

Emma Pontes, Ph.D.

Postdoctoral Associate

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Education

- Ph.D. 2024 University of Miami Rosenstiel School of Marine, Atmospheric, and Earth Science
Marine Biology and Ecology
Suffocating Reefs: Investigating the effects of ocean deoxygenation on scleractinian corals
- M.P.S 2017 University of Miami Rosenstiel School of Marine, Atmospheric, and Earth Science
Marine Biology and Ecology, Tropical Marine Ecosystems
Characterization of relative genotypic disease resistance in Caribbean Acropora species
- B.Sc. 2015 University of Miami Rosenstiel School of Marine, Atmospheric, and Earth Science
Double Major: Marine Science & Biology
Minor: Chemistry

Teaching Assistantships

- Fall 2022 Undergraduate Level, Saltwater Semester, Invertebrate Adaptability to Climate Change
Fall 2021 Undergraduate Level, Saltwater Semester, Invertebrate Adaptability to Climate Change
Fall 2020 Graduate Level, Tropical Marine Ecology

Publications

Pontes E, Langdon C, and Al-Horani FA (2023) Caribbean scleractinian corals exhibit highly variable tolerances to acute hypoxia. *Front. Mar. Sci.* 10:1120262. doi: 10.3389/fmars.2023.1120262

Pontes, E; Ormond, R and Rogers, C (editors), (2022, December) An Early Career Perspective. *Reef Encounter*, 37(2), 52-55. <https://doi.org/10.53642/OGHN7156>

Miller MW, Colburn PJ, **Pontes E**, Williams DE, Bright AJ, Serrano XM, Peters EC (2019) Genotypic variation in disease susceptibility among cultured stocks of elkhorn and staghorn corals. *PeerJ*. doi: 10.7717/peerj.6751. PMID: 30993053; PMCID: PMC6459175.

Conference Presentations

- 15th International Coral Reef Symposium, Bremen, Germany (2022, Oral Presentation)
Hypoxia tolerance assessment of multiple scleractinian coral species through the calculation of Critical Oxygen Partial Pressure (PO₂ crit)
- 53rd International Colloquium on Ocean Dynamics, Liege, Belgium (2022, Virtual, Oral Presentation)
Critical Oxygen Partial Pressure (PO₂ Crit) determination of the scleractinian coral Acropora cervicornis

Oral Presentations & Lectures

PhD Defense (2024, Oral Presentation)

Committee Members: Dr. Chris Langdon, Dr. Andrew Baker, Dr. Ian Enochs, Dr. Diego Lirman
Suffocating Reefs: Investigating the effects of ocean deoxygenation on scleractinian corals

Marine Biology and Ecology Departmental Seminar (2024, Oral Presentation)

Can corals catch a breath? Metabolic strategies under chronic hypoxia

Coral Biology and Ecology Course Guest Lecture (2023, Oral Presentation)

Course taught by Dr. Andrew Baker
Hypoxia & Coral Reefs

Marine Biology and Ecology Departmental Seminar (2023, Oral Presentation)

The effect of diel hypoxia on coral metabolism

Invertebrate Adaptability to Climate Change Guest Lecture (2022, Oral Presentation)

Course taught by Dr. Chris Langdon
Introduction to hypoxia

Invertebrate Adaptability to Climate Change Guest Lecture (2022, Oral Presentation)

Course taught by Dr. Chris Langdon
Methods of measuring dissolved oxygen in seawater

Marine Biology and Ecology Departmental Seminar (2022, Oral Presentation)

Suffocating Reefs: Investigating the effects of hypoxia on scleractinian corals

Invertebrate Adaptability to Climate Change Guest Lecture (2021, Oral Presentation)

Course taught by Dr. Chris Langdon
Analyzing corals for signs of stress

Marine Biology and Ecology Departmental Seminar (2021, Oral Presentation)

*Determining the critical PO_2 of *Acropora cervicornis**

Tropical Marine Ecology Guest Lecture (2020, Oral Presentation)

Course taught by Dr. Chris Langdon, Dr. Andrew Baker, and Dr. Diego Lirman
Hypoxia & Ocean Deoxygenation

Marine Biology and Ecology Departmental Seminar (2019, Oral Presentation)

Genotypic variation in disease susceptibility among cultures stocks of elkhorn and staghorn

Research Cruises

2023 *Oxygen Lead*, NOAA A16N Global Ocean Ship-Based Hydrographic Investigations Program Cruise

2018 *Oxygen Lead*, NOAA East Coast Ocean Acidification II Cruise

2017 *Oxygen Lead*, NOAA Gulf of Mexico Ecosystems and Carbon Cycle III Cruise

2017 *DIC and pCO₂ Analyst*, The University of Miami Walton Smith Cruise #17086

2017 *Oxygen Analyst*, NOAA P18 Global Ocean Ship-Based Hydrographic Investigations Program Cruise

Outreach & Volunteering

- 2020 – 2023 *Lab Coach*, Frost Science Museum Integrated Marine Program and College Training
2023 *Podcast Guest*, Ocean Antics, Episode 003: Dissolved Oxygen with Emma Pontes
2019 – 2023 *Station Leader*, Ocean Kids/Explorers, University of Miami Rosenstiel School
2022 – 2023 *Mentor*, Rosenstiel School Graduate Undergraduate Mentor (GUM) Program
2022 & 2023 *Grant Reviewer*, NOAA Ocean Acidification Education Grant Program
2020 *Virtual Tour Guide*, Rosenstiel School Campus Tours
<https://graduate.earth.miami.edu/admissions/visit/virtual-tour/index.html>
2019 – 2021 *President*, Marine Science Graduate Student Organization, Rosenstiel School
2019 *Volunteer*, Women in Science Outreach Event, Rosenstiel School

Awards

- 2024 UMiami Three Minute Thesis, Runner Up
2023 Writing Workshop by Dallas Murphy, Rosenstiel School Graduate Studies Office Sponsorship
2021 Teaching Assistant Excellence Award, Tropical Marine Ecology, Rosenstiel School
2021 Best Student Seminar, Marine Biology and Ecology Department, Rosenstiel School
2017 National Science Foundation Antarctica Service Medal

Certifications

- 2016 AAUS Research Diver Authorization, University of Miami Rosenstiel School
2016 Nitrox Diver Certification
2016 Emergency Oxygen Administration
2016 CPR Certification
2016 Motorboat Operator Certification Course, Department of the Interior
2011 PADI Open Water Certification

Skills

Coral Physiology Measurements

Calcification rate, vertical extension, chlorophyll concentration, lipid concentration, symbiont cell density, total antioxidant capacity, anaerobic enzyme activity, respiration rate, photosynthetic rate

Field Work

AGRRA, roving diver survey, quadrat survey, transect survey, Caribbean fish, coral, and invertebrate identification

Software

R + R Studio, SAS, Microsoft Office Suite, Adobe Suite, Coral Point Count, Pyroscience Suite, Seaterm V2, ImageJ

Water Sampling

Collection of discrete water samples and analysis for: oxygen, dissolved inorganic carbon, total alkalinity, spectrophotometric pH

Infrastructure

Soldering, probe calibration (oxygen, pH, and temperature)