

Laurel C. Diaz – *Curriculum Vitae*

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PhD Student
University of California, Los Angeles
Department of Ecology and Evolutionary Biology

EDUCATION

- 2025 – 2030 (Anticipated) **Ph.D. Biology**, University of California, Los Angeles Los Angeles, CA
Dissertation (proposed): The regulation pathway of biomineralization in the *Orbicella* complex and differential gene expression in disease and across different life stages
- 2023 - Dec 2025 **M.S. Biology**, California State University, Northridge Northridge, CA
Thesis: Shifting benthic community composition indirectly alters coral host and endosymbiont physiology through biogeochemical feedback loops
- 2016 – 2019 **B.S. Biology**, Marine and Freshwater Sciences, The University of Texas at Austin Austin, TX
Undergraduate thesis: Using hydroacoustics to determine fish vertical distribution in response to environmental factors in the Aransas Shipping Channel

PUBLICATIONS

- (4) Diaz, L., Rochette-Yu Tsuen, K., Reed, K., Nelson, C., Silbiger, N. (2026) Shifting benthic community composition indirectly alters coral host and endosymbiont physiology through biogeochemical feedback loops. *Limnology and Oceanography (in review)*.
- (3) Ferguson, K., Nickel, A., Diaz, L., Salman, M., Rowatt, W., Hebl, M., Scullin, M. (2023) Experimental Sleep Restriction, Moral Absolutism, and Religiosity. *Sleep 46 (Supplement_1) A93-A94*
- (2) Cruz, A., Nickel, A., Barley, B., Diaz, L., Scullin, M. (2023) Time-in-Bed Classroom Challenges: Incentivizing Undergraduate Students to Improve Sleep During Final Exams Week. *Sleep 46 (Supplement_1), A90*
- (1) Bolser, D.G., P. Souza Jr., J.P. Egerton, L. Diaz, A. Richard, B.E. Erisman. (2023) Explaining trends in the acoustic backscatter of fishes within a ship channel in the Gulf of Mexico. *Estuaries and Coasts*.

GRANTS AND FELLOWSHIPS

- 2024 – 2029 National Science Foundation Graduate Research Fellowship Program (NSF GRFP) **(\$159,000)**
- 2024 – 2025 College of Science and Mathematics Graduate Fellowship for Outstanding Research Promise **(\$5,000)**
- 2024 Dr. Kenneth H. Coale Graduate Scholar Award, CSU Council on Ocean Affairs, Science & Technology (COAST) **(\$4,000)**
- 2024 Thesis Support Grant, California State University, Northridge **(\$400)**
- 2018 – 2019 Texas Advance Scholarship (Merit and Need-Based), University of Texas at Austin **(\$2,500)**
- 2018 Wally Scott Endowed Scholarship (Merit and Need-Based), University of Texas at Austin **(\$2,500)**

AWARDS AND HONORS

- 2019 University Honors, University of Texas at Austin
- 2016 National Society of High School Scholars Academic Paper Award: “The Effects of Anthropogenic Activities on Coral Reefs and Their Contributions to Modern Human Medicine” **(\$1,000)**

RESEARCH EXPERIENCE

Aug 2023 – 2025

California State University, Northridge (Northridge, CA) Master's Student

Quantitative Marine Ecology

Project: Shifting benthic community composition indirectly alters coral host and endosymbiont physiology through biogeochemical feedback loops

- Investigating how altered reef communities post-disturbance events (e.g. Crown-of-Thorns outbreaks and bleaching events) change reef biogeochemistry, and how altered biogeochemistry indirectly affects the physiological rates of *Porites rus* (e.g. respiration, photosynthesis, and calcification).
- Experienced in physiological parameter protocols including: respirometry, buoyant weighing, ash-free dry weight, algal endosymbiont counts, coral tissue removal, and wax dipping for surface area calculation.
- Experienced in environmental probe and logger protocols including: HOBO conductivity and temperature loggers, HOBO pressure/depth loggers, HOBO pH loggers, Orion multi-parameter sensors, YSI multi-parameter prometer, PME miniDOT Oxygen loggers, LI-COR miniPAR Underwater Quantum Sensor, and Apogee Light Sensors.
- Experienced with usage of the Mettler-Toledo InMotion Pro Autosampler and Titrator to determine total alkalinity, as well as LabX Laboratory Software.

Jul 2021-Mar 2022

Baylor University (Waco, TX) Post-Baccalaureate Research Assistant

Sleep Neuroscience Lab

Projects: (1) Translating Innovations from the Sleep Laboratory to Enhance Classroom Education and Informal Science Learning; (2) Impact of Sleep Loss on Creativity Processes and Educational Learning; Health and Learning; (3) The Effects of Sleep on Social Cognitive Processing

- Investigated memory performance and retention between baseline and post-sleep intervention with polysomnography (PSG)
- Assisted with drafts and revisions of IRB proposals, data input, quantitative analysis, and manuscript preparation.
- Coordinated educational and outreach opportunities through grant-funded projects.

Aug 2017 - Dec 2019

University of Texas at Austin (Austin, TX) Undergraduate Research Assistant

Coral Genomics Lab

Projects: (1) Discovering Biomarkers of Age in Crown-of-Thorns Starfish; (2) Hurricane-driven Asexual Reproduction in Massive Boulder Corals in the Florida Keys

- Helped create a novel haplotyping assay for field use and conducted methylation processing for comparison of juvenile and adult Crown-of-Thorns starfish.
- DNA extractions of massive boulder coral fragments (*Orbicella faveolata*) from the Florida Keys to analyze the effect of Hurricane Irma on asexual reproduction.
- Used a Nanodrop to record quality of nucleic acids from samples.
- Used thermal cyclers to process DNA samples for haplotyping assay.

Jan 2019 - May 2019

University of Texas at Austin Marine Science Institute (Port Aransas, TX) Undergraduate Research Assistant

Fisheries Ecology Lab

Project: Using Hydroacoustics to Determine Fish Vertical Distribution in Response to Environmental Factors

- Used acoustic telemetry to explore spatial and temporal patterns in fish diversity and distribution in relation to environmental conditions in the Aransas Ship Channel.
- Gathered acoustic data on a research vessel using a Simrad EK80 Echosounder and Echoview software.
- Processed and analyzed data in R and R Studio.
- Developed fisheries ecology lab techniques, including identifying fish species, measuring lengths (total, standard, and fork length), determined fish sex and spawning stage, extracted otoliths for age and growth study.
- Findings from undergraduate research project contributed to a larger project published in *Estuaries and Coasts*.

TEACHING EXPERIENCE

Teaching Associate

2023 – 2024 BIOL 101L Introductory Biology Lab, CSUN (Fall 2023 and Spring 2024)

- Taught major concepts in biology, including evolution, environmental relationships, heredity, cell structures, energetics and functions of living systems, and development.
- Guided students through laboratory procedures and how to properly use equipment including microscopes, pipettes, chemicals, and dissecting tools.
- Gave short lectures before laboratory activities to brief students on content.
- Wrote a cumulative final exam to test students on the course material.
- Graded student homework assignments, activities, and exams.

PROFESSIONAL CONFERENCES AND PRESENTATIONS (* denotes presenter)

2025 Western Society of Naturalists Conference (San Diego, CA)
“Shifting benthic community composition indirectly alters coral host and endosymbiont physiology through biogeochemical feedback loops”

*¹Diaz, L., ²Rochette-Yu Tsuen, K., ²McClintock, R., ¹Reed, K., ^{1,2}Silbiger, N.J.

¹California State University, Northridge

²University of Hawai‘i at Mānoa

2024 CSUNPosium, California State University, Northridge (Northridge, CA)
“Material legacies from disturbance events may indirectly impact coral physiology”

*¹Diaz, L., ^{1,2}Silbiger, N.J.

¹California State University, Northridge

²University of Hawai‘i at Mānoa

2024 Western Society of Naturalists Conference (Portland, OR)
“Impacts of material legacies on local biogeochemistry and coral physiology”

*¹Diaz, L., ²Rochette-Yu Tsuen, K., ²McClintock, R., ¹Reed, K., ^{1,2}Silbiger, N.J.

¹California State University, Northridge

²University of Hawai‘i at Mānoa

2023 Western Society of Naturalists Conference (Monterey, CA)
“Using Hydroacoustics to Determine Fish Vertical Distribution in Response to Environmental Factors”

*¹Diaz, L., ^{1,2}Bolser, D., ^{1,3}Erisman, B.

¹University of Texas at Austin, Austin, Texas

²National Oceanic and Atmospheric Administration, Fisheries Assessment and Monitoring Division

³National Oceanic and Atmospheric Administration, Southwest Fisheries Science Center

2020 The Society for Integrative and Comparative Biology
“Hurricane-driven asexual reproduction in massive boulder corals in the Florida Keys”

Bedwell, H.E.¹, Abbott, E.¹, Balogh, A.¹, Kolodziej, G.², Hejmadi, P.¹, Diaz, L.¹, Huynh, K.¹, Ma, J.¹, Matz, M.V.¹, Kenkel, C.D.³

¹University of Texas at Austin, Austin, Texas

²Atlantic Oceanographic and Meteorological Laboratories, NOAA, Miami, Florida

³University of Southern California, Los Angeles, CA

2019 University of Texas at Austin Marine Science Institute Research Symposium
“Using Hydroacoustics to Determine Fish Vertical Distribution in Response to Environmental Factors”

*¹Diaz, L.

¹University of Texas at Austin, Austin, Texas

LEADERSHIP AND VOLUNTEER EXPERIENCE

2024 Vice President - Marine Biology Graduate Student Association (MBGSA)

- Assists MBGSA President in organizing weekly meetings
- Leads paper discussions and engages graduate students' involvement

- Organizes team building and volunteer events
- Manages the organization's merchandise

2023 Reef Conservation International (Placencia, Belize)

- Assisted in the extraction of invasive Lionfish in the Belize Barrier Reef using SCUBA.
- Helped create a sea turtle nest on the island for their spawning season.
- Cleaned and organized SCUBA equipment for the organization and other volunteers.

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

American Academy of Underwater Sciences, Western Society of Naturalists, International Coral Reef Society

CERTIFICATIONS AND SKILLS

Certifications: AAUS Scientific Diver, NAUI Rescue Diver, DAN First Aid, SSI Open Water Diver, Informal Science Education (Portal to the Public), Collaborative Institutional Training Initiative (CITI)

Technical Skills: RStudio, Echoview, Ocean Data View, ImageJ, Adobe Photoshop

Language Skills: Working proficiency/conversational in Spanish