

# DEBORAH I. RIVERA ORTEGA

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## EDUCATION

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- BS** University of Puerto Rico, Rio Piedras Campus August 2021- May 2026  
**Major in Environmental Sciences**  
Second Concentration in Information and Journalism  
Minor in Human Rights
- HS** Papa XXIII Specialized in Science and Mathematics August 2018 - May 2021  
High School Diploma – **Graduated with Honors**  
Bayamón, Puerto Rico

## RESEARCH EXPERIENCE

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- Undergraduate Research Assistant** July 2024 - Present  
Molecular Evolution of Marine Invertebrates Laboratory  
University of Puerto Rico, Mayagüez Campus – Isla Magueyes  
Advisor: PhD Student Glorimar Franqui
- In collaboration with the Natural Resources Department of Puerto Rico, we do shark necropsies of sharks found in the coast of Puerto Rico to find the cause of death and see the state of the sharks after their death.
  - Shark necropsy documentation by measuring, looking for abnormalities and gender identification. We remove and store several organs depending on their decomposition for further isotope lab analysis.
- Undergraduate Research Assistant** January 2024 – Present  
ECOLAB- Center for Applied Tropical Ecology and Conservation  
University of Puerto Rico, Rio Piedras Campus  
Advisor: Dra. Elvira Cuevas, Juan Sanchez
- In collaboration with Protectores de Cuencas, we monitor sediment from 13 beaches in Culebra, Puerto Rico to see organic, carbonate and mineral matter in each sediment sample.
  - Lab analysis of sediment samples to calculate sediment accumulation rate in fine and coarse sediment with total dry mass analysis, calculating trap accumulation rate and sediment composition analysis by doing sequential loss on ignition analysis.

**Undergraduate Research Assistant**

January 2023 – December 2023

ECOLAB- Center for Applied Tropical Ecology and Conservation

University of Puerto Rico, Rio Piedras Campus

Advisor: Dra. Elvira Cuevas and Isabel Ayalón

- This investigation was made with the graduate student Isabel Ayalón for her undergraduate dissertation. We used *Pterocarpus officinalis* trees in the Military base in Buchanan, Puerto Rico to sample roots for nodule activity and nitrogen fixation. Soil and leaves were collected for other analysis.
- Field sampling and Lab analysis of root and soil samples. Documentation of root and nodule characteristics, such as size, color, and quantity.

**ATMAR Internship**

ATMAR INC. Amigos de las Tortugas Marinas

June - August 2023

Maunabo, Puerto Rico

Advisor: Luis Crespo

- Protection and exhuming of leatherback nest and documentation of survival rate.
- Day and night patrol of sea turtle nesting sites (approximately 3 miles every day).
- Tissue sampling of leatherback turtles.

**PROFESSIONAL DEVELOPMENT/SCIENCE**

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**National Hispanic Environmental Council (NHEC)**

July-August 2024

Field Studies and visits to various sites in New Mexico. Determined the conditions of a natural area by analyzing water quality, benthic macroinvertebrates diversity, soil quality by using soil pH kits, and water quality test kits also vegetation and wildlife monitoring.

- Vegetation monitoring; Identified bankfull and laid a transect along it in a riparian zone. Using this transect, collected vegetation data via quadrat cover estimation using Daubenmire cover classes, and used the point-intercept method on random sampling points. Used a fixed-radius plot to conduct tree mensuration, measuring diameter at breast height (DBH) using DBH tape and wedge prism, and height via clinometer.
- Water Monitoring with EXO-1 and 2, La Motte kits, clinometers, Hanna multiparameter and seine nets.
- Macroinvertebrate collection with D nets and fishing nets and identification.
- Soil sampling with augers, aggregate stability index and soil color identification. Soil color was determined by Munsell soil-color charts.

Field Studies and visits to various sites in New Jersey and New York City. Determined the conditions of a natural area by analyzing water quality, benthic macroinvertebrates diversity, soil quality, and surroundings by using soil pH kits, and water quality test kits.

- Vegetation monitoring; Identified bankfull and laid a transect along it in a riparian zone. Using this transect, collected vegetation data via quadrat cover estimation using Daubenmire cover classes, and used the point-intercept method on random sampling points.
- Water Monitoring with EXO-1 and 2, La Motte kits, clinometers, Hanna multiparameter, seine nets, flow meters.
- Macroinvertebrate collection with D nets and fishing nets and identification using the Atlas of common freshwater macroinvertebrates of Eastern North America.
- Soil sampling with augers, horizon, aggregate stability index and soil color identification. Soil color was determined by Munsell soil-color charts.

## **WORKSHOPS**

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“Assessment of Vulnerability to Ocean Acidification in PR”, March 2023

“Water Quality Monitoring Training”, March 2023

“Coastal Resilience of Scientific Citizens”, January 2023

**Entrepreneurship Program** “Project Makers”, November 2021

## **PRESENTATIONS**

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National Hispanic Environmental Council 19<sup>th</sup> Annual New Mexico Institute  
“San Antonio Creek Ecological Assessment” – August 2024

National Hispanic Environmental Council 14<sup>th</sup> Annual NJ/NY Institute  
“Rutgers Ecological Reserve – Buell Brook Ecological Assessment” – June 2024

ECOLAB- Center for Applied Tropical Ecology and Conservation  
“Effects of changing climate, ocean conditions, and land uses on the spatial-temporal variation of the dynamics of sediments along nearshore coral reefs” – March 2024

ECOLAB- Center for Applied Tropical Ecology and Conservation  
Review of the scientific paper “Isotope discrimination provides new knowledge on the biological fixation of nitrogen” – November 2023

ECOLAB- Center for Applied Tropical Ecology and Conservation  
Review of the scientific paper “Nodulation of *Pterocarpus officinalis* in swamp forest of Guadalupe (Lesser Antilles)” – May 2023

7<sup>th</sup> Undergraduate Research and Creation, University of Puerto Rico, Rio Piedras Campus  
“Creative Writing: Unreturned Love” - October 2022

### **PROFESSIONAL ACTIVITIES AND AFFILIATIONS**

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Student Chapter of “Sociedad Ambiente Marino”

**President** August 2024 – Present

- Fundraiser, beach cleanup and activities coordinator. Participated in sea turtle beach patrols and workshops for school students. Worked with lionfish, sea urchins, coral reef maintenance, algae, water monitoring, ocean acidification, sharks and shrimp.

**Public Relations Manager** August 2023 – June 2024

- Social Media Management and event coordination

University Publicist and Public Relations Association August 2023 – May 2024  
**Student Member**

National Society of Collegiate Scholars  
**Student Member** 2022-Present

### **COMMUNITY SERVICE AND VOLUNTEER WORK**

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**Ecological Summer Camp** – Isla Magueyes, Lajas PR July 2024  
Instructor, Workshops Assistant

**Chelonia** – Dorado PR June 2024- Present  
Investigation and conservation of sea turtles

**CIROM, Iser Caribe** – Ceiba PR June 2024- Present  
Assistant in sea urchin collection

**Coral Reef Rehabilitation Program** – Culebra PR May 2024- Present  
Maintaining coral farming units and assisted in rehabilitation techniques

**International Summit of African Descent**– UPRRP PR April 2024  
Volunteer in registry and event organization

**Boys and Girls Club of Puerto Rico** - Bayamon, PR 2019-2022  
Volunteer, Kitchen Helper, Mentor  
President of Keystone Leadership Club

## LANGUAGES

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Fluent in English and Spanish

## SKILLS

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Laboratory: AmScope, pH meter, standard and high-speed centrifuges, pipettes, sterile techniques practices, microscope and stethoscope use.

Computer Software: Windows OS, Mac OS, MS Office, Google Earth Pro, Proficient ArcGIS and R Studio

## CERTIFICATIONS

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- PDIC International Diver – Open Water June 2023
- Proper Management of Hazardous Waste in Laboratories March 2023  
(40 CFR 261-262)
- Hazard Communication Standard and the Globally Harmonized System March 2023  
(29 CFR 1910. 1200)
- Laboratory Chemical Exposure Standard (29 CFR 1910. 1450) March 2023