

Curriculum Vitae - Ilana R. Jacobs

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Social Media

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EDUCATION

<u>Institution</u>	<u>Major</u>	<u>Degree, Year</u>
Boston University, Boston, MA	Marine Science	BA, 2025

POSITIONS

- 2023- Present **Undergraduate Researcher; Boston University; Boston, MA**
Honors thesis; Research on coastal and marine biogeochemistry in Dr. Robinson W. (Wally) Fulweiler's lab.
- Design, run, and analyze nitrogen cycling experiments in passive cold seep sediment samples from the US Atlantic Margin and in salt marsh aggregates
 - Write Standard Operating Procedures (SOPs)
 - Supervise and mentor undergraduate laboratory interns
 - Complete in-situ field experiments for lab analysis
- 2023 **Teaching Assistant; Marine Biological Laboratory; Woods Hole, MA**
Microbial Diversity Advanced Research Training Course.
- Molecular lab research facilitator
 - Culture maintenance and management
 - Field work, collection, and planning at multiple sites for 20+ mini projects
- 2023 **Cephalopod Mariculture Technician; Marine Biological Laboratory; Woods Hole, MA**
Cephalopod care, mariculture, and research.
- Animal feeding, life support, maintenance, and mating
 - Field collection for live food
 - Detailed record keeping and data collection
- 2022- 2023 **Guest Student; Woods Hole Oceanographic Institution; Woods Hole, MA**
Joint Appointment with Dr. Virginia Edgcomb, Dr. Fatma Gomaa, and Dr. Colleen Cavanaugh.
- Developed protocols to study the function of Mitochondrial Related Organelles and the metabolic interdependency between ciliate host *Heterometopus palaeformis* and endosymbionts via CRISPR/Cas9 gene editing

- 2022- 2023 **Research Assistant; Harvard University; Cambridge, MA**
Joint Appointment with Dr. Virginia Edgcomb, Dr. Fatma Gomaa, and Dr. Colleen Cavanaugh.
- Developed protocols to study the function of Mitochondrial Related Organelles and the metabolic interdependency between ciliate host *Heterometopus palaeformis* and endosymbionts via CRISPR/Cas9 gene editing
- 2022- Present **Discovery Center Associate, Woods Hole Oceanographic Institution; Woods Hole, MA**
Liaison to Woods Hole tourists and WHOI community members.
- Guide individuals through exhibits and answer research-related questions
 - Organize and maintain WHOI store items, pack online orders
 - Friendly customer support
- 2022- Present **Naturalist; Zephyr Education Foundation; Woods Hole, MA**
Ship- and wet lab- based naturalist for educational trips.
- Lead deployment of plankton tows, benthic specimen dredges, underwater camera, and other oceanographic equipment
 - Identify and discuss specimens such as sea urchins, fish, sea stars, varieties of crabs and sponges, assorted worms, mollusks, crustaceans, and echinoderms roles on the New England coast and their uses in laboratories in Woods Hole
- 2022 **Lead Teaching Assistant, Children's School of Science; Woods Hole, MA**
Leadership based mentor to new faculty and teaching assistants.
- Mentored new teaching assistants about general CSS responsibilities and the CSS team-oriented education style
 - Coordinated and oversaw annual events, school set up and cleanup, and day to day school activities
 - Managed and posted on social media accounts for community outreach
- 2022 **Course Assistant I, Marine Biological Laboratory; Woods Hole, MA**
Coordinated and supervised lab and extracurricular activities in 8-week Neural Systems and Behavior Advanced Research Training Course.
- Oversaw chemical inventory, ordering, solution making, and lab upkeep for over 50 staff and students
 - Budgeted and coordinated boat trips, course activities and general supplies
 - Liaison between students, guest faculty, course manager, and course directors
- 2021- 2023 **Server, The Casual Gourmet; Centerville, MA**
Prepared and served at weddings, private events, etc. with a gracious, attentive, and courteous demeanor.
- Set up event tables prior to event, prepared and passed hors d'oeuvres, served dinner and dessert, cleaned up and packed truck at end of event
 - Efficiently cleared tables with plates, glasses, and cutlery to ensure guest satisfaction throughout events

- 2020- 2021 **Shift Manager, Sweet Cow Ice Cream; Denver, CO**
Managed shifts and upheld shop expectations daily, effective problem solver and leader.
- Consistently coached and assessed 20-40 staff members to encourage growth and learning for scoopers
 - Managed crises to ensure quality of product and service
 - Trained new scoopers to maintain high standards and ensure shop protocols are maintained
 - Nurtured open line of communication between scoopers and management team
 - Maintained cleanliness and order in the shop and truck
 - Memorized ingredients and preparation of over 120 menu items, serving 200-500 customers daily
- 2019-2021 **Teaching Assistant, Children's School of Science; Woods Hole, MA**
Teaching assistant in Black and White Film Photography, Chemical Oceanography, Physical Oceanography, Seashore Life, Marine Biology, Advanced Marine Biology, Animal Behavior and Woods Ponds and Fields courses.
- Tank care and animal husbandry
 - Upheld time management and awareness while on field trips
 - Set up course activities and cleaned up after classes
 - Handled student discipline issues in the classroom and on field trips
- 2018-2021 **High School Intern, Marine Biological Laboratory; Woods Hole, MA**
Research Intern under the supervision of Dr. Kristin Gribble.
- Conducted molecular biology procedures including DNA extraction, PCR, ATP assays, Protein Gels, and microscopy
 - Gained proficiency in Tracker software and experience with Terminal
 - Worked on multiple projects including DNA extraction from tunicates, phototaxis in rotifers, maternal effects project, and swimming speed analysis with rotifers in an anti-aging therapies study
- 2018-2019 **Tour Guide, Woods Hole Business Association; Woods Hole, MA**
Gave 1 hour walking tours through the village of Woods Hole twice a day on weekends to groups of tourists and families.
- Gained expertise in the History of Woods Hole, MA
 - Managed and educated large groups of people of different ages and backgrounds
 - Wrote and memorized tour script and locations of stops
 - Trained additional tour guides in response to tour popularity

SKILLS

Field and Lab Skills

C-OPS, Cell Culture, Chemical Ordering, CRISPR-Cas9, CTD Rosette, DNA Extraction, GF/F Filtration, Hach Probe Calibration, LISST, Media Preparations, Membrane Inlet Mass Spectrometry (MIMS), Microscopy, N/P analysis, PCR, Pole Coring, Push Coring, Small Craft Operations, Trawls, Underwater Camera, Underwater Specimen Collection (snorkeling), Water Quality Analysis, YSI

Software Skills

ArcGISPro, Google Suite, HOBOWare, MatLAB, Microsoft Suite (Excel, Word, PowerPoint), R, RStudio, SeaDAS, ZEN (Zeiss microscopy)

RELEVANT COURSEWORK

** Indicates field-based course.*

EE 562	<i>Tropical Seagrasses: Biology, Ecology, and Conservation*</i>
BI 578	<i>Marine Geographical Information Systems (ArcGIS)</i>
EE 591	<i>Bio-Optical Oceanography*</i>
MR 291/2, 391/2	<i>Independent Undergraduate Research* (Directed Study)</i>
CH 101/2	<i>General Chemistry I, II</i>
EE 144	<i>Oceanography</i>
BI 260	<i>Marine Biology</i>
EE 423	<i>Marine Biogeochemistry</i>
BI 107	<i>Principles of Biology</i>
SE 250	<i>Disability, Education, and Public Policy</i>
MA 121	<i>Calculus I</i>
MA 115	<i>Statistics I</i>

RESEARCH/PUBLICATIONS

Technical Reports

Jacobs, I.R., Argentieri, J., Layne, N., Westwood, J., Scavo, K., Novak, A. (2023). Assessing Environmental Parameters in Seagrass Meadows at an Impacted and Reference Site on Turneffe Atoll, Belize. Belize Fisheries Department (Belize). *Submitted November 2023.*

Presentations

Jacobs, I.R. (2023). Risk Assessment of Plastics: Pathways Into the Food Supply. *Marine Geographic Information Systems Colloquium, BU Marine Program, 20 Minute Talk.*

Jacobs, I.R., Argentieri, J., Layne, N., Westwood, J. (2023). Assessing Environmental Parameters in Seagrass Meadows at an Impacted and Reference Site on Turneffe Atoll, Belize. *BU Marine Program, Turneffe Atoll Sustainability Association (TASA), 20 Minute Talk.*

Jacobs, I.R., Park M., & Whittington, A., Harringmeyer, J., Fichot, C. (2023). Carbon Dynamics in the Gulf of Maine: Variance with Precipitation. *BU Marine Program, 30 Minute Talk.*

Jacobs, I.R., Goma, F., Beinart, R., Pachiadaki, M., Rotterova, J., Cavanaugh C.M., Edgcomb, V. (2023). Toward Application of CRISPR-Cas9 for Understanding the Role of the Mitochondrial Related Organelle in Anaerobic Ciliates. *NEMPET 2023, Poster.*

Cruises: Research and Training

Woods Hole/Buzzards Bay: Educator and Naturalist, Zephyr Education Foundation
The Islander: Patriot Party Boats, Falmouth MA, Teaching, 2022-2023 (16 Days)

Plum Island Ecosystems LTER, Bio Optical Oceanography
Small Boats, Training, 2023 (1 Day)

Narragansett Bay: Long Term N-Fixation, Fulweiler Lab
URI Maritime Skiff 20P, Research, 2023 (3 Days)

Gulf of Maine: Wilkinson Basin, Bio-Optical Oceanography
UNH Gulf Challenger, Training, 2023 (2 days)

Fieldwork: Research and Training

Turneffe Atoll, Belize, C.A.: Tropical Seagrass Ecology and Conservation
Calabash Caye Field Station, Research and Training, 2023 (13 Days)

Narragansett Bay National Estuarine Research Reserve: Fulweiler Lab
Research, 2023 (1 Day)

Narragansett Bay, Rhode Island: Fulweiler Lab
Research, 2023 (2 Days)

Sippewissett Salt Marsh, Massachusetts: Fulweiler Lab, Marine Biological Laboratory
Research and Training, 2023 (6 Days)

AWARDS/HONORS

- 2023 Dean's List, Boston University- *exceeded GPA requirement of 3.5 with a 4.0 GPA.*
- 2023 Penzance Award, Woods Hole Oceanographic Institution – *"Sustained exceptional performance, for outstanding representation of the WHOI spirit, and for major contributions to the personal and professional lives of our staff."* (\$250)
- 2023 Provost's Scholars Award for Academic Exploration, Boston University- *"Celebrates the achievements of students who push beyond what they already know they can do, and to take significant risk by pursuing the unknown and unpredictable."* (\$1000)
- 2023 Edward R. Leadbetter Memorial Scholarship, NEMPET- *initiative, merit, and need based scholarship.* (\$625)
- 2022 Dean's List, Boston University- *exceeded GPA requirement of 3.5 with a 3.84 GPA.*
- 2021 Allan and Helena Striker Scholarship, Denver Jewish Day School- *merit based STEM scholarship* (\$2500)
- 2020 Bryan M. Hay Chesed Award, Denver Jewish Day School- *merit based community service award* (\$1000)
- 2017 First Place, Denver Metro Regional Science and Engineering Fair, Behavioral Sciences, Junior Division

LISCENCES AND CERTIFICATIONS

Open Water Diver, PADI, Issued Sep. 2022
Boater Safety, Massachusetts, Issued May 2023
First Aid and CPR, American Red Cross, Issued June 2019, 2021, 2023

SOCIETIES

American Geophysical Union (AGU), Association for the Sciences of Limnology and Oceanography (ASLO), Boston University Geological Society (BUGS), Boston University Marine Science Association (MSA)

VOLUNTEERING AND OUTREACH

- 2023-Present **International Peer Mentor; Boston University**
- Meet with international students throughout their first semester at BU
 - Share academic resources, clubs, and social events to help students feel welcome at BU in a new country.
- 2023-Present **Treasurer, Humans United Giving Support; Boston University**
- Manage accounts of over \$1000 and budget events for Humans United Giving Support (HUGS) club
 - Plan and execute 8+ events per semester with 10+ attendees
- 2023 **Educator, Resilient Woods Hole, Science Stroll; Woods Hole, MA**
- Communicate and Educate 2,000+ individuals about Resilient Woods Hole's mission and key impacts.
 - Discuss the impact of climate change and coastal resilience in Woods Hole.
- 2023-Present **Educator, The Urban Garden Initiative; Boston University, Boston, MA**
- Mentor students and lead events at a local school about urban gardening, environmental justice, and sustainability.
 - Build urban gardens with students at their school and use kits to make smaller ones they can implement at home.
- 2017-Present **Ski Instructor, National Sports Center for the Disabled; Winter Park, CO**
- Provide educational skiing adventures to students with a wide array of physical and cognitive abilities
 - Gained authorization and expertise in the use of various adaptive ski equipment at the NSCD
 - Use problem solving skills to personalize each lesson and allow students to gain independence and confidence in their abilities
- 2007-2021 **Outdoor Recreation Programs; Rocky Mountains, CO**
Build and maintain trails with government and non-profit organizations including Bear Creek Lake Park, City of Lakewood, Colorado Mountain Bike Association (COMBA), and Jefferson County Open Space.
- Create safe environments for hikers, bikers, and outdoor enthusiasts while maintaining healthy ecosystems to prevent wildfire, as well as to protect forestry and native species.
 - Understand the principles of proper trail building techniques and how to preserve natural resources
 - Advocate for proper treatment of natural resources

PRESS/MEDIA COVERAGE

- 2023 Blog post about Jacobs' research accomplishments at BU.
<https://www.bu.edu/bump/2023/07/26/bump-student-ilana-jacobs-awarded-provost-scholar-award/>
- 2022 Story on Jacobs' experience as a Course Assistant for the 2022 Neural Systems and Behavior Advanced Research Training Course at the Marine Biological Laboratory. <https://www.mbl.edu/news/take-five-ilana-jacobs-0>