

# Nicole Besemer

NOAA Atlantic Oceanographic Meteorological Laboratory  
AOML Coral Program

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## Education

East Stroudsburg University of Pennsylvania, East Stroudsburg, PA  
B.S. in Marine Science and Biology

May 2013

University of Miami, Rosenstiel School of Marine and Atmospheric Science, Miami, FL  
Masters of Professional Science in Tropical Marine Ecosystem Management

December 2017

## Professional Experience

NOAA Atlantic Oceanographic Meteorological Laboratory

*Oceanographer* - AOML Coral Program

April 2022 – Present

Caribbean Climate Operations Coordinator for NCRMP Climate Monitoring

- Project manager for National Coral Reef Monitoring Program (NCRMP)'s Climate Pillar throughout the Atlantic and Caribbean basin including managing and overseeing field operations, planning field logistics, scheduling field personnel, ensuring proper permits are obtained, confirming availability and refurbishment of instrumentation, pack and procure equipment, manage large contracts (e.g., ship time, buoy refurbishment), and arranging travel.
- Budget planning and managing of funds allocated for NCRMP as well as serve as the purchase card holder for AOML Coral Program, maintain lab purchasing logs
- Primary Captain and Lead diver for all NCRMP related field operations, facilitate other lab related field activities
- Implementation of climate monitoring survey methodologies including carbonate budget reef surveys and collection of landscape mosaics.
- Data entry and database management of a long-term dataset
- Coordination and implementation of training for new employees, graduate students and interns
- Production of field reports following each major field operations
- Serve as back up Vessel Operation Coordinator including approving float plans for field operations, facilitate vessel maintenance, and facilitate qualified crew member training
- Serve as lab safety POC for AOML Coral program

University of Miami – NOAA Affiliate at the Atlantic Oceanographic and Meteorological Laboratory

*Senior Research Associate I* with AOML Coral Program

August 2019 – April 2022

Caribbean Climate Operations Coordinator for NCRMP Climate Monitoring

- Plan and coordinate and implement long term monitoring research trips in support of the National Coral Reef Monitoring Program (NCRMP)'s Climate Pillar throughout the Atlantic and Caribbean basin
- Trailering and operation of small boats as primary captain for local field operations at long term monitoring sites as well as working with partners and collaborators to support charters and supply gear and instrument needs
- Installation and removal of climate monitoring instruments including Seabird SBE 52 temperature sensors, SeaFET pH sensors, Bioerosion monitoring units, Calcification accretion units, Tiltmeter current sensors and EcoPar light sensors
- Implementation of climate monitoring survey methodologies including carbonate budget reef surveys and collection of landscape mosaics.
- Working knowledge of CT scanning and analysis of coral growth and erosion metrics using Thermo Scientific Amira software.

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University of Miami – NOAA Affiliate at the Southeast Fisheries Science Center

Senior Research Associate I in the Lab of Dr. Joan Browder

May 2017- August 2019

Lab Coordinator for IBBEAM Epifauna Monitoring

- Field and lab technician for bi-annual throw trap sampling to determine estuarine faunal abundance and species composition
- Plan and coordinate field work trips including trailering and operate small boats as primary captain for bi-season sampling and other field work requests
- Responsible for sample sorting and processing as well as identifying South Florida nearshore epifauna, including small fish, reef fish, Farfantepenaeid shrimp, caridean shrimp, crabs, and echinoderms, as well as seagrasses and macroalgae
- Data entry and database management of a long-term dataset spanning 15+years
- Coordination and implementation of training for temporary employees, graduate students and interns

National Park Service – Buck Island Reef National Monument – Christiansted, St. Croix

*Biological Science Technician*

July – December 2016

Field Leader at Buck Island Reef National Monument in St. Croix for the 28<sup>th</sup> year of the Buck Island Sea Turtle Research Project.

- Worked as a member of the resource management team on marine and terrestrial field projects
- Managed a nocturnal schedule for 4 interns and myself working 12-hour nights in strenuous conditions collecting information on endangered nesting sea turtles
- Participated in annual terrestrial monitoring efforts including brown pelican nesting surveys, invasive plant removal, St Croix ground lizard surveys, annual rat trapping, trail maintenance, and habitat restoration
- Conducted maintenance, data upload, installation and recovery of 150-Vemco receiver acoustic array system within a marine protected area

National Park Service – Biscayne National Park – Homestead, FL

*Intern*

July - December 2015

- Removal of invasive lionfish and implementation of ongoing studies
- Gave demonstrations to various sized audiences on lionfish information and dissections
- Removal and processing of otoliths for bony fish species
- Accumulated over 70 hours in small boat operation and competent use of GPS technology for navigation
- Endangered species monitoring including sea turtles, shorebirds, and corals and demonstrated procedures to volunteers

Pangaea Exploration – Miami, FL

*Deckhand*

November 2013 – November 2014

The Billfish Foundation – Ft. Lauderdale, FL

*Intern*

July 2013 – November 2013

## Awards

- University of Miami CIMAS Awards Program for Field Work Completed during global pandemic – March 2021
- 2021 Hermes Creative Platinum Award for Outstanding TV Placements and Outstanding Overall Publicity Campaign from the Association of Marketing and Communication Professionals in recognition of the media impact of NOAA's Coral Reef Condition Status Report, with more than 521 million impressions with coverage in 46 states, plus Washington, DC, for the coral reef status report press event.
- Cash-in-Your-Account Awards - 2022 (1), 2023 (3)
- NOAA Employee of the Month February 2023

# Nicole Besemer

## Community Engagement and Mentorship

- Member of AOML Diversity Inclusion and You! Group to promote DIEA initiatives at NOAA AOML
- Member of Women of OCED community group
- Peer mentor for OCED mentorship program
- Lead steering committee member for the planning of the OCED Community Day Event

## Outreach

- Skype a Scientist Virtual Sessions – 2021, 2022, 2023
- MacArthur Summer Beach Camp Speaker - 2022 and 2023
- ANGARI Foundation Outreach video (2022) - [Monitoring Reefs in the Dry Tortugas | NOAA & CIMAS | Expedition 39](#)
- NOAA AOML Website - <https://www.aoml.noaa.gov/ncrmp/>

## Publications

- Palacio-Castro AM, Enochs IC, **Besemer N**, Boyd A, Jankulak M, Kolodziej G, Hirsh HK, Webb AE, Towle EK, Kelble C, Smith I, Manzello DP (In review) Carbonate system along the Florida Coral Reef: Interannual trends, seasonality, and spatial variation. *Global Biogeochemical Cycles*.
- Johnston, M. A., Studivan, M. S., Enochs, I. C., Correa, A., **Besemer, N.**, Eckert, R. J., ... & Voss, J. D. (2023). Coral disease outbreak at the remote Flower Garden Banks, Gulf of Mexico. *Frontiers in Marine Science*, 10, 100.
- Webb, A. E., Enochs, I. C., van Hooidonk, R., van Westen, R. M., **Besemer, N.**, Kolodziej, G., ... & Manzello, D. P. (2023). Restoration and coral adaptation delay, but do not prevent, climate-driven reef framework erosion of an inshore site in the Florida Keys. *Scientific Reports*, 13(1), 258.
- Morris, J. T., Enochs, I. C., **Besemer, N.**, Viehman, T. S., Groves, S. H., Blondeau, J., ... & Manzello, D. P. (2022). Low net carbonate accretion characterizes Florida's coral reef. *Scientific Reports*, 12(1), 19582.
- Manzello, D. P., Kolodziej, G., Kirkland, A., **Besemer, N.**, & Enochs, I. C. (2021). Increasing coral calcification in *Orbicella faveolata* and *Pseudodiploria strigosa* at Flower Garden Banks, Gulf of Mexico. *Coral Reefs*, 1-15.
- Donovan, C., Towle, E. K., Kelsey, H., Allen, M., Barkley, H., **Besemer, N.**, ... & Viehman, S. (2020). Coral reef condition: A status report for US coral reefs.
- **Besemer, N.I.**, Zink, I.C., Jobert, H., Browder, J.A., Lirman, D., Stabenau, E.R.,. *Immediate pre- and post- hurricane Irma impact on near shore epifauna communities and their habitat*. Manuscript in preparation.
- Afshar, M., Hillbrand, P., Code, T., **Besemer, N.**, Pollock, C., Hillis-Starr, Z. (2016). Buck Island Sea Turtle Research Program: Data Summary (distributed to USVI territorial government, USFWS, and USGS partners)

## Presentations

- AOML Open House Virtual Speaker – April 2021
- AOML Ocean Research Collaborative Series Virtual Speaker – October 2020
- “Immediate pre- and post- hurricane impact on nearshore epifaunal communities and their habitat” - Southeastern Ecology and Evolution Conference. University of Miami, Miami, FL, October 2018
- “Integrated Biscayne Bay Ecological Assessment and Monitoring (IBBEAM): 6 Years of Everglades Restoration Impacts on the Nearshore Ecosystem” - Greater Everglades Ecosystem Restoration Conference. Miami, FL, April 2019

## Reports

- [NCRMP Dry Tortugas Field Report - 2021](#)
- [NCRMP St. Croix Field Report - 2022](#)
- [NCRMP Flower Garden Banks Field Report - 2022](#)