

ROBERT N. JARRETT II

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EDUCATION

- Ph.D. Marine Biology, School of Marine Sciences, University of Maine, Orono, ME (2026)
Graduate advisors: Bob Steneck & Damian Brady
Dissertation: *Ecological dynamics of fisheries and climate: demography, monitoring bias, and selection pressures of American lobster in the Gulf of Maine*
- M.S. Marine Policy, School of Marine Sciences, University of Maine, Orono, ME (2022)
- B.S. Marine Sciences, Dept of Marine & Coastal Sci, Rutgers University, New Brunswick, NJ (2018)
- A.S. Mathematics/Science Program, Brookdale Community College, Lincroft, NJ (2015)

RESEARCH EXPERIENCE

Graduate Assistant, University of Maine

2019-Present, American Lobster Demography Studies

- Collected long-term lobster abundance, habitat-use data via scuba and ROV across coastal Maine
- Integrated academic, state, and federal survey datasets using spatial analyses, state-space models, and reproducible QA/QC workflows in R and Git
- Developed geospatial habitat-classification models for lobster using multibeam echosounder data, ROV surveys, and random forests models
- Simulated lobster populations using a length-based model to forecast egg production

2025–Present, Offshore Wind Monitoring & BlueTech Acoustic Survey

- Conducting video and acoustic surveys around the VoltturnUS+ floating offshore wind platform, including mooring-line trench assessment and biofouling characterization using ROV & USV
- Integrated acoustic, multibeam, and environmental datasets to evaluate benthic habitat change and CMECS substrate groups in alignment with ROSA/RWSC guidelines

2023-Present, Acoustic Imaging & Multibeam Calibration Study

- Maintained and upgraded BlueROV2 and BlueBoat platforms to support acoustic imaging and multibeam surveys for habitat mapping and aquaculture site assessment
- Designed workflows to process and integrate acoustic and multibeam datasets for evaluating benthic habitat structure, substrate classification, and aquaculture gear performance

2022-2023, Scallop Aquaculture Rigid Tray Experiment

- Deployed scallop nursery-culture gear across experimental and commercial sites
- Measured growth and survival of hatchery-reared scallops and partnered with industry to collect labor metrics to evaluate gear performance

2020-2022, American Lobster Behavior Study

- Evaluated how low oxygen and shifts in algal communities influence adult lobster shelter-selection behavior through combined laboratory and field trials.
- Assessed the behavioral and physiological effects of chronic low-oxygen exposure using controlled laboratory assays of activity and vitality reflexes.
- Investigated how non-native algal species affect postlarval sounding behavior.

Field Researcher, University of Maine, Steneck Lab

2023, Bonaire Coral Reef Survey

- Conducted fish surveys via scuba transects at 11 sites on the western coast of Bonaire
- Assisted undergrad students in the coral reefs course in analyzing data and writing reports

Intern, Maine Department of Marine Resources

2021, Gillnet Fishery and North Atlantic Right Whale Project

- Designed a survey to documenting gillnet gear configurations to inform the Atlantic Large Whale Take Reduction Team decision-support tool and collaborated with Maine Coast Fishermen's Association and Cape Code Commercial Fisheries Alliance to refine survey questions
- Conducted phone and email interviews with New England fishers to gather qualitative information on gear use and fishing practice

Research Assistant, Haskin Shellfish Research Laboratory

2019, Bivalve Larvae Swimming Study

- Recorded video of oyster and scallop larvae swimming in a 3-dimensional environment
- Assisted in general maintenance of laboratory and other research projects

Student Research, Rutgers University Department of Marine & Coastal Sciences

2018, Marine Protected Area GIS Study

- Conducted GIS analysis of Marine Protected Areas to link ecological observations with regulatory zones and management context

2017, Mongolian Taimen Tagging Study

- Analyzed movement data to map home ranges and seasonal migrations of taimen for conservation planning for a vulnerable freshwater species

Maryland Sea Grant REU Fellow, University of Maryland Chesapeake Biological Lab

2017, Chesapeake Bay Anoxic Volume Forecasting

- Developed a statistical model to forecast anoxic volume in Chesapeake Bay, generated seasonal anoxia predictions for a NOAA press release, contributing to public-facing science communication

Research Assistant, Rutgers University Asphalt Pavement Lab

2016, Albedo and Solar Radiation Flux of Asphalt Pavement Study

- Set up data collection system of radiometers and thermocouples for asphalt and concrete slabs
- Determined heat flux and radiative solar flux for different pavement types

PUBLICATIONS

Jarrett R, Reardon K, Shank B, Steneck R, & Brady D. (In prep). Evading the trap gauntlet: Evaluating for the evolutionary plausibility of behavioral trap avoidance in American lobster.

McHenry J, Byrnes J, DiBacco C, Djikstra J, Feehan C, Ferrario F, Filbee-Dexter K, Gagnon P, **Jarrett R**, Johnson L, Lotze H, MacGregor K, Metaxas A, Noisette F, Rasher D, Savard-Drouin A, Savoie A, Stasko Z, Steneck R, Velasquez M, Wilkes L, Wong M, Baum J, Krumhansl K. (In review). Projecting microclimate refugia for kelp forests in a global hotspot for rapid ocean warming.

Jarrett R, Reardon K, Steneck R, & Brady D. (In press). Multiple independent indicators of American lobster in Maine: Patterns in space and time. *Marine Ecology Progress Series*.

Jarrett R, Wahle R, Brady D, & Steneck R. (2024). Shifts in habitat use and demography of American lobsters in coastal Maine over the past quarter century. *Marine Ecology Progress Series*.

Stoll J, Albano H, Clements A, Coleman S, Flye M, Isherwood J, **Jarrett R**, Leeman C, Liberman K, Ober C, Orminski N, & Risley S. (2020). 2020 Canada-US Lobster Town Meeting: Lobsters without borders: Forging our futures together. (pp. 1–17) [Proceedings Report]. Lobster Institute.

PRESENTATIONS

(mentees indicated with *)

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- St. Gelais A, **Jarrett R**. (2025). Monitoring technology for Kelp Aquaculture [Webinar]. *Aquaculture Information Exchange*. Virtual.
- Jarrett R**, Brady D, & Steneck R. (2025). Shifts in habitat and demography of American lobster in coastal Maine over the past quarter century [Oral Presentation]. *Gulf of Maine Monitoring and Research Symposium*, Haverhill, MA.
- Jarrett R**, Reardon K, Steneck R, & Brady D. (2025). Multiple independent indicators of American lobster in Maine: Patterns in space and time [Oral Presentation]. *Benthic Ecology Meeting*, Mobile, AL.
- Jarrett R**, Brady D, & Steneck R. (2024). Habitat-specific monitoring documents dramatic changes in habitat use and ecology of a data-rich fisheries species, American lobster [Oral Presentation]. *Benthic Ecology Meeting*, Charleston, SC.
- Jarrett R**, Brady D, & Steneck R. (2024). Shifts in habitat, habitat use and demography of American lobster in coastal Maine over the past quarter century [Oral Presentation]. *ASMFC American Lobster Data Workshop*, Virtual.
- Jarrett R**, & Steneck R. (2023). Mapping and modeling habitat to determine drivers of dramatic shifts in American lobster demography in the Gulf of Maine. [Oral Presentation]. *Benthic Ecology Meeting*, Miami, Florida.
- Jarrett R**, & Steneck R. (2022). Difficulty Breathing: Assessing changes in behavior and measures of vitality of American lobster at reduced oxygen levels [Oral Presentation]. *46th Annual Meeting of the Atlantic International Chapter of the American Fisheries Society*, Sunday River, Maine.
- Hamel O*, **Jarrett R**, & Steneck R. (2022). Do lobsters move randomly to escape low oxygen environments? [Poster]. *2022 SEA Fellows Summer Science Symposium*, Walpole, ME.
- Leonard E*, **Jarrett R**, & Steneck R. (2022). Scaling up shifts in lobster habitat use in midcoast Maine [Poster]. *2022 SEA Fellows Summer Science Symposium*, Walpole, ME.
- Jarrett R**, & Steneck R. (2022). No Easy Answers: Dramatic shifts in American lobster habitat and demography in the Gulf of Maine. [Oral Presentation]. *Benthic Ecology Meeting*, Portsmouth, NH.
- Burnham K*, **Jarrett R**, & Steneck R. (2021). Does the invasive alga *Dasyatis japonica* impact American lobster shelter selection and postlarval settlement: Experimental methods [Poster]. *2021 SEA Fellows Summer Science Symposium*, Walpole, ME.
- Gould K*, **Jarrett R**, & Steneck R. (2021). Are marine ecosystem changes affecting lobster sheltering behavior in coastal Maine? [Poster]. *2021 SEA Fellows Summer Science Symposium*, Walpole, ME.
- Harris L*, **Jarrett R**, & Steneck R. (2021). Counting lobsters with an underwater robot [Poster]. *2021 SEA Fellows Summer Science Symposium*, Walpole, ME.
- Jarrett R**, Lyubchich V, & Testa J. (2017). Predicting anoxic volumes of Chesapeake Bay: Utilizing bootstrapping to improve forecasts. [Poster]. *Coastal and Estuarine Research Federation Biennial Conference*, Providence, RI.

TEACHING EXPERIENCE

Adjunct Instructor & Subject Matter Expert, Unity Environmental College

2026, Marine Skills: Safe Boating & Operations (3-credit undergraduate course, 5-week term)

- Designed and built a new curriculum, integrating small-boat handling, navigation, risk assessment, and field-operations competencies aligned with Maine DIFW boating-safety standards.
- Created practical skill assessments and performance rubrics to evaluate students' readiness for independent small-boat operation in scientific fieldwork, aquaculture, and coastal-resource careers.

2026, Marine Policy & Management (3-credit undergraduate course, 5-week term)

- Redesigned and expanded the accelerated course to integrate contemporary marine policy frameworks, governance structures, fisheries management, and applied case analyses.
- Led a writing-intensive sequence of weekly policy briefs and a final research paper supported by structured peer review and iterative feedback.
- Supported students with varied preparation through scaffolded assignments and accessible materials that strengthened their ability to interpret ecological evidence and evaluate policy options.

Micro-Credential Developer & Instructor, Darling Marine Center

2025-2026, Remotely Operated Vehicle (ROV) Survey Micro-Credential

- Designed and delivered a hybrid Micro-Credential integrating self-paced online modules with hands-on field training in ROV operation and underwater survey methods
- Created accessible instructional materials including video demonstrations, step-by-step technical guides, and scaffolded practice activities
- Developed competency-based assessments to evaluate learner proficiency in ROV maintenance, piloting, survey design, and data interpretation

Teaching Assistant, University of Maine School of Marine Science

2021, Marine Ecology, Semester-by-the-Sea (*3-credit undergraduate course*)

- Guided students through intertidal and offshore field sampling, teaching species identification, ecological survey methods, and safe field practices
- Supported student learning by maintaining a multi week herbivory experiment, enabling students to work with real ecological datasets
- Mentored students in processing field samples, organizing data, and conducting ecological analyses, helping them build confidence with quantitative methods

2020, Marine Ecology, Online Semester-by-the-Sea (*3-credit undergraduate course*)

- Produced field based instructional videos demonstrating sampling techniques, ecological concepts, and data collection methods for remote learners
- Maintained course materials and supported student engagement through Brightspace, ensuring continuity and clarity during pandemic related disruptions
- Adapted hands on field content into inclusive, online friendly learning modules that allowed students to practice ecological reasoning even without physical field access

Workshop Leader, University of Maine School of Marine Science

2023, Sci Graphics & Data Viz Workshop, Grad Student Professional Development Retreat

- Designed and led an applied workshop on scientific graphics for research communication, with a focus on graphical abstracts, figure design, and integrating graphics and data
- Taught principles of visual hierarchy, narrative flow, and multimodal communication, helping participants translate complex ecological and environmental datasets into clear, compelling visuals
- Guided students through evaluating and redesigning figures for accessibility, including strategies for color-vision-safe palettes, contrast optimization, and alternatives that reduce reliance on color

Head Sailing Instructor, Monmouth Boat Club, Red Bank, NJ

2018, Summer Junior Sailing Program

- Developed new curriculum for the Optimist and 420 sailing courses
- Oversaw a team of six sailing instructors across beginner, intermediate, and advanced classes
- Assisted with beginner sailing course daily and coached intermediate sailors at regattas

MENTORSHIP

Owen Hamel, *Intern*

2022

Emily Leonard, *Undergrad Intern*

2022

Ondine Morgan-Knapp, <i>HS Vol</i>	2022	Lydia Harris, <i>Undergrad Intern</i>	2021
Katherine Miller- Burnham, <i>Intern</i>	2021	Beth Davis, <i>Undergrad Intern</i>	2019
Katherine Gould, <i>Undergrad Intern</i>	2021	Grace McDermott, <i>Undergrad Intern</i>	2019

GRANTS, AWARDS, & HONORS

2026	Brady, D., Rzeszowski, E., Jarrett, R. Maine BlueTech Innovation: Offshore Wind Monitoring and Testing (\$67,216 USD Pending)
2025	Brady, D., Jarrett, R. Mapping benthic habitats of the American lobster using cost effective multibeam echosounder surveys and remotely operated vehicles (\$100,000 USD)
2024	Brady, D.C., Jarrett, R. Calibration of an acoustic method to calculate biomass of kelp in aquaculture operations, Lukis Family Foundation (\$100,000 USD)
2024	Dan Sandweiss Graduate Student Advocacy Award
2024	UMaine Graduate Student Government Research Grants (\$6,732 USD)
2022	Atlantic International Chapter of the AFS Student Travel Award (\$150 USD)
2021	Lobster Institute Graduate Fellowship (\$15,627 USD)
2017	Maryland Sea Grant Research Experience for Undergraduates Fellowship

RELATED EXPERIENCE

2026	Science Advances Manuscript Reviewer
2022-2024	UMaine School of Marine Sciences Graduate Student Board Member
2023	American Lobster Research Roadmapping Workshop Participant
2022-2023	UMaine Graduate Student Government President
2022-2023	UMaine Graduate Board Member
2022-2023	UMaine University Research Council Member
2022-2023	AFS Hutton Junior Fisheries Program Reviewer
2022-2023	UMaine School of Marine Sciences Professional Development Club Co-chair
2021-2023	AFS Northeastern Division Newsletter Co-editor
2021-2022	UMaine Graduate Student Government Grants Officer
2019-2020	Maine Dept. of Marine Resources Lobster Research Collaborative Researcher
2020	ICES Stock Assessment Advice Drafting Group Member

RELEVANT COURSES

Fisheries Policy and Mgmt.	Principles of GIS	Biological Oceanography
Fisheries Pop. Dynamics	Spatial Analysis	Physical Oceanography
Marine Resource Mgmt.	Agent Based Modeling	Animal Phys. Ecology
Coral Reefs	Occupancy Modeling	Biophysical Interactions

MEDIA AND OUTREACH

Penelope Overton. (2024, October 18). Lobsters in the shallows are emerging from their caves. *Portland Press Herald*. <https://www.pressherald.com/2024/10/18/lobsters-in-the-shallows-are-emerging-from-their-caves/>

SKILLS

Programming: R (sf, sp, terra, raster, rgeos, ggplot2, etc.), NetLogo, GAMA, Python (introductory)

Data & Modeling: Spatial analysis, machine learning, kriging, occupancy models, individual-based models, MARSS, GAMs, population dynamics models

Data Pipelines: Programmatic NetCDF retrieval (FVCOM) in R; reproducible workflows with Git; integration of spatial, acoustic & environmental datasets

Data visualization: Spatial products, ecological graphics, and model outputs using R (ggplot2, cowplot)

Software Tools: ArcGIS Pro, QGIS, Git, GitHub, RStudio, Adobe Illustrator, SonarView, Zotero

Field & Technical: ROV/USV systems, acoustic imaging (sidescan, multibeam), AAUS scientific diving, DAN CPR/First Aid, Maine Boating Safety Certificate, U.S. Sailing Level 1 Small Boat Instructor