

EDUCATION

University of Rhode Island, Kingston, RI
Bachelor of Science in Marine Biology

Sept 2017 – May 2020
GPA: 3.56

WORK EXPERIENCE

Florida Atlantic University Harbor Branch Oceanographic Institute
Supervisor: Dr. Joshua Voss

May 2023 – Present

Coral Research Technician

- Participates in field related projects which include scientific cruises, small vessel operations, and scientific diving
- Conducts sample processing, data entry, data/image analyses, and database management related to coral research projects
- Performs molecular laboratory benchwork, including extraction, amplification, sequencing and analyses of DNA

University of Texas at Austin Marine Science Institute
Mission-Aransas National Estuarine Research Reserve

April 2022 – April 2023

System-Wide Monitoring Program Technician

- Planned, prepped and led bi-weekly boat operations to deploy multiparameter water quality sondes, take water samples, record water column profiles, collect meteorological data, and perform equipment maintenance/platform repairs at fixed monitoring stations
- Processed and analyzed water samples for chlorophyll *a*, nutrients, and total suspended solids
- Reviewed long-term water quality, meteorological, and nutrient data for authentication and public availability

University of Texas at Austin Marine Science Institute
Supervisors: Dr. Jordan Casey, Dr. Simon Brandl, Dr. Kristin Nielsen

July 2021 – April 2022

Research Technician / Lab Coordinator

- Assisted with fieldwork, laboratory experiments, and literature reviews
- Organized and maintained lab spaces and scientific equipment
- Managed lab inventories, acquisitions, and expenses
- Wrote laboratory safety and animal care SOPs and ensured lab compliance

Saltwater Inc.

Aug 2020 – May 2021

Supervisor: Stacey Hansen

North Pacific Groundfish Observer

- Recorded fishing effort and biological data independently or as a team in real-time through the random sampling of catch
- Maintained detailed and organized data records, sample collection methods and field notes within a daily logbook
- Built rapport with fishers to sustain healthy working relationships between industry and fishery managers

RESEARCH EXPERIENCE

Florida Atlantic University, Connectivity of Coral Ecosystems (CYCLE) Project Cruise May 2023
Flower Garden Banks National Marine Sanctuary, M/V Manta, led by Dr. Joshua Voss

Coral Research Biologist

- Prepared sampling equipment for dive operations
- Monitored deck and personnel safety and participated in active safety training
- Processed and preserved coral fragments for population genetic analyses
- Performed daily data entry tasks

University of Rhode Island, URI Winter in Bonaire Jan 2020
Supervisor: Dr. Graham Forrester

Student Researcher

- Quantified metrics of coral reef community structure using diver-based survey methods
- Synthesized reef community composition data and long-term patterns of percent coral coverage into a technical report
- Engaged with local residents and officials of the National Parks Bonaire Foundation (STINAPA) about the ecological, cultural, and socioeconomic value of the island's reefs

University of Rhode Island, Coastal and Environmental Fellowship Program July 2019 – Dec 2020
Advisor: Dr. Graham Forrester

Research Fellow

- Executed diver-based collections of parasitized and non-parasitized sand gobies on patch reefs in the British Virgin Islands
- Applied DNA barcoding and morphological identification methods to clarify species identities in a cryptic host-parasite interaction
- Presented preliminary findings at a university poster symposium and co-authored a peer-reviewed publication

SERVICE & OUTREACH

Wildlife Conservation Society, Bronx Zoo May 2018 – Aug 2018

Seasonal Education Specialist

- Coordinated with education team to engage a diverse community of visitors through organized interactive activities that promote environmental awareness and stewardship
- Mentored local high school students participating in science education and outreach programs

TECHNICAL SKILLS

Field: Small vessel operation and trailering; marine water quality and eDNA monitoring; diver-based collection and survey methods; plankton tows; Van Dorn bottle sampling; sediment coring; YSI sonde calibration, use and maintenance; satellite telemetry and data logging equipment troubleshooting

Laboratory: DNA extraction; PCR; gel electrophoresis; Nanodrop; Qubit; DNA amplicon library prep and analysis; marine water sample filtration and analysis (chlorophyll *a* fluorometry, dissolved inorganic nutrient, and total suspended solids analyses); microscopy and microscopy imaging; saltwater aquaria maintenance; fish husbandry and dissection

Computer: Windows OS; Microsoft Office Suite; Adobe Creative Cloud; R Studio; YSI Kor; ImageJ; Geneious; NCBI GenBank & BLASTn; Barcode of Life Database (BOLD)

CERTIFICATIONS

BoatU.S. Foundation Florida Boating Safety Education Certificate	2023
BoatU.S. Foundation Texas Boating Safety Education Certificate	2022
PADI Rescue Diver	2021
DAN Emergency Oxygen for Scuba Diving Injuries	2021
DAN Basic Life Support: CPR and First Aid Provider	2021
AAUS Scientific Diver	2019
SDI Computer Nitrox Diver	2019
SDI Advanced Open Water Diver	2018
SDI Open Water Diver	2018

PUBLICATIONS & PRESENTATIONS

Forrester, G. E., **McCaffrey, M. T.**, Terpis, K. X., & Lane, C. E. (2021). Using DNA barcoding to identify host-parasite interactions between cryptic species of goby (*Coryphopterus*: Gobiidae, Perciformes) and parasitic copepods (*Pharodes tortugensis*: Chondracanthidae, Cyclopoida). *Zootaxa*, 5048(1), 99–117. <https://doi.org/10.11646/zootaxa.5048.1.5>.

McCaffrey, M.T. “Larval biology of Buccinoid gastropods (Neogastropoda: Buccinoidea).” Oral presentation for *Marine larval ecology* course. March 2020.

McCaffrey, M.T. “Comparing long term changes in shallow reef community composition and coral coverage on Bonaire.” Oral presentation at URI Winter in Bonaire. January 2020.

McCaffrey, M.T. “DNA barcoding clarifies species identities in a Caribbean host-parasite interaction and verifies field identification of host species.” Poster presentation at URI Undergraduate Research Symposium. December 2019.