

# Robert Levine

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## Education

- 2021 **PhD, Oceanography**, University of Washington, Seattle, WA.
- 2014 **MS, Geological Sciences**, Cornell University, Ithaca, NY.
- 2012 **BS, Environmental Science**, Cornell University, Ithaca, NY.

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## Professional Experience

- 2022– **Research Physical Scientist**, NOAA Alaska Fisheries Science Center, Seattle, WA.
- 2022 **Postdoctoral Scholar**, UW Applied Physics Laboratory, Seattle, WA.
- 2016–2021 **Graduate Research Assistant**, UW School of Oceanography, Seattle, WA.
- 2014–2016 **Scientist III - Advanced Sampling Technology Contractor**, Ocean Associates, Incorporated (Contracted to NOAA Alaska Fisheries Science Center), Seattle, WA.

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## Publications

### *Published*

- In press* **Levine R**, De Robertis A, Grünbaum D, Wildes S, Farley EV, Stabeno PJ, Wilson CD. (*In press*). Climate-driven shifts in pelagic fish distributions in a rapidly changing Pacific Arctic. *Deep-Sea Research Part II: Topical Studies in Oceanography*.
- 2023 Cooper D, Cieciel K, Copeman L, Emelin P, Logerwell E, Ferm N, Lamb J, **Levine R**, Axler K, Woodgate RA, Britt L, Lauth R, Laurel B, Orlov AM. (2023). Pacific cod or tikhookeanskaya treska (*Gadus macrocephalus*) in the Chukchi Sea during recent warm years: Distribution by life stage and age-0 diet and condition. *Deep-Sea Research Part II: Topical Studies in Oceanography*. dx.doi.org/10.1016/j.dsr2.2022.105241.
- 2023 De Robertis A, **Levine R**, Willaims K, Wilson CD. (2023). Modifying a trawl to better retain small Arctic fishes. *Deep-Sea Research Part II: Topical Studies in Oceanography*. dx.doi.org/10.1016/j.dsr2.2022.105225.
- 2022 Baker M, De Robertis A, **Levine R**, Cooper D, Farley E. (2022). Spatial distribution of Arctic sand lance in the Chukchi Sea related to the physical environment. *Deep-Sea Research Part II: Topical Studies in Oceanography*. dx.doi.org/10.1016/j.dsr2.2022.105213.
- 2022 Wildes S, Whittle J, Nguyen H, Marsh M, Karpan K, D'Amelio K, Diamond A, Cieciel K, De Robertis A, **Levine R**, Larson W, Guyon J. (2022). Walleye Pollock breach the Bering Strait: A change of the cods in the Arctic. *Deep-Sea Research Part II: Topical Studies in Oceanography*. dx.doi.org/10.1016/j.dsr2.2022.105165.
- 2022 Stafford K, Farley E, Ferguson M, Kuletz K, **Levine R**. (2022). Northward range expansion of subarctic upper trophic level animals into the Arctic. *Oceanography*. dx.doi.org/10.5670/oceanog.2022.101.
- 2021 **Levine R**, De Robertis A, Grünbaum D, Woodgate R, Mordy C, Mueter F, Cokelet E, Lawrence-Slavas N, Tabisola H. (2021). Autonomous vehicle surveys indicate that flow reversals retain juvenile fishes in a highly advective high-latitude ecosystem. *Limnology and Oceanography* 66:1139–1154. dx.doi.org/10.1002/lno.11671.
- 2020 **Levine R**, Fogaren KE, Rudzin JE, Russoniello CJ, Soule DC, Whitaker JM. (2020). Open data, collaborative working platforms, and interdisciplinary collaboration: building an Early Career Scientist community of practice to leverage Ocean Observatories Initiative data to address critical questions in marine science. *Frontiers in Marine Science*. dx.doi.org/10.3389/fmars.2020.593512.

- 2020 **Levine R**, Seroy S, Grünbaum D. (2020). Sound and the Seafloor: Determining bathymetry using student-built acoustic sensors. *Oceanography* 33:71–77. [dx.doi.org/10.5670/oceanog.2020.305](https://doi.org/10.5670/oceanog.2020.305).
- 2020 Huntington HP, Danielson SL, Wiese FK, Baker M, Boveng P, Citta JJ, De Robertis A, Dickson DM, Farley E, George JC, Iken K, Kimmel DG, Kuletz K, Ladd C, **Levine R**, Quakenbush L, Stabeno P, Stafford KM, Stockwell D, Wilson C. (2020). Evidence suggests potential transformation of the Pacific Arctic ecosystem is underway. *Nature Climate Change* 10:342–348. [dx.doi.org/10.1038/s41558-020-0695-2](https://doi.org/10.1038/s41558-020-0695-2).
- 2018 De Robertis A, **Levine R**, Wilson CD. (2018). Can a bottom-moored echo sounder array provide a survey-comparable index of abundance? *Canadian Journal of Fisheries and Aquatic Sciences* 75:629–640. [dx.doi.org/10.1139/cjfas-2017-0013](https://doi.org/10.1139/cjfas-2017-0013).

#### *Upcoming*

- In revision* **Levine R**, De Robertis A, Grünbaum D, Wilson CD. (*In revision*). Seasonality in the transport and abundance of pelagic fishes in the Chukchi Sea from seafloor-mounted echosounders. *ICES Journal of Marine Science*.

#### *Non-refereed*

- 2021 **Levine R**. (2021). Climate-driven shifts in abundance, distribution, and composition of the pelagic fish community in a rapidly changing Pacific Arctic (Thesis). *University of Washington*. <http://hdl.handle.net/1773/48305>.
- 2020 **Levine R**. (2020). Environmental drivers of pelagic fish distribution in the U.S. continental shelf region of the Chukchi Sea. *Electronic Journal of Applied Multivariate Statistics* 10:51–65. [hdl.handle.net/1773/19723](http://hdl.handle.net/1773/19723).
- 2014 **Levine R**. (2014). Temporal and Spatial Variability in Euphausiid Abundance, Biomass, and Species Composition at the Northwest Atlantic Shelf Break and Its Canyons (Thesis). *Cornell University*. [hdl.handle.net/1813/38916](http://hdl.handle.net/1813/38916).

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### Invited Presentations

- 2023 First Look at Acoustic Data from Upward Facing Sonars on U.S.-Russia Maritime Boundary Line. Pollock Conservation Cooperative 2023 Skippers Meeting, Seattle, WA. January 2023.
- 2021 Climate-driven changes in abundance, distribution, and composition of the pelagic fish community in the Chukchi Sea. NOAA in Alaska and the Arctic Seminar Series, Virtual. October 2021.
- 2021 A multiplatform investigation of pelagic fishes in a changing Pacific Arctic. NOAA NWFSC Monster Seminar Jam 2021 Spring Seminar Series, Seattle, WA. May 2021.
- 2019 Are age-0 Arctic cod retained over the Chukchi Sea shelf during summer? NOAA EcoFOCI 2019 Fall Seminar Series, Seattle, WA. November 2019.

#### *Departmental Seminars*

- 2021 Go with the flow: Climate-driven transition of the pelagic fish community in the Chukchi Sea. UW Biological Oceanography Lunch Seminar Spring Seminar Series, Seattle, WA. May 2021.
- 2019 Are age-0 Arctic cod retained over the Chukchi Sea shelf during summer? UW Biological Oceanography Lunch Seminar Fall Seminar Series, Seattle, WA. November 2019.
- 2018 The role of the Chukchi Sea as a nursery for Arctic cod (*Boreogadus saida*). UW Biological Oceanography Lunch Seminar Fall Seminar Series, Seattle, WA. December 2018.
- 2018 Does the Chukchi Sea Serve as a Nursery for Arctic Fishes? UW Biological Oceanography Lunch Seminar Fall Seminar Series, Seattle, WA. January 2018.
- 2017 Does the Chukchi Sea Serve as a Nursery for Arctic Fishes? UW Oceanography Second Year Symposium, Seattle, WA. November 2017.

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### Conference Abstracts

- 2022 Seroy S, McKinley C, **Levine R**. Student-built acoustic sensors for hands-on learning in the earth sciences. Earth Educators' Rendezvous, *Minneapolis, MN*. July 2022.

- 2022 **Levine R**, De Robertis A, Grünbaum D, Wilson C. Climate-driven shifts in abundance, distribution, and composition of the age-0 gadid community in the eastern Chukchi Sea. Ecosystem Studies of the Subarctic and Arctic Seas Annual Meeting, *Seattle, WA*. June 2022.
- 2022 **Levine R**, De Robertis A, Grünbaum D, Wildes S, Farley E, Stabeno P, Wilson C. Climate-driven changes in abundance, distribution, and composition of the pelagic fish community in the Chukchi Sea. Ocean Sciences, *Virtual*. March 2022.
- 2022 **Levine R**, De Robertis A, Grünbaum D, Wildes S, Farley E, Stabeno P, Wilson C. Climate-driven changes in abundance, distribution, and composition of the pelagic fish community in the Chukchi Sea. Alaska Marine Science Symposium, *Virtual*. January 2022.
- 2021 **Levine R**, De Robertis A, Grünbaum D, Wilson C. Where do the fish come from, and where do they go? Seasonal observations of pelagic fishes from echosounder moorings in the Chukchi Sea. Acoustical Society of America, *Seattle, WA*. November 2021.
- 2021 Seroy S, Esparza J, **Levine R**, Wyeth A, Grünbaum D. PublicSensors: Integrating student-built environmental sensors for community science into the classroom. Earth Educators' Rendezvous, *Virtual*. July 2021.
- 2021 **Levine R**, De Robertis A, Grünbaum D, Wilson C, Farley E, Mordy C, Stabeno P. A multiplatform acoustic-based approach to classifying abundance, distribution, and transport of age-0 gadids on the Chukchi shelf. ICES WGFASST, *Virtual*. April 2021.
- 2021 De Robertis A, **Levine R**, Williams K, Wilson C. Modifying a survey trawl to better retain small Arctic fishes. ICES JFATB, *Virtual*. April 2021.
- 2021 **Levine R**, De Robertis A, Grünbaum D, Wilson C, Farley E, Mordy C, Stabeno P. Where do they come from, and where do they go? Abundance, distribution, and transport of age-0 gadids on the Chukchi shelf. Alaska Marine Science Symposium, *Virtual*. January 2021.
- 2021 Cooper D, Logerwell E, Emelin P, Cieciel K, **Levine R**, Axler K, Britt L, Woodgate R, Orlov A. Pacific cod or Treska (*Gadus macrocephalus*) in the Chukchi Sea. Alaska Marine Science Symposium, *Virtual*. January 2021.
- 2020 Esparza J, Seroy S, **Levine R**, Wyeth A, Crouser D, Clay Burns T, Grünbaum D. The PublicSensors Project: Fostering community science through student-built environmental sensors. SCCS-NY, New York, NY. October 2020.
- 2020 **Levine R**, De Robertis A, Wilson C, Grünbaum D, Farley E. Preliminary results of a 2019 acoustic-trawl survey in the U.S. Continental Shelf Region of the Chukchi Sea. Alaska Marine Science Symposium, Anchorage, AK. February 2020.
- 2020 **Levine R**, De Robertis A, Grünbaum D, Woodgate R, Mordy C, Cokelet E, Lawrence-Slavas N, Tabisola H. Summer 2018 repeat autonomous vehicle surveys indicate age-0 Arctic cod are largely retained over the Chukchi Sea shelf. Alaska Marine Science Symposium, Anchorage, AK. February 2020.
- 2020 **Levine R**, De Robertis A, Grünbaum D, Woodgate R, Mordy C, Cokelet E, Lawrence-Slavas N, Tabisola H. Summer 2018 repeat autonomous vehicle surveys indicate age-0 Arctic cod are largely retained over the Chukchi Sea shelf. Ocean Sciences, San Diego, CA. February 2020.
- 2020 Cooper D, Cieciel K, Logerwell E, Fern N, **Levine R**, Lauth R, Britt L, Ciannelli L. Distribution and Diet of age-0 Pacific Cod in the Chukchi Sea in 2012 and 2017. Alaska Marine Science Symposium, Anchorage, AK. February 2020.
- 2019 Stopa J, Fogaren K, Kupchik MJ, **Levine R**, Philip BT, Rudzin JE, Russoniello CJ, Whitaker J. The Ocean Observatories Initiative: a catalyst for early-career, interdisciplinary research. OceanObs, Honolulu, HI. September 2019.
- 2019 Deemer G, Lyons A, Bassett C, **Levine R**. Characterizing the high-frequency acoustic response from sea ice over one season of natural environmental forcing in the Chukchi Sea. Underwater Acoustics Conference and Exhibition, Hersonissos, Crete. July 2019.
- 2019 **Levine R**, De Robertis A, Wilson C, Grünbaum D, Mordy C, Meinig C, Tabisola H. Observations of Fishes in the U.S. Continental Shelf Region of the Chukchi Sea from Autonomous Vehicles and Moorings. Alaska Marine Science Symposium, Anchorage, AK. January 2019.

- 2018 **Levine R**, De Robertis A, Wilson C, Farley E, Grünbaum D. Field Studies to Investigate the Fate of Juvenile Arctic Cod in the U.S. Continental Shelf Region of the Chukchi Sea. Ecosystem Studies of Subarctic and Arctic Seas Annual Science Meeting, Fairbanks, AK. June 2018.
- 2018 **Levine R**, De Robertis A, Wilson C, Farley E. Field Studies to Investigate the Fate of Juvenile Arctic Cod in the U.S. Continental Shelf Region of the Chukchi Sea. Alaska Marine Science Symposium, Anchorage, AK. January 2018.
- 2017 De Robertis A, **Levine R**, Wilson C. Can a bottom-moored echosounder array provide a survey-comparable index of abundance? ICES WGFASST Annual Meeting, Nelson, New Zealand. April 2017.
- 2014 **Levine R**, Lawson GL, Wiebe PH, Lavery AC, Greene CH, Copley NJ. Temporal and spatial variability in euphausiid abundance and species composition at the northwest Atlantic shelf break and its canyons. Ocean Sciences, Honolulu, HI. February 2014.
- 2011 Ceperley E, Delatolas N, L D, Huth A, **Levine R**, Mnich M, Moore A, Webster D, Yost J. The Carbon-Neutral Classroom: A User's Guide. Geological Society of America Meeting, Minneapolis, MN. November 2011.

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## Teaching Experience

- Fall 2022 **Guest Lecturer**, *Intro to Environmental Monitoring and Technology*, UW School of Oceanography. Field applications of active acoustics
- Winter 2022 **Guest Lecturer**, *Ocean Technology*, UW School of Oceanography. Field applications of active acoustics for fisheries oceanography.
- Spring 2021 **Guest Lecturer**, *Oceanography*, UC Davis Earth and Planetary Sciences. Arctic circulation and ecological impact of sea ice reduction.
- Spring 2021 **Guest Lecturer**, *Arctic Change*, UW School of Oceanography. Role of sea ice in Pacific Arctic fisheries.
- Winter 2019 **Guest Lecturer**, *Foundations of Ocean Sensors*, UW School of Oceanography. Microcontroller activity to measure speed of sound and conduct bathymetric survey.
- Spring 2018 **Guest Lecturer**, *Marine Zooplankton Ecology*, UW School of Oceanography. Application of active acoustics for zooplankton ecology.
- Winter 2018 **Teaching Assistant**, *Foundations of Ocean Sensors*, UW School of Oceanography. Assisted with course activities and designed module using ultrasonic acoustic sensors.
- Fall 2013 **Teaching Assistant**, *Introductory Oceanography*, Cornell University. Designed and led laboratory sections, assisted with design and grading of lecture component.
- Summer 2013 **Teaching Assistant**, *Marine Bioacoustics Workshop*, Friday Harbor Laboratories. Classroom and field assistant, guest lecturer for forward calculations and vessel calibration.
- Summer 2013 **Teaching Assistant**, *Satellite Remote Sensing Training Program*, Cornell University. Assisted with computer-based exercises using NASA SeaDAS and Python.
- Fall 2012 **Teaching Assistant**, *Introductory Oceanography*, Cornell University. Designed and led laboratory sections, assisted with design and grading of lecture component.
- Summer 2011 **Teaching Assistant**, *Satellite Remote Sensing Training Program*, Cornell University. Assisted with computer-based exercises using NASA SeaDAS and IDL.

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## Funding and Grants

- 2020 Diversity Funding Award (awarded to PublicSensors), *UW College of the Environment*
- 2014 Graduate Conference Grant, *Cornell University*

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## Awards and Honors

- 2021 Best Student Oral Presentation *Alaska Marine Science Symposium*

- 2020 Best Student Poster Presentation, *Alaska Marine Science Symposium*
- 2018 Science Communication Fellow, *Pacific Science Center*
- 2014 Bryan Isaacks Excellence in Teaching Award, *Cornell University*

## Workshops and Training Courses

- 2021 XSEDE HPC Workshop: Big Data and Machine Learning
- 2020 OceanHackWeek 2020, University of Washington, WA
- 2019 Principles and Methods of Broadband/Wideband Technologies ICES Training Course, Bergen, Norway
- 2019 OOI Data Labs Development Workshop, Pacific Grove, CA
- 2019 OOI Early Career Scientist Interdisciplinary Workshop, Washington, D.C.
- 2018 OOI Early Career Biology Data Workshop, Rutgers University, NJ
- 2018 UW Cabled Array Hack Week, University of Washington, WA
- 2011 Bioacoustical Oceanography Workshop, Friday Harbor Laboratories, WA

## Outreach

- 2020–present Program Developer, PublicSensors.org *Educational initiative providing kits and instruction for hands-on learning with microcontroller-based environmental sensors. Lead K-12 student workshops and teacher professional development programs.*
- 2020 Meet a Scientist, Pacific Science Center Camps for Curious Minds *Present and answer questions on underwater acoustics and Arctic ecology.*
- 2018–2020 Meet a Polar Scientist, Pacific Science Center *Present ecology and dynamics of the Pacific Arctic as part of a live planetarium show titled "Pole to Pole".*
- 2019 Co-Program Leader, UW Aquatic Sciences Open House *Table activity demonstrating microcontroller-based marine sensors.*
- 2018 Co-Program Leader, Pacific Science Center Polar Science Weekend *Hands-on activities exploring microbial life in sea ice.*
- 2017–2018 Facilitator, UW SeaState *Conducted sensor building programs in high school chemistry and oceanography classes in Sequim and South Kitsap, WA in which the students build and use photospectrometers to explore changes in pH.*

## Service

### University

- 2020 Series Organizer, UW College of the Environment Beyond Academia Speaker Series
- 2019–2020 UW College of the Environment Student Advisory Council Graduate Senate Liaison
- 2018–2020 Elections Committee, UW Graduate and Professional Student Senate
- 2017–2020 School of Oceanography Senator, UW Graduate and Professional Student Senate
- 2018–2019 Officer, UW Academic and Recreational Graduate Oceanographers

### Conferences

- 2019 Session chair of "Arctic Fishes and Fish Habitat" at Alaska Marine Science Symposium, Anchorage, AK.

### Reviewer

*Oceanography, Polar Biology, Frontiers in Marine Science*

## Field Experience

- 2019 **R/V G.O. Sars**, ICES Broadband Workshop, 7 days, Veafjorden.
- 2019 **R/V Ocean Starr**, NPRB Arctic IERP, 40 days, Chukchi and Beaufort Seas.

- 2018 **USCGC Healy**, *DBO-NCIS Program*, 19 days, Chukchi and Beaufort Seas.
- 2017 **R/V Ocean Starr**, *NPRB Arctic IERP*, 36 days, Chukchi and Beaufort Seas.
- 2016 **NOAAS Oscar Dyson**, *Pollock Acoustic-Trawl Survey*, 40 days, Bering Sea.
- 2015 **NOAAS Oscar Dyson**, *Pollock Acoustic-Trawl Survey*, 77 days, Gulf of Alaska.
- 2014 **NOAAS Oscar Dyson**, *Pollock Acoustic-Trawl Survey*, 38 days, Bering Sea.
- 2014 **R/V Tioga**, *WHOI OAPS*, 4 days, Gulf of Maine.
- 2013 **R/V Centennial**, *FHL Bioacoustics Workshop*, 2 days, Puget Sound.
- 2012 **R/V New Horizon**, *WHOI OAPS*, 13 days, Northeast Pacific.
- 2011 **R/V Centennial**, *FHL Bioacoustics Workshop*, 2 days, Puget Sound.