John Ragland

Falmouth, MA john.ragland@whoi.edu john-ragland john-ragland

Education

BS **Auburn University**, Electrical Engineering 2019
- Graduated **Summa Cum Laude**

MS **Auburn University**, Electrical Engineering 2020
- **Thesis**: Digital Simulation and Recreation of a Vacuum Tube Guitar Amp url
- **Advisor**: Thaddeus Roppel
- **Emphasis** Digital Signal Processing, Real-time Audio Processing, Physical Modeling

PhD **University of Washington**, Electrical Engineering 2024
- **Thesis**: Using coherent ambient sound to probe the ocean url
- **Advisor**: Shima Abadi
- **Emphasis**: Acoustic Oceanography: Ambient noise interferometry and ocean acoustic tomography

Experience

Woods Hole Oceanographic Institution, Postdoctoral Fellow — Woods Hole, MA, 2025 - present

University of Washington, Postdoctoral Scholar — Seattle, WA, 2024 - 2025

University of Washington, Graduate researcher — Seattle, WA, 2020 - 2024

Applied Research in acoustics, Graduate summer researcher — Seattle, WA, 2022

Peer Reviewed Publications

- *How Do Tides Affect Underwater Acoustic Propagation: A collaborative approach to improve internal wave modelling at basin to global scales* 10.5670/oceanog.2025.308 - Schönau, Hiron, **Ragland**, Raja, Skitka, Solano, Xu, Arbic, Buijsman, Chassignet, Coelho, Helber, Shriver, Summers, Verlinden, Wallcraft (2025)
- *Characterizing wind-dependent low-frequency ambient sound with ocean observatories initiative hydrophones* 10.1121/10.0039811 - **Ragland**, Abadi (2025)
- *Receptions of Kauai Beacon transmissions by ocean observatories initiative hydrophones* 10.1121/10.0038971 - **Ragland**, Abadi, Durofchalk, Dall'Osto, Gemba (2025)
- *Using Ocean Ambient Sound to Measure Local Integrated Deep Ocean Temperature* 10.1029/2024GL108943 - **Ragland**, Abadi, Sabra (2024)
- *Exploring surface source contributions to ocean ambient noise interferometry with airgun shots* 10.1121/10.0015231 - **Ragland**, Abadi (2022)
- *An overview of ambient sound using Ocean Observatories Initiative hydrophones* 10.1121/10.0009836 - **Ragland**, Schwock, Munson, Abadi (2022)
- *Long-term noise interferometry analysis in the northeast Pacific Ocean* 10.1121/10.0009232 - **Ragland**, Abadi, Sabra (2022)
- *Test Article* test - Newton (0)

Invited Talks

- MG&G Group, University of Washington, Seattle WA (2024)
- Navy Research Laboratory, Ocean Sciences Division, Stennis MS (2023)
- MG&G Group, University of Washington, Seattle WA (2023)
- Applied Research Laboratory - UW, Seattle WA (2022)

Awards

- **eScience postdoctoral fellowship** (Sept 2024) - University of Washington, eScience Institute: Fellowship awarded to interdisciplinary researchers who are actively involved in developing and/or utilizing advanced data science tools and techniques in their research at the UW
- **The Daoma and Murray Strasberg Memorial Scholarship** (May 2023) - Acoustical Society of America: Awarded to exceptional graduate students in ocean acoustics with research relevant to naval applications to ocean acoustics
- **ASA best student paper** (Dec 2022) - Acoustical Society of America: Second place at the ASA Nashville in underwater acoustics technical committee

Conference Presentations

- *Comparing Kauai Beacon receptions to simulated acoustic propagation* (10.1121/10.0037361) - **Ragland**, Durofchalk, Dall'Osto, Abadi, Gemba (2025) - 188th Meeting of the Acoustical Society of America
- *Analysis of very low frequency wind driven noise at Ocean Observatories Initiative hydrophones* (10.1121/10.0037493) - **Ragland**, Phan, Abadi (2025) - 188th Meeting of the Acoustical Society of America
- *Kauai Beacon receptions and analysis with open-access hydrophones in the North Pacific Ocean* (10.1121/10.0026938) - **Ragland**, Durofchalk, Gemba, Dall'Osto, Abadi (2024) - 186th Meeting of the Acoustical Society of America
- *Towards acoustic observations of ocean basin temperatures using the Kauai beacon and Ocean Observatories Initiative Hydrophones* - **Ragland**, Durofchalk, Abadi, Dall'Osto, Gemba (2024) - Ocean Sciences Meeting 2024
- *Detecting the Kauai source beacon with ocean observatories innitiative hydrophones* (10.1121/10.0023175) - **Ragland**, Durofchalk, Gemba, Abadi (2023) - 185th Meeting of the Acoustical Society of America
- *Using ocean ambient sound to sense arrival time fluctuations due to temperature* (10.1121/10.0023334) - **Ragland**, Abadi (2023) - 185th Meeting of the Acoustical Society of America
- *Using distributed acoustic sensing for ocean ambient sound analysis* (10.1121/10.0018176) - **Ragland**, Douglass, Abadi (2023) - 184th Meeting of the Acoustical Society of America
- *Towards estimating water column properties using ambient noise interferometry in the deep ocean* - **Ragland**, Abadi (2023) - Underwater Acoustics Conference and Exposition
- *Overview of distributed acoustic sensing technology and recently acquired data sets* (10.1121/10.0018174) - Douglass, **Ragland**, Abadi (2023) - 184th Meeting of the Acoustical Society of America
- *Comparing distributed acoustic sensing data with hydrophone recordings* (10.1121/10.0018175) - Abadi, Douglass, **Ragland** (2023) - 184th Meeting of the Acoustical Society of America
- *Long-term ambient noise interferometry in the NE Pacific deep ocean* - **Ragland**, Abadi (2022) - Ocean Sciences Meeting 2022
- *Overview of ambient noise research and outreach with OOI hydrophones* - **Ragland**, Schwock, Liu, Abadi (2022) - AGU Fall Meeting 2022
- *Overview of ocean ambient noise interferometry – Theory and simulation* (10.1121/10.0016311) - **Ragland**, Abadi (2022) - 183th Meeting of the Acoustical Society of America

- *Exploring surface source distributions for ocean ambient noise interferometry with airgun shots* (10.1121/10.0011063) - **Ragland**, Abadi (2022) - 182th Meeting of the Acoustical Society of America
- *OOIPy: A Python toolbox for accessing and analyzing sata from the Ocean Observatories Initiative* (10.1121/10.0007845) - Schwock, **Ragland**, Abadi (2021) - 180th Meeting of the Acoustical Society of America
- *An overview of ambient sound using OOI hydrophone network* (10.1121/10.0007594) - **Ragland**, Schwock, Munson, Abadi (2021) - 180th Meeting of the Acoustical Society of America
- *Long-term noise interferometry analysis in the northeast Pacific Ocean* (10.1121/10.0004609) - **Ragland**, Abadi (2021) - 179th Meeting of the Acoustical Society of America
- *Estimating ocean variables using ambient noise interferometry* (10.1121/10.0007697) - **Ragland**, Abadi (2021) - 180th Meeting of the Acoustical Society of America
- *Ship detection from passive underwater acoustic recordings using machine learning* (10.1121/10.0007848) - Alvaro, Schwock, **Ragland**, Abadi (2021) - 180th Meeting of the Acoustical Society of America

Media Coverage

- Listening to the ocean to measure the impact of climate change
- OOI Science Highlights: An Overview of Ambient Sound Using OOI Hydrophones

Cruise Experience

- RC0090, 2022, 2 days - deployed mooring with two hydrophones that was recovered one week later. The goal of this deployment was to acoustically measure methane seeps in the Puget Sound.
- RR2411, 2024, 21 days - joint operation to measure deep scattering layer, and low-frequency acoustic propagation around seamounts in the North Atlantic.
- AR90, 2025, 21 days - recovered NESMA acoustic moorings in North Atlantic

Open Source Software Contributions

- **OOIPy** - python package for accessing OOI hydrophone data GitHub PyPI DOI
- **xrsignal** - python package that ports functionality from scipy.signal to xarray and is compatible with distributed computing GitHub PypI
- **pygenray** - native python ray tracing code GitHub PyPI DOI