Ian T. Jones

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Current Position:

- *Interim Director, Center for Acoustics Research and Education*, October 2025 to present
  University of New Hampshire, Durham, NH
  Department: Center for Acoustics Research and Education (CARE), Institute for the Study of Earth, Oceans, and Space (EOS)
- *Research Assistant Professor*, October 2023 to present
  University of New Hampshire, Durham, NH
  Department: CARE, EOS

Previous Position:

- *Postdoctoral Research Investigator*, September 2021 to October 2023
  University of New Hampshire, Durham, NH
  Department: Center for Acoustics Research and Education, Institute for the Study of Earth, Oceans, and Space
  Supervisor: Dr. Jennifer Miksis-Olds

Education:

- PhD in Biological Oceanography, Massachusetts Institute of Technology-Woods Hole Oceanographic Institution Joint Program in Oceanography/Applied Ocean Science and Engineering, Cambridge and Woods Hole, MA
  Sensory Ecology and Bioacoustics Lab
  Advisor: Dr. Aran Mooney
  Graduation Date: August 5, 2021 GPA: 5.0 (5.0 scale)
- B.S. in Marine Sciences with Marine Biology Concentration, University of Maine, Orono, ME
  Graduation Date: May 2015 (*summa cum laude*) GPA: 3.99 (4.0 scale)

Research Summary:

My research intersects marine bioacoustics and physical underwater acoustics to advance understanding of biological, geological, and anthropogenic drivers of spatial and temporal soundscape variability in aquatic environments, through passive acoustic methods. I am especially interested in the use of natural soundscapes and sound production by fishes and aquatic invertebrates, as well as anthropogenic noise impacts on the behavior and sound detection abilities of these animal taxa. I occasionally study these topics in marine mammals as well. In my soundscape and noise impact studies, I focus heavily on quantification of acoustic particle motion (the sound field quantity detected by fishes and invertebrates) of underwater habitats and assessment of how well it can be predicted (or not) by more commonly measured acoustic pressure data. My current research projects at UNH focus on oceanographic and biological factors predicting ambient soundscape variability in nearshore habitats (including seagrass) in New Hampshire and Maine, and in offshore habitats. I am also modelling the reduction of listening space, due to vessel noise, for seals and fishes in the Gulf of Maine. For my PhD, I studied soundscapes of tropical coral reefs and the impacts of marine construction noise on squid behavior.

Peer-Reviewed Research Publications:

1. **Jones, I.T.,** Bonnel, J., Flamant, J. (2025). Particle motion polarization of offshore fish vocalizations versus ambient and ship noise. *The Journal of the Acoustical Society of America 158*(3). 1723-1736. https://doi.org/10.1121/10.0039105
2. **Jones, I.T.,** Martin, S.B., Miksis-Olds, J.L. (2025). Exploring offshore particle motion soundscapes. *The Journal of the Acoustical Society of America 157*. 149-168. https://doi.org/10.1121/10.0034748
3. **Jones, I.T.**, Schumm, M.*, Stanley, J.A., Hanlon, R.T., Mooney, T.A. (2023). Longfin squid reproductive behaviours and spawning withstand wind farm pile driving noise. *ICES Journal of marine Science*. fsad117, https://doi.org/10.1093/icesjms/fsad117
4. **Jones, I.T.**, Gray, M.D., Mooney, T.A. (2022). Soundscapes as heard by invertebrates and fishes: Particle motion measurements on coral reefs. *The Journal of the Acoustical Society of America, 152*. 399-415. https://doi.org/10.1121/10.0012579
5. Panlilio, J.M., **Jones, I.T.**, Salanga, M.C., Aluru, N., Hahn, M.E. (2021). Developmental exposure to domoic acid disrupts startle response behavior and circuitry in zebrafish. *Toxicological Sciences, 82*(2). 310-326. https://doi.org/10.1093/toxsci/kfab066
6. Jézéquel, Y., **Jones, I.T.**, Bonnel, J., Chauvaud, L., Atema, J., Mooney, T.A. (2021). Sound detection by the American lobster (*Homarus americanus*). *Journal of Experimental Biology*, *224*. https://jeb.biologists.org/content/224/6/jeb240747
7. **Jones, I.T.**, Peyla, J.F.*, Clark, H.*, Song, Z., Stanley, J.A., Mooney, T.A. (2021). Changes in feeding behavior of longfin squid (*Doryteuthis pealeii*) during laboratory exposure to pile driving noise. *Marine Environmental Research*. *165*. https://doi.org/10.1016/j.marenvres.2020.105250
8. Mooney, T.A., Castellote, M., **Jones, I.T.**, Rouse, N., Rowles, T., Mahoney, B., Goertz, C. E. C. (2020). Audiogram of a Cook Inlet beluga whale (*Delphinapterus leucas*). *The Journal of the Acoustical Society of America*, *148*. 3141-3148. https://doi.org/10.1121/10.0002351
9. Suca, J.J., Lillis, A., **Jones, I.T.**, Kaplan, M.B., Solow, A.R., Earl, A.D., Habtes, S., Apprill, A., Llopiz, J.K., Mooney, T.A. (2020). Variable and spatially explicit response of fish larvae to the playback of local, continuous reef soundscapes. *Marine Ecology Progress Series*, *653*. 131-151. https://doi.org/10.3354/meps13480
10. **Jones, I.T.**, Stanley, J.A., Mooney, T.A. (2020). Impulsive pile driving noise elicits alarm responses in squid (*Doryteuthis pealeii*). *Marine Pollution Bulletin*, *150*. 110792. https://doi.org/10.1016/j.marpolbul.2019.110792
11. **Jones, I.T.**, Stanley, J.A., Bonnel, J., Mooney, T.A. (2019). Complexities of tank acoustics warrant direct, careful measurement of particle motion and pressure for bioacoustic studies. *Proceedings of Meetings on Acoustics*, *37*, 010005. https://doi.org/10.1121/2.0001073
12. Mooney T.A., Castellote, M., **Jones, I.T.**, Quakenbush L., Hobbs, R., Gaglione, E., Goertz, C. (2018). Local acoustic habitat relative to hearing sensitivities in beluga whales (*Delphinapterus leucas*). *Journal of Ecoacoustics*. *2*. 11. https://doi.org/10.22261/JEA.QZD9Z5
13. Du Clos, K.T. **Jones, I.T.**, Carrier, T.J., Brady, D.C., Jumars, P.A. (2017). Model-assisted measurements of suspension-feeding flow velocities, *Journal of Experimental Biology, 220*. 2096-2107. https://doi.org/10.1242/jeb.147934
14. Maas, A.E., **Jones, I.T.**, Reitzel, A.M., Tarrant, A. (2016) Daily cycle in oxygen consumption by the sea anemone *Nematostella vectensis* Stephenson. *Biology Open*, *5*. 161-164. https://doi:10.1242/bio.013474

*Undergraduate Advisee to Ian T. Jones

Book Chapters:

1. **Jones, I.T.**, Martin, S.B., Miksis-Olds, J.L. (2025). Empirical relationships of particle motion and pressure soundscapes along the U.S. Eastern Continental Shelf. Popper, A.N., Sisneros, J.A., Lepper, P.A., Vigness-Raposa, J. (eds) The Effects of Noise on Aquatic Life IV (*accepted*).
2. Miksis-Olds, J., **Jones, I.**, Martin, S., Heaney, K. (2025). What is vessel AIS missing and why do we care? Popper, A.N., Sisneros, J.A., Lepper, P.A., Vigness-Raposa, J. (eds) The Effects of Noise on Aquatic Life IV (*in press*).
3. **Jones, I.T.**, Martin, S.B., Miksis-Olds, J.L. (2024). Incorporating particle motion in fish communication and listening space models. Popper, A.N., Sisneros, J., Hawkins, A., Thomsen, F. (eds) The Effects of Noise on Aquatic Life: Principles and Practical Considerations. Springer, Cham. https://doi.org/10.1007/978-3-031-10417-6_73-1

Preprints:

1. Greenhalgh, J. A., Akmentins, M. S., Boullhesen, M., Brejão, G. L., Bowman, J. C., Briers, R. A., Campbell, K., Clark, A., Coen, M.*, Desjonquères, C., Gastón, S., Gottesman, B. L., **Jones, I. T.**, Lahoz-Monfort, J. J., Lindsay, E., Rodríguez, F. M., Navarrete-Mier, F., Norton, M., las Casas e Novaes, M. C., Okazaki, S., Polajnar, J., Ribeiro, M.C., Roberts, L., Rothenberg, D., Sabet, S.S., Satish, R., Spriel, B., Stanković, D., te Velde, K., Timperley, J.H., Turlington, K., Walker, J.R., Valverde, M.P., Cox, K., Looby, A. (2025). *The Freshwater Sounds Archive*. bioRxiv. https://doi.org/10.1101/2025.05.07.652412

*Undergraduate Advisee to Ian T. Jones

Research grants (current):

- Project Title: *Smart Acoustics from Shelf to Shore in the Gulf of Maine*
  - Principal Investigator: Jennifer Miksis-Olds (UNH)
    - This work is organized under three research themes. Ian T. Jones is the Lead Investigator for Research Theme 3 (Coastal Processes).
  - Project summary:
    - Overall project: This project applies active and passive acoustic methods to assess oceanographic linkages between various spatial, temporal, and depth scales related to 1) ocean changes that are not predictable, 2) understanding and characterizing mesoscale (i.e. horizontal distances of 1m – 1000m) seafloor and water column heterogeneity to further predictive capabilities for long-range sound propagation and reverberation, 3) inversion for seafloor sediment characteristics using passive measurements of ambient sound, 4) integrating soundscape measurements and modeling, 5) exploring the feasibility of coupling active and passive acoustic data to study propagation over live seafloors, and 6) the relationship between coastal and shelf/slope processes.
    - Theme 3 (Coastal Processes): The goal of this theme's work is to characterize temporal and spatial complexities of the ambient sound field in coastal habitats to enhance understanding of limitations on passive sensing capabilities for sound localization and port protection applications.
  - Sponsor: Office of Naval Research
  - Grant #: N000142512518

- Project Period: 10/01/2025 to 09/30/2028

- Project Title: *Cross-regional comparisons of offshore soundscape predictors and vessel noise impacts on marine mammals and fishes*
  - Principal Investigator: Ian T. Jones (UNH)
  - Project summary: This work analyzes offshore datasets from the Gulf of Maine and Mid and South US Atlantic Bight to investigate how non-acoustic oceanographic variables influence sound pressure and particle motion quantities of offshore soundscapes, and how these relationships differ across regions. Further, communication and listening range reductions due to vessel sound will be modeled in for fishes and mammals in each region to predict the influence of anthropogenic sounds on the use of natural sounds by ecologically key and protected taxa.
  - Sponsor: Office of Naval Research
  - Grant #: N00014-23-1-2749
  - Project period: 08/01/2023 to 07/31/2026

Past research grants:

- Project Title: *Ecological passive acoustic monitoring of New Hampshire eelgrass habitats* (Development Funding)
  - Principal Investigators: Ian T. Jones (UNH), Gabriel Venegas (UNH)
  - Project summary: This project tested the application of commercial multi-channel Passive Acoustic Monitoring (PAM) sensors with a novel, custom array synchronization system (provisionary patent pending) to collect baseline data to assess the utility of PAM data as a proxy for eelgrass health indicators.
  - Sponsor: NH Sea Grant
  - Grant #: 111F59 (Development Funding)
  - Project Period: 04/25/2024 to 04/25/2025

Contracts (current):

- Project Title: *Biological Noise Modeling for Active and Passive Sonar Performance Predictions*
  - Role: Senior Personnel
  - Principal Investigators: Jeff Gilbert (Triton Systems), Jennifer Miksis-Olds (UNH)
  - Project summary: The goals of this project are to identify relevant soundscape metrics (power in different frequency bands, impulsivity, periodicity, uniformity) and their associated statistics based on inputs that define the relevant acoustic scene such as bottom type, seascape (relevant properties of the water column), biological presence, cargo shipping density, and seismic surveying. The team will test model performance against ground-truth underwater acoustic recordings, analyze significant discrepancies in results, and make any necessary adjustments to predictive algorithms.
  - Sponsor: Office of Naval Research
  - Contract #: 68335-24-C-0362
  - Project Period: November 2025 to November 2027
- Project Title: *Passive Acoustic Monitoring for Marine Mammals and Hicks Rocks Pinniped Haul-Out Survey at Portsmouth Naval Shipyard, Kittery, ME*
  - Role: Biologist
  - Principal Investigator: Michelle Fournet (UNH)
  - Project summary: The Navy seeks to monitor marine mammals in the vicinity of the Portsmouth Naval Shipyard using the dual methodology of visual surveys and passive

acoustic monitoring (PAM). Target species include harbor porpoise (*Phocoena phoceona*) and pinniped species. The goal is to use these methodologies to determine presence/absence, patterns of occurrence, and estimate frequency, abundance, and density of these species.

- Sponsor: Naval Facilities Engineering Systems Command Atlantic, Portsmouth Naval Shipyard.
- Contract #: N264702520002
- Project Period: 08/01/2025 to 07/31/2027

Mentoring:

- Research mentor to undergraduate students, University of New Hampshire, Sensors in Earth, Ocean and Space Science (SEOSS) Research Experience for Undergraduates (REU) Program, 2024, 2025
  - 2025 Advisee: Gabrielle Lytle (Tuskegee University).
  - 2024 Advisee: Mackenzie S. Coen (Florida State University).
  - Mentored undergraduate students in data collection, analysis, and oral and written presentation of underwater soundscape research conducted in New Hampshire and Maine freshwater, estuarine, and coastal ecosystems.
- Mentor, MIT-WHOI Joint Program Application Support & Knowledgebase (JP ASK), 2020
  - Mentored two prospective graduate students on an as-needed basis, by answering questions about life in the Joint Program, and providing advice on how to prepare a strong written application for the program.
- Research mentor to undergraduate students, Woods Hole Oceanographic Institution:
  - 2020: Guided undergraduate student (Sophie Ferguson) remotely to assist with auditing recordings of coral reef sounds for boat noise and instructed student on audio data visualization methods.
  - 2019-2020: Worked closely with WHOI Summer Student Fellow (Madison Schumm) in experimental design, setup, data collection, video data analyses, and written and oral presentation of results for experiments on effects of in-lab noise playbacks on squid mating behaviors. This student presented a poster of her results at the 2020 Ocean Sciences meeting in San Diego, CA.
  - 2018: Mentored two guest students (James Peyla, Hadley Clark) at WHOI in husbandry, experimental design, setup, data collection, and video data analyses for experiments investigating effects of in-lab noise playbacks on squid feeding behavior.
- Research mentor to high school students, Woods Hole Oceanographic Institution:
  - Falmouth Academy: Saniya Rajagopal
  - Falmouth High School: Grace Kwon
  - Worked closely with Falmouth Academy student (2018-2019) and Falmouth High School student (2016-2017) advising in experiment design, data collection, analysis, and presentation in project conducted at WHOI on behavioral responses of coral and snapping shrimp, respectively, to in-lab playbacks of noise. Both students presented their work at the state-wide Massachusetts Science & Engineering Fair.

Teaching Experience:

- Instructor, *BIOL 828 Marine Bioacoustics*, University of New Hampshire, Spring 2026
  - Students in this course gain fundamental background on acoustic terminology, underwater sound propagation, passive and active acoustic monitoring, marine animal adaptations, hearing abilities, sound production, soundscapes, and anthropogenic impacts on marine life. Students also gain hands-on experience working with software for measurement and visualization of biological (and non-biological) sounds.
- Instructor: *Field Bioacoustics and Soundscape Ecology*, Shoals Marine Lab, University of New Hampshire, Summer 2025 (annually thereafter).
  - Students in this course gain hands-on introductory experience in bioacoustics and soundscape research, including 1) exploring sound production and hearing across multiple animal taxa, 2) deploying acoustic sensors in terrestrial and underwater habitats, and 3) learning fundamental data analysis methods to quantify, catalog, and interpret sounds.
- Instructor, *EOS 808/OE 795 Acoustics Essentials*, University of New Hampshire, Spring 2024, 2025
  - This course provides a conceptual and practical overview of fundamental acoustics concepts in both terrestrial and underwater environments, and introduces students to diverse research fields utilizing acoustics, including but not limited to transducer design, animal bioacoustics, soundscape management, biomedical ultrasound, remote seafloor sensing, fisheries acoustics, human speech and hearing, and architectural acoustics.
- Guest Lecturer, *BIOL 828 Marine Bioacoustics*, University of New Hampshire, May 2, 2023, and *Acoustic Ecology*, University of New Hampshire, March 1, 2024
  - Gave lectures about fundamentals of acoustic particle motion, and how fishes and invertebrates hear using it.
- Guest Lecturer, *EOS 808/OE 795 Acoustics Essentials,* University of New Hampshire, February 15, 2022 and March 2, 2023
  - Gave a lecture about sound detection and sound production in fishes, including scientific methods for measuring fish hearing and sounds relevant to fish sensory ecology.
  - Designed class activity for students to learn how audiograms are constructed, by measuring their own hearing thresholds.
- MATLAB Instructor, Woods Hole Oceanographic Institution, Woods Hole MA, July 7, 2020
  - Led a tutorial for summer undergraduate and incoming graduate students on basic signal processing in MATLAB, including spectral analysis and filtering.
- Guest Lecturer, Bridgewater State University, Bridgewater, MA, April 18, 2019
  - Co-designed and led a lesson on ocean surface waves for undergraduate students in an introductory Oceanography course (GEOL-210).
- Guest Instructor, Mullen Hall Elementary School, Falmouth, MA, April 22 & 29, 2019
  - Led two highly interactive lessons for local 4th grade students on marine animal adaptations. Designed custom lessons involving media presentations, discussions, and diverse activities to introduce students to a suite of adaptations fishes use to survive.

Oral Presentations (Presenting Author):

1. **Jones, I.T.**, Bruce, M.S., Miksis-Olds, J. Empirical relations of particle motion and pressure soundscapes along the U.S. eastern continental shelf. 7th International Conference on the Effects of Noise on Aquatic Life, Prague, Czech Republic. June 29-July 04, 2025.
2. **Jones, I.T.**, Bonnel, J., Flamant, J. Particle motion polarization of offshore fish vocalizations versus ambient and boat noise. Northeast Regional Acoustics Symposium, University of New Hampshire, Durham, New Hampshire, USA. April 22, 2025.
3. **Jones, I.T.** Cross-regional comparisons of offshore soundscape predictors and vessel noise impacts on marine mammals and fishes. Office of Naval Research Ocean Acoustics Program Review. Naval Postgraduate School, Monterey, CA, USA. September 17-19, 2024.
4. **Jones, I.T.**, Bonnel, J. Particle motion polarization of offshore fish vocalizations, boat noise, and ambient soundscapes. 186th Meeting of the Acoustical Society of America/Acoustics Week in Canada, Ottawa, Canada. May 13-17, 2024.
5. **Jones, I.T.**, Integrating acoustic particle motion into soundscape & noise impact studies. Global Ocean Science Education Workshop, University of Rhode Island, Narragansett, RI, USA. May 23-25, 2023.
6. **Jones, I.T.**, Martin, B., Miksis-Olds, J. Finding predictors of offshore particle motion soundscapes: are trends redundant with sound pressure? Northeast Regional Environmental Acoustics Symposium, University of New Hampshire, NH, USA. March 27, 2023.
7. **Jones, I.T.**, Martin, B., Miksis-Olds, J. Contributions of vessel noise to deep-water particle motion soundscapes and potential masking effects on fishes. 6th International Conference on the Effects of Noise on Aquatic Life, Berlin, Germany. July 10-15, 2022.
8. **Jones, I.T.**, Gray, M., Mooney, T.A. Natural cues for invertebrate and fish hearing: particle motion measurements coral reefs. 182nd Meeting of the Acoustical Society of America, Denver, CO, USA. May 23-27, 2022.
9. **Jones, I.T.**, Martin, B., Miksis-Olds, J. Exploring relationships between sound pressure and particle motion of deep-water soundscapes. Northeast Regional Environmental Acoustics Symposium, University of New Hampshire, NH, USA. May 2, 2022.
10. **Jones, I.T.**, Impacts of underwater construction noise on defense, feeding, and reproductive behaviors of longfin squid. Biology Department Seminar, Woods Hole, MA, USA. February 6, 2020.
11. **Jones, I.T.**, Stanley, J.A., Mooney, T.A. Influences of pile driving noise exposure on feeding and reproductive behaviors of longfin inshore squid (*Doryteuthis pealeii*). 5th International Conference on the Effects of Noise on Aquatic Life, Dan Haag, The Netherlands. July 7-2, 2019.
12. **Jones, I.T.**, Stanley, J.A., Mooney, T.A. Assessing impacts of offshore pile driving noise on the antipredator defense and shoaling behaviors of squid (*Doryteuthis pealeii*). 176th Meeting of the Acoustical Society of America, Victoria, Canada. November 5-9, 2018.
13. **Jones, I.T.**, Stanley, J. A., Mooney, T.A. Offshore pile driving noise elicits alarm responses in longfin squid (*Doryteuthis pealeii*). 148th Meeting of the American Fisheries Society, Atlantic City, NJ, USA. August 19-23, 2018.

14. **Jones, I.T.**, Suca J, Llopiz J, Mooney TA. Characterizing soundscapes and larval fish settlement in tropical seagrass and mangrove habitats. 173rd Meeting of The Acoustical Society of America, Boston, MA, USA. June 25-29, 2017.

Poster Presentations (Presenting Author):

- **Jones, I.T.,** Venegas, G.R. Ecological passive acoustic monitoring of New Hampshire eelgrass habitats. New Hampshire Sea Grant Research Symposium. University of New Hampshire, Durham, NH, USA, January 31, 2025.
- **Jones, I.T.**, Martin, B., Miksis-Olds, J. What do deep sea fishes hear? Exploratory studies of US Outer Continental Shelf soundscapes. Ocean Sciences Meeting, New Orleans, LA, USA. February 18-23, 2024.
- **Jones, I.T.**, Hall J.J., Bowden T.J. Physiological and developmental impacts of acidified seawater on larvae of the American lobster (*Homarus americanus*). The American Lobster in a Changing Ecosystem: A US-Canada Science Symposium, Charlottetown, PE, Canada, November 3-6, 2015.
- **Jones, I.T.**, Maas A.M, Tarrant A.M. A circadian metabolic rhythm in the cnidarians *Nematostella vectensis*. Society for Integrative and Comparative Biology, West Palm Beach, FL, USA, January 3-7, 2015.

Student Poster Presentations:

- Schumm M, **Jones I.T.**, Mooney, T.A.. The effect of pile driving noise on mating behavior in squid (*Doryteuthis pealeii*). Ocean Sciences Meeting, San Diego, CA, USA, February 16-21, 2020.

Organizations & Leadership:

- Member of JEDI-EOS (*Justice, Equity, Diversity, and Inclusion in the Institute for the Study of Earth, Oceans, and Space*), University of New Hampshire, September 2023 to present.
  - Assisted with recruitment efforts to the inaugural year (summer 2024) of the EOS REU program (*Sensors in Earth, Ocean and Space Science*) aimed at providing positive introductory experiences to research for early-career undergraduate students from underrepresented groups. Presented research opportunities to classrooms at the University of Puerto Rico (virtual) and NHTI (Concord, NH), reviewed applications, and conducted interviews with prospective students.
  - Organizing professional development training series (for Spring 2025) for EOS faculty and staff on key topics to promote diversity, inclusivity, and mental well-being of students and staff in their research teams, in collaboration with the UNH SHARRP Center and Office of Community Equity & Diversity staff.
- Member of NERACOOS/UNH *Gulf of Maine Regional Acoustic Network Implementation Plan* February 13-14, 2024 (Workshop 1); November 6-7, 2024 (Workshop 2); January 21, 2026 (Workshop 3)
  - Met with regional acoustic practitioners in government, industry, and academia to inventory current and upcoming acoustic monitoring activities in the Gulf of Maine,

identify data gaps and needs, data management techniques, and priority research areas involving underwater acoustics toward a detailed implementation plan for future acoustic monitoring. Provided feedback on written implementation plan.

- ❖ Member of UNH Center for Acoustics Research and Education (CARE) Education Committee, 2023 to present.
    - ♦ Committee of CARE faculty meets on a semesterly-basis to discuss initiatives, funding, and academic affairs related to graduate and undergraduate acoustics-related coursework and education programs at UNH.
- ❖ Member of UNH CARE Research Committee, 2023 to present.
    - ♦ Committee of CARE faculty meets on a semesterly-basis to discuss initiatives, funding, and internal and external collaboration opportunities for acoustics-related research opportunities.
- ❖ University of New Hampshire Postdoctoral Association (UNH PDA), President, January 2022 to December 2023
    - ♦ Led team to organize the 2023 Postdoctoral Research Day symposium at UNH, which included research presentations by postdocs and professional development workshops.
    - ♦ Coordinated academic support, professional training, career development, and networking opportunities for postdocs at UNH.
    - ♦ Liaised with multiple academic offices and centers, including the Graduate School, Research Office, and Beauregard Center for Equity Justice and Freedom.
    - ♦ Maintained strong relationships with university administration, advocating for postdoc interests and needs.
- ❖ Member of Workgroup on Sound and Vibration Effects on Fishes and Aquatic Invertebrates, 2020-2021, State of the Science Workshop on Wildlife and Offshore Wind Energy 2020: Cumulative Impacts.
    - ♦ Collaborated with researchers, policy makers, and industry members to identify key research gaps regarding impacts of sounds from U.S. offshore wind farms on fishes and aquatic invertebrates, and approaches to address these gaps.
    - ♦ Discussions culminated in a report prepared for the New York State Energy Research and Development Authority.
- ❖ MIT/WHOI Joint Program – Newsletter Committee, 2020-2021
    - ♦ Worked on team of graduate students writing a quarterly newsletter providing information about daily life in graduate school, advice about applying, and highlights of Diversity, Equity, and Inclusion efforts in the geosciences.
- ❖ WHOI Student Organization – Biology Department Representative: 2018-2019
    - ♦ Co-organized weekend-long, student social retreat to New Hampshire.
    - ♦ Oversaw and coordinated maintenance of shared graduate student lounge spaces and student recreation equipment.
- ❖ Wilde Stein Alliance for Sexual Diversity - Secretary: 2012-2014, Member: 2011-2015
    - ♦ Composed detailed meeting minutes and assisted in fundraising and planning of events to support LGBTQ+ students at the University of Maine.
- ❖ UMaine SCUBA Club – President: 2013-2014, Co-President: 2012-2013, Member: 2011-2015
    - ♦ Planned group SCUBA diving trips each semester (including transportation and gear rental logistics, and safety review), helped plan fundraisers, constructed meeting itineraries and

presided at meetings.
    - Acted as a resource for students to learn more about SCUBA and how to become certified.
- UMaine Marine Science Club – Member: 2011-2014

Awards & Honors:

- National Science Foundation Graduate Research Fellowship Program Fellow, 2016
- W.T.W. Potts Award for Exceptional Research in Aquaculture or Physiology, 2015
    - In recognition of poster presentation on undergraduate capstone research project.
- Outstanding Academic Achievement as a Senior (in UMaine School of Marine Sciences), 2015
- Exceptional LGBTQ or Allied Student (UMaine), 2015
- Dean's List, Fall 2011 through Spring 2015 (UMaine, granted each semester)
- UMaine Merit Award Scholarship, Fall 2011 through Spring 2015 (granted each semester)
- Captain Charles Wade Marine Sciences Award, 2012, 2013, 2014
- School of Marine Sciences Award for Academic Excellence, 2012, 2013
- Mystic Aquarium, Student Docent of the Year and Best Presentations, 2009

Detailed Past Position Experience:

- University of New Hampshire: 'Exploring the use and impact of sentinel indicators in ocean acoustics', September 2021 to October 2023
    - Analyzed long-term passive acoustic dataset from deep-water sites on the U.S. Mid- and South Atlantic Outer Continental Shelf, to compare temporal trends and magnitudes of sound pressure and acoustic particle motion.
    - Explored use of acoustic particle motion and its relationships with non-acoustic oceanographic variables as indicators for environmental change.
    - Modeled listening range reduction for fishes during vessel noise.

- University of New Hampshire: 'Acoustic and Environmental Observation Network in the Northwest Atlantic (AEON)', January 2022
    - Participated in ten-day offshore cruise in Gulf of Maine on the *M/V Warren Jr.* to recover and deploy multiple bottom landers with passive and active acoustic transducers.

- MIT/WHOI Joint Program: Squid hearing project, 2020-2021
    - Independently constructed and calibrated mechanical shaker system to present directional acceleration stimuli to squid.
    - Used Auditory Evoked Potentials (AEP) to measure squids' neurophysiological responses.

- MIT/WHOI Joint Program: Project on squid behavioral responses to underwater construction noise, 2017-2021
    - Designed and conducted series of in-tank experiments playing recordings of pile driving noise to squid (*Doryteuthis pealeii*). Using video recordings, quantified changes in defense, feeding, and reproductive behaviors.
    - Mentored three undergraduate students who assisted with data collection and analyses.
    - Used AEP methods to perform neurophysiological hearing tests on killifish (*Fundulus sp*.) utilized as prey in experiments on squid feeding behavior during noise.

- MIT/WHOI Joint Program: Coral reef soundscape project, 2016-2021
    - Over three field seasons, studied how soundscapes of tropical coral reef, seagrass, and mangrove habitats vary over time and space, and how soundscapes may drive larval fish to

settle at these habitats.
- Using SCUBA, deployed, retrieved, and maintained passive acoustic recorders, and assisted with video transects for use in visual fish surveys.
- Deployed and retrieved light traps for larvae collection, and underwater sound playback systems. Performed CTD casts and collected water samples.
- Piloted a small, coastal research vessel on a daily basis.
- Learned fundamental acoustic data processing and analysis methods in MATLAB to describe spectral and temporal trends in underwater tropical soundscapes.
- Collaborated with researchers, faculty, and students from multiple institutions, including University of the Virgin Islands, University of Buffalo, and SCRIPPS Institute of Oceanography.

❖ Aquarium Technician, Aussie Aquariums, Freeport, ME, 2015 to 2016
Employer: Stephen Wood
- Traveled to homes and businesses to service freshwater and saltwater aquaria housing diverse organisms including fish, corals, and local invertebrates.
- Through regular, professional care and maintenance, ensured safe water quality, proper filtration, system function, cleanliness, and high visual appeal of aquaria.

❖ Physical Biology Lab Intern, Darling Marine Center, Walpole ME, Summer 2015
Employer: Dr. Pete Jumars; Supervisor: Kevin DuClos
- Performed particle image velocimetry experiments to study incurrent siphon flows of the filter feeding clams *Mya arenaria* and *Mercenaria mercenaria*.
- Assisted with statistical analysis of physical and morphological data.

❖ Algae Laboratory Assistant, University of Maine, Orono, ME, 2015
Employer: Dr. Susan H. Brawley
- Digitally imaged Maine algae specimens to be placed in a public database.
- Assisted with collection of field data and algae samples from the intertidal zone.
- Performed routine lab maintenance tasks such as autoclaving and pipette calibration.

❖ Capstone Research Project in Marine Science, University of Maine, 2014, 2015
Advisor: Dr. Tim Bowden
- Completed independent research project studying effects of CO_2-induced, reduced pH on the morphology and development of lobster larvae (*Homarus americanus*).
- Performed morphological measurements on preserved larvae and gained familiarity with inductively coupled plasma mass spectrometry for analysis of mineral content in larval exoskeletons.

❖ National Science Foundation Research Experience for Undergraduates/Summer Student Fellowship, Woods Hole Oceanographic Institution, Summer 2014
Advisor: Dr. Ann M. Tarrant
- Learned Western Blotting and respirometry methods to study molecular and physiological circadian cycles in the sea anemone *Nematostella vectensis*.
- Learned programming in R to perform statistics and create figures for respirometry data.
- Through a day-long cruise on the *R/V Tioga*, became familiar with operating oceanographic sampling equipment, including CTDs, Niskin bottles, plankton nets, and sediment samplers.

- Laboratory Assistant, University of Maine, 2013, 2014
  Employer: Dr. Tim Bowden
    - Bowden Aquatic Animal Health Lab: Collected morphometric data of *H. americanus* larvae later used in Capstone Research Project (see above).
    - Aquaculture Research Center: Created standard operating procedures and led a team in the daily care of adult seahorses and raising of juvenile seahorses.

Scientific Skills:

- Environmental passive acoustic monitoring, sound pressure and particle motion measurement
- Quantitative time series analysis of soundscapes
- Propagation modelling of underwater sound
- Statistical inference and modelling (e.g., ANOVA, Generalized Linear/Additive Models)
- Quantitative video analysis of animal behavior (squid, killifish, snapping shrimp)
- Auditory Evoked Potential measurement of hearing (squid, lobster, fishes, beluga whales)
- Research animal husbandry (squid, snapping shrimp, black sea bass, seahorses, freshwater turtles)
- Western blots (protein assays)
- Particle Image Velocimetry
- Respirometry

Scientific Software:

- MATLAB (proficient): acoustic data processing, statistics, plotting
- R (intermediate): statistics, plotting
- Raven Pro: acoustic data analysis, visualization, and annotation
- MANTA (Making Ambient Noise Trends Accessible): acoustic soundscape data processing and metadata organization.
- LABVIEW: voltage measurement for neurophysiological hearing studies

Outreach:

- Live Interview: WBAI 'Eco-Logic: *Celebration of Nature Series: Cephalopods!*. March 19th, 2021.
- Live Interview: *Squid can Hear?! A Q&A and Convo with Squid Biologist Ian Jones*. Interview with Octonation, The World's Largest Octopus Fan Club. August 14, 2020.
- Coral Reef Research Workshop – St. John, U.S. Virgin Islands, 2017
    - Helped conduct an interactive, day-long workshop with local high school students at the Virgin Islands Environmental Resource Station, demonstrating various aspects of coral reef research being conducted by WHOI students and scientists on St. John, including soundscape studies.

Media & News Releases:

- M. Johnson-Groh. AIP Scilight. July 14, 2022. Particle motion in the ocean helps determine what fish can hear.

- Woods Hole Oceanographic Institution, March 20, 2021. Study finds that offshore pile driving noise alters feeding behaviors of longfin squid (also shared by ECO Magazine).
- A. Kingdon. Hakai Magazine, March 2, 2020. Honey, I scared the squids.
- L. Lipuma. AGU Blogs, February 18, 2020. Mating squid don't stop for loud noises.
- C. Legere. Cape Cod Times, January 6, 2020. WHOI study looks at impacts of construction noise on squid.
- Woods Hole Oceanographic Institution, December 16, 2019. Underwater pile driving noise causes alarm responses in squid.

Peer-Reviewer for:

Aquatic Ecology, Bulletin of Marine Sciences, Ecological Informatics, Frontiers in Remote Sensing, Journal of the Acoustical Society of America (JASA), JASA Express Letters, Integrative and Comparative Biology, PLoS ONE, *Scientific Reports*.

Additional Volunteering:

- Judge for School of Marine Science and Ocean Engineering Graduate Student Symposium (poster session), University of New Hampshire, 2023, 2024
- SONIC program, Acoustical Society of America, Denver 2022 Meeting
  - Program for experienced or recent graduate students to mentor and orient first-time student meeting attendees.
- Volunteer, National Ocean Science Bowl, "Nor'easter Bowl" regional competition, Biddeford, ME, 2013; Orono, ME, 2015
  - Assisted operation of a day-long, knowledge-based marine science competition between teams of high school students.
  - Tasked as a timekeeper and runner to ensure games progressed according to National Ocean Science Bowl standards.
- Judge for Falmouth Middle School Science Fair (poster session), Falmouth, MA, 2017
- Lab Aide, Dr. Tim Bowden's Aquatic Animal Health Lab, University of Maine, 2012
  - Maintained research aquaria, including water changes and monitoring water quality, and fed seahorses, oysters, and zebrafish.
  - Learned standard lab procedures, including pipette and balance use and proper handling of hazardous materials.
- Student Docent, Mystic Aquarium, Mystic, CT, 2009, 2010
  - Presented to and conducted interactive sessions with aquarium visitors at various marine animal exhibits.
  - Educated groups on animal behaviors, history, habitat, physical adaptations, and the aquarium's activities in animal training, research, and conservation.
  - Fostered public appreciation for marine life and importance of ocean preservation.

Additional Training:

- UNH Responsible Conduct for Research (RCR) training, 2023
- UNH Principal Investigator training, 2023
- Marine Mammal Observer (@UNH), 2023
- WHOI Biosafety training, 2020
- Drysuit Diving (@WHOI), 2019

- DAN Diving First Aid for Professional Divers Provider, 2019
- WHOI Driver Safety training, 2018
- COMPASS Science Communication workshop (@MIT), 2017
- NAUI Nitrox Diver (@WHOI), 2016
- UMaine Laser Safety training, 2015
- AAUS Scientific Diver, 2014
- Scuba Diving International Rescue Diver certification, 2014
- UMaine Safe Zone training (sensitivity training re: LGBTQ+ people in the workplace), 2014
- PADI Rescue Diver certification, 2009
- Connecticut boating license, 2009
- PADI Advanced Open Water Diver certification, 2007