

Allyson DeMerlis

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EDUCATION

2019 – 2024

Doctor of Philosophy in Marine Biology and Ecology

University of Miami Rosenstiel School for Marine, Atmospheric, and Earth Science (Miami, FL)

Advisors: Dr. Ian Enochs (NOAA/AOML) and Dr. Nikki Traylor-Knowles (UM)

Thesis: Molecular mechanisms of enhancing coral resilience to thermal stress

2013 – 2017

Bachelor of Science in Biology

McGill University (Montreal, Quebec, Canada)

RESEARCH EXPERIENCE

Aug 2024 – current

Postdoctoral Research Associate, University of Miami's Cooperative Institute for Marine and Atmospheric Studies | National Oceanic and Atmospheric Administration Atlantic Oceanographic and Meteorological Laboratory (Miami, FL)

Advisors: Dr. Ian Enochs and Dr. Michael Studivan

Aug 2019 – Jul 2024

Graduate Research Assistant, University of Miami Rosenstiel School for Marine, Atmospheric, and Earth Science | National Oceanic and Atmospheric Administration Atlantic Oceanographic and Meteorological Laboratory (Miami, FL)

Project: "Molecular mechanisms of enhancing coral resilience to thermal stress"

Advisors: Dr. Ian Enochs and Dr. Nikki Traylor-Knowles

May – Aug 2019

Research Intern, Mote Marine Laboratory's International Center for Coral Reef Restoration and Research (Summerland Key, FL)

Project: "Optimizing protocol for use of 3D scanner to measure coral growth"

Advisors: Dr. Hanna Koch and Dr. Abigail Clark

Feb – May 2019

Coral Health and Disease Intern, Mote Marine Laboratory's International Center for Coral Reef Restoration and Research (Summerland Key, FL)

Project: "Development of *in-situ* spawning nursery for *Acropora cervicornis*"

Advisors: Dr. Hanna Koch and Dr. Abigail Clark

Jan – Apr 2017

Research Intern, Parque Natural Metropolitano (Panama City, Panama)

Project: "Population assessment and management strategies following introduction of invasive species of freshwater turtle, *Trachemys scripta*"

Advisor: Dr. Javier Mateo-Vega

Jan – Jun 2016 **Research Intern**, Roy Lab at McGill University Department of Biological Sciences (Montreal, Canada)
 Project: “Fatty acids as signaling molecules in lipolysis: Investigating change in lipid abundance in relation to KIN-2 and ATGL-1 activity in *Caenorhabditis elegans*”
 Advisor: Dr. Richard Roy

PROFESSIONAL EXPERIENCE

Sept – Dec 2018 **Marine Conservation Intern**, Reef Environmental Education Foundation (REEF) (Key Largo, FL)
 Supervisor: Ellie Splain

Jan – May 2018 **Essential Fish Habitats Intern**, NOAA Fisheries Pacific Islands Regional Office (Honolulu, HI)
 Supervisor: Ian Lundgren

PEER-REVIEWED PUBLICATIONS

4. Webb AE, Palacio-Castro AM, Cooke K, Eaton KR, Chomitz B, Soderberg N, Chakraborty M, Zagon Z, Boyd A, Kiel PM, **DeMerlis A**, Perry CT, Enochs IC (2024) Rubble persistence under Ocean Acidification threatened by accelerated bioerosion and lower-density coral skeletons. *Global Change Biology*. <https://doi.org/10.1111/gcb.17371>
3. **DeMerlis A**, Kirkland A, Kaufman ML, Mayfield AB, Formel N, Kolodziej G, Manzello DP, Lirman D, Traylor-Knowles N, Enochs IC (2022) Pre-exposure to a variable temperature treatment improves the response of *Acropora cervicornis* to acute thermal stress. *Coral Reefs*. <https://doi.org/10.1007/s00338-022-02232-z>
2. Traylor-Knowles N, Connelly MT, Young BD, Eaton K, Muller EM, Paul VJ, Ushijima B, **DeMerlis A**, Drown MK, Goncalves A, Kron N, Snyder GA, Martin C, Rodriguez K (2021) Gene expression response to stony coral tissue loss disease transmission in *M. cavernosa* and *O. faveolata* from Florida. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2021.681563>
1. Koch HR, Wallace B, **DeMerlis A**, Clark AS, Nowicki RJ (2021) 3D scanning as a tool to measure growth rates of live coral microfragments used for coral reef restoration. *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2021.623645>

GRANTS AND AWARDS

2024 NOAA Oceanic and Atmospheric Research Team Member of the Year
 2024 Evolving Seas RCN MarineOmics Hack-A-Thon (\$500)
 2022 University of Miami Graduate Student Organization Travel Fund (\$500)
 2022 University of Miami Graduate Student Association Academic Excellence Award (\$650)
 2022 Capt. Harry D. Vernon, Jr. Scholarship (\$200)
 2020 David Rowland Fellowship (\$3500)
 2019 Research Experience for Undergraduates Scholarship (\$6000)
 2017 McGill University Dean’s Multidisciplinary Undergraduate Research List

Total funding received = \$11,350

TEACHING ASSISTANTSHIPS

- 2021 Saltwater Semester: Cnidarian Microbiology and Immunology, University of Miami
2020 Marine Biology Laboratory, University of Miami

ORAL PRESENTATIONS

- 2024 (accepted) **DeMerlis A**, Studivan M, Wong K, Snyder G, Isma L, D'Alessandro M, Palacio-Castro A, Lirman D, Traylor-Knowles N, Enochs IC. "Evaluating an ex-situ variable temperature treatment as a stress-hardening technique for reef-building corals." Reef Futures, Riviera Maya, Mexico
- 2024 (accepted) **DeMerlis A**, Studivan M, Besemer N, Jankulak M, Kolodziej G, Boyd A, Soderberg N, Dennison C, Karp R, Baker A, Traylor-Knowles N, Enochs IC. "Life on the edge: Investigating coral resilience in marginal environments." European Coral Reef Symposium, Naples, Italy
- 2023 **DeMerlis A**, Studivan M, Snyder G, Soderberg N, Ehrens D, Isma L, Rosing K, Coscon K, Thomas R, Dvorkin D, Chakraborty M, Kiel P, Babbitz H, Unsworth J, D'Alessandro M, Palacio-Castro A, Lirman D, Traylor-Knowles N, Enochs IC. "Evaluating the efficacy of a variable temperature treatment to stress-harden threatened reef-building corals in Florida." Benthic Ecology Meeting, Miami, Florida
- 2022 **DeMerlis A**, Kirkland A, Kaufman ML, Mayfield AB, Formel N, Kolodziej G, Manzello DP, Lirman D, Traylor-Knowles N, Enochs IC. "Variable temperature treatments alter a coral's response to acute thermal stress." International Coral Reef Symposium, Bremen, Germany
- 2022 **DeMerlis A**, Kirkland A, Kaufman ML, Mayfield AB, Formel N, Kolodziej G, Manzello DP, Lirman D, Traylor-Knowles N, Enochs IC. "Prolonged exposure to a variable, elevated temperature regime as a tool for stress-hardening nursery-raised *Acropora cervicornis*." Reef Futures, Key Largo, Florida
- 2022 **DeMerlis A**, Beasley S, Rodriguez K, Traylor-Knowles N. "Early-hour molecular signatures of wound healing in *Pocillopora damicornis*." Cnidofest, Davis, California
- 2021 **DeMerlis A**, Kirkland A, Kaufman ML, Mayfield AB, Formel N, Kolodziej G, Manzello DP, Lirman D, Traylor-Knowles N, Enochs IC. "Pre-exposure to variable temperature treatments improves the response of *Acropora cervicornis* to acute thermal stress." International Coral Reef Symposium (virtual)

INVITED LECTURES

- 2021–2024 Marine Biology and Ecology Department Seminar at University of Miami Rosenstiel School
- 2022 Biology Course at Yale University
- 2020 Boston University Marine Program
- 2019 Osher Lifelong Institute, University of Miami
- 2019 Mote Marine Laboratory's International Center for Coral Reef Research and Restoration

MENTORING

2022	Katrina Cocson, University of Miami Undergraduate
2022	Katrina Rosing, University of Miami Master of Professional Science
2022	Samantha Beasley, University of Miami Master of Professional Science

PROFESSIONAL SERVICE AND ASSOCIATIONS

Reviewer:	Journal of Experimental Biology, Coral Reefs
Associations:	International Society for Reef Studies

VOLUNTEERING EXPERIENCE

2019 – 2024	Rescue a Reef (Miami, FL)
Aug 2019	Reef Renewal (Bonaire, Caribbean Netherlands)
Nov – Dec 2018	Coral Restoration Foundation (Key Largo, FL)
Sept – Dec 2018	Florida Keys National Marine Sanctuary (Key Largo, FL)
Sept – Dec 2018	PADI (Key Largo, FL)

EDUCATIONAL OUTREACH

2022	University of Miami Rosenstiel School Ocean Explorers event
2022	Scientists For Every School in Florida presentations (virtual)
2021	University of Miami Rosenstiel School Graduate Program Open House (virtual)
2020	University of Miami Rosenstiel School Students for Students presentations (virtual)
2019–2022	Skype a Scientist presentations (virtual)
2019	Mote Marine Laboratory Ocean Fest

CERTIFICATIONS

2023	DAN CFAPro First Aid
2020	Motorboat Operators Certification Course (MOCC)
2020	NOAA Small Boat Component Course
2019	AAUS (American Academy of Underwater Sciences) Diver (Active)
2018	PADI Rescue Diver
2018	PADI Enriched Air Diver
2018	PADI Advanced Open Water Diver
2018	PADI Open Water Certification
2018	FWC Florida Boating Safety Education Identification Card

WORKSHOPS

2023	Dallas Murphy Scientific Writing Workshop
2019	University of Miami Libraries Data Management Workshop

PRESS AND RESEARCH FEATURES

1. [South Florida got a \(small\) break from record heat in June. Don't get used to it.](#) (2024). *Miami Herald*.
2. [Water temps soar in Florida Keys. Can coral reefs stand another bout of extreme heat?](#) (2024). *Miami Herald*.

3. [South Florida waters hit hot tub level and may have set world record for warmest seawater.](#) (2023) *CBS News Miami*.
4. [Threats to coral reefs: Identifying and addressing threats to reef communities.](#) (2023). *National Oceanic and Atmospheric Administration (NOAA)'s Atlantic Oceanographic and Meteorological Laboratory*.
5. [NOAA scientists return to Cheeca Rocks, find reef completely bleached.](#) (2023). *National Oceanic and Atmospheric Administration (NOAA)'s Atlantic Oceanographic and Meteorological Laboratory*.
6. [Florida's rising water temperatures raise concerns for health of coral reefs, scientists say.](#) (2023). *Reuters*.
7. [With 'Mission: Iconic Reefs', NOAA aims to restore Florida Keys with climate-resilient corals.](#) (2023). *NOAA Climate.gov*.
8. [AOML Coral Program demonstrate the importance of teamwork, tackling coral conservation from various angles.](#) (2022). *National Oceanic and Atmospheric Administration (NOAA)'s Atlantic Oceanographic and Meteorological Laboratory*.
9. [Surprise coral rescue mission uncovered during Don't Trash Our Treasure report.](#) (2022). *Local 10 News*.
10. [Coral Rescue at Miami Beach.](#) (2022). *National Oceanic and Atmospheric Administration (NOAA)'s Atlantic Oceanographic and Meteorological Laboratory*.
11. [Corals can be 'trained' to tolerate heat stress, study finds.](#) (2022) *University of Miami Rosenstiel School News*.
12. [Building endurance to beat the heat: New study preps corals for warming waters.](#) (2022) *National Oceanic and Atmospheric Administration (NOAA)'s Atlantic Oceanographic and Meteorological Laboratory*.
13. [New technique shows promise to restore Florida's threatened coral.](#) (2022) *NBC News WFLA Tampa*.
14. [Coral Reef Restoration at Mote Marine Laboratory.](#) (2019) *Nightsea - Bringing fluorescence to light*.

SKILLS

- Scientific Diving, Field Work, Scientific Boating and Surface Support
- Programming Languages: R, Bash, Python (novice)
- Visual Software: Adobe Illustrator, Adobe Photoshop, Flourish, Tableau
- Image Software: ImageJ, FlexScan3D
- Data Software: Microsoft Office Suite (Excel), RStudio
- Laboratory Techniques: DNA and RNA extractions, cDNA library preparation, qRT-PCR, FACS
- Animal Husbandry