

ZACHARY ZAGON

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Objective Statement

I am an ecologist, biologist, and educator and have done research on disease, physiology, microbial interactions, and climate change, with additional experience and education in carbonate chemistry, ocean acidification, geology, and husbandry/lab maintenance. In addition to being a researcher, I am also an educator, especially in video format; I am a published documentary filmmaker and have been involved with outreach events and instruction since I was an undergraduate. I am committed to becoming a leader in the future preservation of reef ecosystems and educating the next generation to be even better leaders. I believe that proper science education and making science accessible is just as important as innovative and progressive research.

Research Experience

Atlantic Oceanographic and Meteorological Laboratories and Experimental Reef Laboratory (NOAA, CIMAS)

Graduate Research Intern / March 2022 – August 2023

- Coral husbandry and overall lab and aquaria maintenance to ensure all 16 tanks, 2 robotic arms, and all experiments are fully functional and not hindered in any way
- Experience with *A. cervicornis*, *M. cavernosa*, *C. natans*, *O. faveolata*, sponges, and reef stones
- Conduct PAR measurements and calibration, pH analysis, nutrient sampling, DNA/RNA extraction, qPCR, IPAM fluorescence, data analysis, 3D printing (OnShape CAD), disease handling, general wet and dry lab maintenance
- Work with: Dr. Ian Enochs, Dr. Michael Studivan, Dr. Alice Webb, Dr. Ana Palacio, etc.

Ocean Acidification Lab

Independent Research / August 2022 - February 2023

- Worked on a project looking at how metabolic rate (photosynthesis and respiration via dark/light chambers), growth, Symbiodiniaceae, and tissue properties (chlorophyll-a, antioxidant capacity, lipids, & proteins.) change in *Porites porites* and *Siderastrea siderea* when acutely exposed to nitrogen enriched seawater
- Performed coral blasting, zooxanthellae counting, tissue filtering (lipids and dry weight), total antioxidant capacity analysis (using spectrophotometer), handling of biological samples, and basic chemical reagent preparation and usage
- Worked with Dr. Chris Langdon (University of Miami) and Dr. Fuad Al-Horani (University of Jordan)

Rosenstiel Forum Lab

Undergraduate Research Assistant / February 2022 – August 2022

- Wrote, reviewed, edited, and obtained the E-an Zen Fund for Geoscience Outreach Grant from the Geologic Society of America (GSA) and Geology & Society Division for \$1,500
- Picked, glued, and identified foraminifera from global sediment samples to use in [“Protist Prophet”](#) project and Foram Index use
- Developed educational content and curriculum for local underrepresented female high school students to teach them about Foraminifera and our lab
- Participated in IMPACT Program where a peer and I in the lab assisted the instruction of first-generation college-bound students that were shadowing in the Foram Lab (June - July 2022)
- Principal Investigators: Dr. Sam Purkis, Dr. Alex Humphries

Ocean Acidification Lab

Undergraduate Researcher (Undergraduate Thesis) / January 2019 – May 2022

- Performed coral husbandry tasks (cleaning fragments, cleaning tanks, feeding fragments, etc.)
- Collected data from hundreds of corals: measured vertical growth and buoyant weight of corals weekly to determine different genomes responses to elevated stress levels (temperature and CO₂)
- Worked directly with Dr. Chris Langdon and his Ph.D. students (Emma Pontes and Khadija Hadir) to collect data for their dissertations and for my [senior thesis](#), “Phenotypic adaptability of *Acropora cervicornis* to possible future climate conditions”

Additional Experience

Scientifica Magazine and the “Groundwork” Team

Videographer, Producer / August 2021 – May 2022

- Helped reestablish the Groundwork video series for Scientifica Magazine on the UM campus
- Produced, researched, shot, and edited mini documentary series on professors’ research in the University of Miami community for the general audience; made and released [4 mini-documentaries](#)
- “Dr. Chris Langdon”, “Dr. Mauro Galetti”, “Dr. Natasa Strbo”, and “Dr. Brian Haus”
- Set up the next leaders of the team to continue producing content into the future

Ocean Explorers Event

Volunteer / April 2022

- Volunteered with my lab peers at the “Dissolving reefs: Ocean acidification and corals” station
- Taught 100 middle to high school students from 2 local schools about the effects of ocean acidification on coral reefs through a hands-on demonstration involving vinegar and bleach to dissolve coral skeletons
- First ever [“Ocean Explorers” Event](#)

The Billfish Foundation (TBF)

Media Specialist, Intern / May 2021 – August 2021

- Developed and produced 2 educational videos for TBF’s social media platforms: “[Who We Are](#)” and “[5 Ways to Improve Billfish Survival](#)”
- Created 2 infographics for TBF to use, share, and distribute
- Reviewed their social media platforms and gave advice on how to improve outreach and education on their social medias (Instagram, YouTube, Twitter, Facebook)
- Assisted for 2 days at the Mid-Atlantic Fishing Tournament (Cape May) to spread awareness about TBF and their mission by talking directly with fishermen and scientists about what they saw, what they are researching, and the future direction of the organization

Education

University of Miami, Rosenstiel School of Marine, Atmospheric, and Earth Science

Master of Professional Science Candidate in Tropical Marine Ecosystem Management

August 2022 - August 2023

- Master’s thesis project title: “Evaluating the impacts of environmental co-stressors and the algal symbiont communities on SCTLTD in the coral *Orbicella faveolata*”
- Working with Dr. Ana Palacio (CIMAS/AOML/NOAA), Dr. Lydia Baker, and Dr. Michael Studivan
- Relevant coursework: Tropical marine microbiomes, Practical data analysis for marine scientists, Advanced topics in the ecology of coastal tropical marine ecosystems, etc.

Bachelor of Science in Marine Science and Biology

August 2018 - May 2022

- Minor: Ecosystem Science and Policy
- GPA: 3.76
- Provost Honor Roll (3 semesters), Dean’s List (6 semesters)
- Member of Rho Rho Rho (Marine and Atmospheric Sciences Honor Society) and Alpha Lambda Delta Honor Society
- “[Phenotypic Adaptability of *Acropora cervicornis* to Possible Future Climate Conditions](#)” : My undergraduate senior thesis for partial completion of departmental honors which focused on looking at different genotypes’ responses to elevated temperatures to understand which genotypes may better cope with the changing climate
- Graduated with Departmental Honors

UGalapagos, Ecuador

August - November 2021

- Spent 4 months living on Isabela Island, Galapagos Islands, Ecuador learning from University of Miami faculty about the islands and volunteering with Intercultural Outreach Initiative (IOI)
- Volunteered to do beach cleanup for 1.5 hours, 2 times/week for 10 weeks
- Took classes on political ecology, geology, physical oceanography, and biology which were all centered on the Galapagos Islands
- Performed various field labs including faunal surveys, geological expeditions, and water

chemistry studies

Skills, Certifications, and Experiences

- 5 years of experience with R
- 2 years using ImageJ
- 1 year with Coral Point Count (CPCe)
- Some experience with MARK (mark-recapture data analysis)
- OnShape CAD
- 1 year with GIS software (ArcPro GIS 2.9)
- 4 years of Adobe Cloud (Photoshop, Premiere, Lightroom, Illustrator, etc.)
- Florida Boating Safety - Florida Fish & Wildlife Conservation Commission (ID - Z00BOATUS1240017)
- Department of the Interior Motorboat Operator Certification Course (completed December 2022)
- Physical Science Responsible Conduct of Research Course 1 - CITI Program (ID - 51527787)
- Plagiarism - CITI Program (ID - 51527788)
- PADI Open Water SCUBA (2018)
- TDI Nitrox Certified (2023)
- AAUS Scientific Diving Certification (May 2023)
- Experienced in research, husbandry, data collection, and analysis through multiple, diverse lab and research groups
- Ability to handle multiple tasks, projects, and problems
- Experience with lab procedures and various fieldwork methods through coursework and lab experiences (e.g., transects and quadrats for surveys, dark/light chambers, microscopy, biological sample handling, chemical handling)
- Proficient in Spanish through 6 years of schooling in Spanish & study abroad in Ecuador/Galapagos Islands
- Grant writing (obtained \$1,500 GSA grant Summer 2022)
- Experienced in multiple channels of science communication (e.g., presented at Rosenstiel Undergraduate Research Symposium, social media, etc.)
- Developed education skills and video-making abilities through class and experiences in documentary production and digital educational media (Produced 4 published mini-documentaries and 2 unpublished)