First Aid (BLS) • DAN Emergency Oxygen for Scuba Diving Injuries (EO2) |
| <div style="display: flex; justify-content: space-between;"> <div style="width: 33%;"> First Aid: <ul style="list-style-type: none"> • DAN Neurological Assessment Provider </div> <div style="width: 33%;"></div> </div> | | |

Programming & Data Analysis:

- Proficient in R and PRIMER for statistical analysis, modelling, and processing
- Proficient in PRIMER for ecological statistical analysis
- Proficient in html and css for website development

Technology

- ArcGIS Pro
- Adobe Photoshop

- Adobe Illustrator
- VISCORE
- TagLab
- CoralNet
- Agisoft Metashape Pro

Field Work:

- Small vessel operations
- Florida boating license
- photogrammetry

- coral disease surveys
- underwater archaeological survey
- underwater magnetometer survey

Laboratory Skills:

- microscopy, cell counting via hemocytometer
- spectrophotometry
- coral microfragmentation

TEACHING

• Graduate Teaching Assistant

Florida International University Department of Biological Sciences

- Marine Protected Areas Online; Summer 2024 - Current
- General Biology II Lab Section (2 sections/semester); Spring 2024
- General Biology I Lab Section (2 sections/semester); Fall 2023

August 2023 - Present
Miami, FL, USA

• Visiting Lecturer

Indiana University Academic Diving Program

- PADI Open Water Diving Course (Certified 60+ students)

August 2022 - June 2023
Bloomington, IN, USA

OUTREACH AND VOLUNTEERING

Early Career Researcher (ECR) Committee Member

International Coral Reef Society (ICRS) Student and Early Career Chapter (SECC)

January 2025 - Present

MAST @ FIU Career Day

Representing FIU Marine Biology Program

February 26, 2025

Family Science Night at Citrus Grove K-8 Center

Representing the Santos Seascape Ecology Lab

March 14, 2024

PROFESSIONAL MEMBERSHIPS

• International Coral Reef Society Student & Early Career Chapter

January 2025 - Present

• American Society for Photogrammetry and Remote Sensing (ASPRS), FIU Chapter

February 2024 - Present

• Women Divers Hall of Fame, Associate Member

March 2022 - March 2023

REFERENCES

1. Dr. Rolando O. Santos

Assistant Professor, Department of Biological Sciences
Florida International University
Email: rsantosc@fiu.edu
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Major Advisor

2. Dr. W. Ryan James

Research Assistant Professor, Department of Biological Sciences
Florida International University
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Committee Member

3. Dr. Charles Beeker

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Indiana University
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Phone: +1 (812) 855-5748
Project Supervisor