

EDUCATION

Ph.D., Environmental Biology, expected graduation: December 2025
University of Massachusetts Boston, Boston, MA

M.Sc., Biology, focus in Ecology: Jan 2017
San Diego State University, San Diego, CA

B.Sc., Aquatic and Fishery Science, focus in Aquatic Ecology: Jun 2008
University of Washington, Seattle, WA

INTERNSHIP

Reef Environmental Education Foundation (REEF), Washington Sea Grant, Seattle, WA
Marine Conservation Intern: Nov 2006 - Jul 2007

WORK EXPERIENCE

Berklee College of Music, Boston, MA.

Hours per week: 15+

Assistant Professor: Sep 2023 – Present

- Develop curriculum and teach two sections of 3 credit Oceanography for Berklee's Department of Liberal Arts and Sciences each Fall and Spring Semester
- Develop curriculum and teach two sections of 3 credit Environmental Science for Berklee's Department of Liberal Arts and Sciences each Fall and Spring Semester.

University of Massachusetts Boston, Boston, MA.

Hours per week: 20+

PhD Candidate: Sep 2015 – Present

- Researching how the rapidly warming Gulf of Maine is affecting rocky subtidal community structure, biodiversity, and ecosystem functioning.
- Collect/process/preserve live marine specimens using a variety of sampling techniques.
- Analyze oceanographic, observational, and experimental data using the R programming language.
- Manage all aspects of 4 concurrent research projects including budgeting from grant-based funding sources, supervising research assistants, travel/field work logistics, emergency management plans, and specialized equipment design and construction.

Research Assistant: Jan 2020 – Aug 2023

- Provide logistical and field support for biodiversity surveys with the Stone Living Lab.
- Lead biodiversity surveys in the rocky intertidal and subtidal zone throughout Boston Harbor Islands.
- Train field assistants in safety protocols, species identification, surveying methods, data management and analyses.

Shoals Marine Laboratory Underwater Research Teaching Assistant: Jul 2022

- Collect organisms for AAUS student's identification skills and study sessions prior to field exam.
- Lead AAUS Student divers through skills, and on tours.
- Supervise AAUS student divers during diving labs and underwater identification exam.

Acting Diving Safety Officer: Jul 2021 – Jun 2022

- Oversee University of Massachusetts Boston diving program policies, standards, and regulations for research diving.
- Maintain diving records for all scientific divers at University of Massachusetts Boston.
- Ensure University of Massachusetts Boston diving program safety and compliance with OSHA Scientific Diving Exemptions.

Teaching Assistant: Jan 2016 – December 2019

- Introductory Biology Laboratory (Spring Semesters)
- Marine Invertebrate Zoology Laboratory (Fall Semesters)

Kelp Ecosystem Ecology Network Research Assistant: Sep 2015 - Dec 2017

- Facilitate, lead, and instruct university-based dive teams around New England in identification of kelp-forest associated species and network-wide standardized subtidal sampling protocols for the global Kelp Ecosystem Ecology Network (KEEN).

San Diego State University, San Diego, CA

Hours per week: 40+

M.Sc., Candidate: Aug 2011 - Jan 2017

- Researched how recruitment density affects the survival of juvenile giant kelp (*Macrocystis pyrifera*) at three size classes (Microscopic, 5-20cm, >1m).

Coastal and Marine Institute Laboratory, Lab Manager: May 2012 - Aug 2014

- Managed the daily operations of San Diego State University's Coastal and Marine Institute Laboratory under the supervision of Director, Dr. Todd Anderson.

Marine Collector Assistant: Jan 2012 - May 2012

- Accompanied San Diego State University's Marine Collector, Constance Gramlich, on weekly specimen collection dives to supply organisms as needed for undergraduate and graduate courses at SDSU.

Teaching Assistant: Aug 2011 - Jan 2012

- Introductory Biology Laboratory (Fall Semester)

University of Washington Friday Harbor Laboratories

Hours per week: 30-40

Assistant Diving Safety Officer: May 2011- Aug 2011

- Oversaw all diving operations at the Friday Harbor Laboratories under the supervision of the University of Washington's primary Diving Safety Officer.

Research Technologist: Aug 2008 - Jun 2011

- Assisted with subtidal data collection on Dr. Kenneth Sebens' long-term rocky subtidal monitoring projects in Nahant, MA and San Juan Island, WA.
- Analyzed photos and processed thermal data.
- Logged 278 scientific dives with this position over 3 years.

Washington State Department of Fish and Wildlife.

Hours per week: 10

Scientific Technician 2: Feb 2011 - May 2011

- Assist WDFW's Groundfish team lead by Dr. Robert Pacunski with 24-hour ROV video trawls in San Juan Channel on the R/V Molluscan.
- Identify to species and count all fish encountered on video transects.

Washington Sea Grant, Seattle, WA

Hours per week: 20

Student Assistant: Aug 2008 - Sep 2008

- Organized meeting logistics and planned activities for the National Sea Grant Conference hosted by Washington Sea Grant in 2008.

Bubbles Below - The Scuba Professionals, Woodinville, WA

Hours per week: 20

Assistant Manager: Apr 2003 - Sep 2008

- Conduct daily retail operations including sales, rentals, class scheduling, tank filling, and basic equipment servicing.

PUBLICATIONS

McCollum, B.A. 2017. Return of the Mac: how density affects the survival of juvenile giant kelp (*Macrocystis pyrifera*) in the Point Loma kelp forest, San Diego, CA. San Diego State University. Montezuma Publishing.

McCollum, B.A. 2007. Consumer Perspectives on the 'Web of Causality' Within the Marine Aquarium Fish Trade. SPC Live Reef Fish Information Bulletin. 17: 20-30.

SELECTED PRESENTATIONS

International Temperate Reef Symposium, Brest, France July 2025 "Which species on sublittoral rock walls in the Gulf of Maine are sensitive to increasing ocean temperatures?"

Benthic Ecology Meeting, Portsmouth, NH April 2022 "It takes more than a little hot water to induce stress eating in green sea urchins"

Benthic Ecology Meeting, St. Johns, Newfoundland, CAN April 2019 "The Metabolic response of green sea urchins (*Strongylocentrotus droebachensis*) to marine heat waves"

Boston Sea Rovers, Danvers, MA March 2019 "Climate Change Effects on Kelp Forests in New England"

Western Society of Naturalists, Tacoma, WA November 2014 "The effect of recruitment density on the survival of juvenile giant kelp (*Macrocystis pyrifera*)"

International Phycological Congress, Orlando, FL August 2013 "Return of the Mac: Differential survival among early life history-stages and young recruits of *Macrocystis pyrifera*"

Western Society of Naturalists, Monterey Bay, CA November 2009 "Community Structure and Dynamics in Rocky Subtidal Marine Preserves, San Juan Islands, Washington"

Marine Ornamentals '06 Las Vegas, NV, February 2006 "Consumer Perspectives on the 'Web of Causality' within the Marine Aquarium Fish Trade"

AWARDS

- Women Divers Hall of Fame Graduate Scholarship in Marine Conservation: 2018 Breck A. McCollum

COMMITTEES

- University of Massachusetts Boston Diving Safety Board, Graduate Student Representative: 2019 – 2024
- University of Massachusetts Boston Diving Safety Board, Acting DSO: 2021 – 2022
- Western Society of Naturalists, Student Committee: 2015-2017

CERTIFICATIONS

- CPR/First Aid/AED/DAN O2 Provider: 2003-Present
- Massachusetts Class D license: 2016
- PADI Divemaster #289238: 2011
- Washington State Boater Education Card: 2009
- AAUS Scientific Diver: 2008
- PADI Enriched Air/Nitrox: 2008
- PADI Rescue Diver: 2003
- PADI Advanced Open Water: 2003
- PADI Open Water: 2003