

Selene Fregosi, PhD

Research Bioacoustician
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Research Interests and Expertise

- Ocean acoustics
- Marine technology
- Population density estimation
- Marine mammal ecology and conservation

Education

Ph.D. Wildlife Science, Oregon State University 2020
Dissertation: Applications of slow-moving platforms for passive acoustic monitoring and density estimation of marine mammals

M.Sc. Wildlife Science, Oregon State University 2015
Thesis: Development and evaluation of an animal-borne active acoustic tag to conduct minimally invasive behavioral response studies on marine mammals

B.A. Marine Science, University of San Diego 2009
Concentration: Biology. Minor: Chemistry. Honors: *magna cum laude*

Relevant Coursework

Animal Bioacoustics, Biological Oceanography, Conservation Biology, Geographic Information Systems and Science, Mammal Conservation and Management, Marine Community Ecology, Methods of Data Analysis I & II, Physical and Chemical Oceanography, Wildlife Ecology.

Professional Experience

Cetacean Acoustician November 2020 - present
Ocean Associates, Inc. *contracted in support of*
Cetacean Research Program, NOAA Pacific Islands Fisheries Science Center, Honolulu, HI, USA
40 hours/week

- Coordinate deployments of passive acoustic recorders with volunteer longline fishery vessels to monitor for endangered false killer whale depredation and interaction events, curate project protocols and data management, analyze collected acoustic data for vessel noise and false killer whale vocalizations, and produce reports and presentations on project results for funding agencies, non-governmental stakeholders, and review boards
- Prepare and pilot gliders for passive acoustic surveys of cetaceans around the Main Hawaiian Islands, develop piloting and analysis tools (computer programming) for passive acoustic glider data, conduct statistical analyses of acoustic data and supervise analyst through additional analyses, present results to funding agency and at professional conferences, and develop proposals for future glider-based population assessments
- Openscapes Champions Cohort, Fall 2022, Open science professional development

Research Affiliate April 2022 - present
Cooperative Institute for Marine Ecosystem and Resources Studies
Oregon State University and NOAA Pacific Marine Environmental Laboratory, Newport, OR, USA
10 hours/week

- Field survey planning and organization, Seaglider pilot and maintenance, and collaborator on NOAA UxSRTO-funded passive acoustic glider project

Postdoctoral Research Associate

September 2022 - present

Associate Scientist I

April 2011 - August 2022

Southall Environmental Associates, Inc., Aptos, CA, USA

<8 hours/week

- Field-based experimental research to assess behavioral and vocal response of cetaceans to simulated mid-frequency sonar from shore, small boat, and ship-based monitoring platforms

Postdoctoral Researcher

July - November 2020

Cooperative Institute for Marine Ecosystem and Resources Studies

Oregon State University and NOAA Pacific Marine Environmental Laboratory, Newport, OR, USA

40 hours/week

- Development of machine learning based porpoise click detector and programmatic standardized reporting system

Graduate Research Fellow

April 2013 - June 2020

Cooperative Institute for Marine Ecosystem and Resources Studies

Oregon State University and NOAA Pacific Marine Environmental Laboratory, Newport, OR, USA *and*

Department of Fisheries and Wildlife, Corvallis, OR, USA

20 hours/week

- Quantitative assessment of potential uses of deep-water gliders and floats for improved passive acoustic monitoring of marine mammals for understanding marine mammal distribution and ecology and development of population assessment methods
- Development and statistical evaluation of a novel animal-borne sensor for experimental assessment of pinniped responses to anthropogenic noise to better understand the impacts of noise on marine mammals
- Analyzed passive acoustic recordings for beaked whales and other odontocetes

Wildlife Biologist

May – October 2012 & May – August 2011

Duckworth Lab, University of Arizona, Missoula, MT, USA

40 hours/week

- Field team lead for long term study of bluebird behavioral and evolutionary ecology including experimental trials and training of field technicians

Research Assistant

November 2011 - April 2012

Intern

October 2010 – March 2011

Pinniped Cognition and Sensory Systems Lab

University of California, Santa Cruz, Santa Cruz, CA, USA

40 hours/week

- Husbandry and training of captive pinnipeds for cognition and hearing research, experimental monitoring of behavior and ecology of a wild Northern elephant seal colony

Field Research Experience

Cooperative Institute for Marine Ecosystem and Resources Studies, Oregon State University/NOAA Pacific Marine Environmental Laboratory

- AUV piloting: Apr-Jun 2022, SG639 & SG680 – Main Hawaiian Islands; Feb-Mar 2020, SG607 & SG639 – Southern California; May-Jun 2018, SG639 – Gulf of Mexico; Jun-Jul 2017, SG607 – Gulf of Mexico; May 2017, SG607 & SG639 – Oregon; Jul-Aug 2016, SG607 & Q003 – Southern California;

Dec 2015 – Jan 2016, SG158, Q001 & Q002 – Southern California; Jun-Jul 2015, SG608 – Gulf of Mexico; May 2015, SG607 & SG608 – Oregon; Apr 2015, SG607 & Q003 – Washington; Oct 2014, SG607 – Oregon; Mar 2014, SG158 – Oregon

- Ship-based activities: day trips 2013-2018, Newport, OR – glider deployments; 18 July – 3 August 2016, *M/V Horizon*, San Diego, CA, *M/V Vibrio*, Two Harbors, CA - Glider, float, moored hydrophone, and buoy deployment, daily re-positioning, and recovery; 20-23 December 2015 and 4-6 January 2016, *U.S. Navy RSC-4*, Point Loma, CA – Glider and float deployment and recovery
- Shore-based activities: visual surveys and theodolite tracking of migrating grey whales, Newport, OR, Feb-Mar 2013; Northern elephant seal tagging and translocation experiments, Año Nuevo, CA Mar-Apr 2012

Southall Environmental Associates, Inc.

- Ship-based activities: 2-4 weeks/yr 2012-2022, *M/V Truth*, Santa Barbara, CA, *M/V Magician*, San Pedro, CA, *R/V Ziphid* and *Musculus* (RHIBs) – tagging, focal follow, photo id, passive/active acoustics
- Shore-based activities: theodolite tracking of delphinid species during controlled exposure experiments, Two Harbors, CA, Oct-Dec 2022

University of Arizona

- Passerine bird nest monitoring, banding, hormone sampling, and behavioral monitoring, Missoula, MT, May-Oct 2012, May-Aug 2011

University of California, Santa Cruz

- Rookery composition and behavior monitoring, passive acoustic recording, animal tracking, and playback experiments with Northern elephant seals, Año Nuevo, CA and Piedras Blancas, CA, Dec-Mar 2012, Dec-Mar 2011

Publications

*indicates undergraduate mentee

1. **Fregosi, S**, Harris, DV, Matsumoto, H, Mellinger, DK, Martin, SW, Matsuyama, B, Barlow, J, and Klinck, H. (2022). Detection probability and density estimation of fin whales by a Seaglider. *Journal of the Acoustical Society of America*, 152(4): 2277-2291. [doi:10.1121/10.0014793](https://doi.org/10.1121/10.0014793)
2. Durban, JW, Southall, BL, Calambokidis, J, Casey, C, Fearnbach, H, Joyce, TW, Fahlbusch, JA, Oudejans, MG, **Fregosi, S**, Friedlaender, AS, Keller, NM, Visser, F. (2022). Integrating remote sensing methods during controlled exposure experiments to quantify group responses of dolphins to navy sonar. *Marine Pollution Bulletin*, 174:113194. [doi:10.1016/j.marpolbul.2021.113194](https://doi.org/10.1016/j.marpolbul.2021.113194)
3. Oswald, JN, Walmsley, SF, Casey, C, **Fregosi, S**, Southall, BL, Janik, VM. (2021). Species information in whistle frequency modulation patterns of common dolphins. *Philosophical Transactions of the Royal Society B*, 376(1836): 20210046. [doi:10.1098/rstp.2021.0046](https://doi.org/10.1098/rstp.2021.0046)
4. Barlow, J, **Fregosi, S**, Thomas, L, Harris, D, Griffiths, ET. (2021). Acoustic detection range and population density of Cuvier's beaked whales estimated from near-surface hydrophones. *Journal of the Acoustical Society of America*, 149(1): 111-125. [doi:10.1121/10.0002881](https://doi.org/10.1121/10.0002881)
5. **Fregosi, S**, Harris, DV, Matsumoto, H, Mellinger, DK, Barlow, J, Baumann-Pickering, S, & Klinck, H. (2020). Detections of whale vocalizations by simultaneously deployed bottom-moored and deep-water mobile autonomous hydrophones. *Frontiers in Marine Science*, 7: 721. [doi:10.3389/fmars.2020.00721](https://doi.org/10.3389/fmars.2020.00721)
6. **Fregosi, S**, Harris, DV, Matsumoto, H, Mellinger, DK, Negretti*, C, Moretti, DJ, Martin, SW, Matsuyama, B, Dugan, P, Klinck, H. (2020). Comparable detections of fin whale 20 Hz calls by mobile

and stationary autonomous recorders. *Journal of the Acoustical Society of America*, 147(2): 961-977. doi:10.1121/10.0000617

7. Southall, BL, DeRuiter, S, Friedlaender, AS, Stimpert, AK, Goldbogen, J, Hazen, E, Casey, C, **Fregosi, S**, Cade, D, Allen, A, Harris, C, Falcone, E, Schorr, G, Moretti, DJ, Gailey, G, Guan, S, Calambokidis, J. (2019). Behavioral responses of individual blue whales (*Balaenoptera musculus*) to mid-frequency military sonar. *Journal of Experimental Biology*, 222(5): jeb190637. doi:10.1242/jeb.190637
8. Nieuwkirk, SL, **Fregosi, S**, Mellinger, DK, & Klinck, H. (2016). A complex baleen whale call recorded in the Marianas Trench Marine National Monument. *Journal of the Acoustical Society of America*, 140(3): EL1-6. doi:10.1121/1.4962377
9. **Fregosi, S**, Klinck, H, Horning, M, Mellinger, DK, Costa, DP, Mann, DA, Sexton, K, Hückstädt, L & Southall, BL. (2016). An animal-borne active acoustic tag for minimally invasive behavioral response studies on marine mammals. *Animal Biotelemetry*, 4: 9. doi:10.1186/s40317-016-0101-z
10. Klinck, H, **Fregosi, S**, Matsumoto, H, Turpin, A, Mellinger, DK, Erofeev, A, Barth, JA, Shearman, RK, Jafarmadar, K, & Stelzer, R. (2016). Mobile autonomous platforms for passive-acoustic monitoring of high-frequency cetaceans, in A. Friebe and F. Haug (Eds.), *Robotic Sailing 2015*, Springer International Publishing, pp. 29–37. doi:10.1007/978-3-319-23335-2_3
11. Matsumoto, H, Haxel, J, Turpin, A, **Fregosi, S**, Klinck, H, Klinck, K, Baumann-Pickering, S, Erofeev, A, Barth, JA, Dziak, RP, & Jones, C. (2015). Simultaneous operation of mobile acoustic recording systems off the Washington Coast for cetacean studies: System noise level evaluations, *Oceans 2015 MTS/IEEE, 19-22 October 2015*, Washington, D.C. doi: 10.23919/OCEANS.2015.7401830

In Revision or Review

Harris, DV, **Fregosi, S**, Klinck, H, Mellinger, DK, Thomas, L. (*In Revision*). Assessing the effect of ocean glider movement on distance sampling assumptions. *Remote Sensing in Ecology and Conservation*

Peer-reviewed Reports

8. **Fregosi, S**, Mellinger DK, & Ampela, K. (2020) Passive acoustic monitoring of large whales on and off the continental shelf of Southern California using autonomous underwater vehicles. Draft Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, San Diego, CA. Submitted to Naval Facilities Engineering Command Pacific (NAVFAC PAC), Pearl Harbor, HI under Contract No. N6247015D8006, Task Order 18F0147, issued to HDR Inc., San Diego, CA. November 2020.
9. Mellinger, DK & **Fregosi, S**. (2019). Assessment of ocean ambient sound levels in the northern Gulf of Mexico, May – June 2018. Preliminary Report. Prepared for the Bureau of Ocean Energy Management (BOEM), United States Department of the Interior under Contract No. M17PC00001, Task Order M17PD00011, issued to HDR Inc., Vienna, VA, USA. Prepared by Oregon State University, Newport, OR, USA. February 2019.
10. Klinck, H, Nieuwkirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2016). Cetacean Studies on the Kona Coast in March 2010: Passive Acoustic Monitoring of Marine Mammals Using Gliders – Results from an Engineering Test. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB25, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. April 2016. 36 pages.
11. Klinck, H, Nieuwkirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2016). Cetacean Studies in the Gulf of Alaska Temporary Maritime Activities Area in July-August

- 2015: Passive Acoustic Monitoring of Marine Mammals Using Gliders. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB25, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. March 2016. 44 pages.
12. Klinck, H, Nieukirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2016). Cetacean Studies on the Mariana Islands Range Complex in March-April 2015: Passive Acoustic Monitoring of Marine Mammals Using Gliders. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB25, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. March 2016. 52 pages.
 13. Klinck, H, Nieukirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2015). Cetacean Studies on the Quinault Range Site in June 2012: Passive Acoustic Monitoring of Marine Mammals Using Gliders – Results from an Engineering Test. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB25, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. November 2015. 33 pages.
 14. Klinck, H, Nieukirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2015). Cetacean Studies in the Hawaii Range Complex in December 2014–January 2015: Passive Acoustic Monitoring of Marine Mammals Using Gliders. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB23, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. October 2015. 58 pages.
 15. Klinck, H, Nieukirk, SL, **Fregosi, S**, Klinck, K, Mellinger, DK, Lastuka, S, Shilling, GB, & Luby, JC. (2015). Cetacean Studies on the Mariana Islands Range Complex in September–November 2014: Passive Acoustic Monitoring of Marine Mammals Using Gliders. Final Report. Prepared for Commander, U.S. Pacific Fleet, Environmental Readiness Division, Pearl Harbor, HI. Submitted to Naval Facilities Engineering Command (NAVFAC) Pacific, Pearl Harbor, HI under Contract No. N62470-10-D-3011, Task Order KB25, issued to HDR Inc., Honolulu, HI. Prepared by Oregon State University, Newport, OR, and the Applied Physics Laboratory of the University of Washington, Seattle, WA. August 2015. 50 pages

Research Grants

2021 Advancing remote marine mammal stock assessment with passive acoustic gliders, NOAA Applications of Uncrewed Systems Technology **\$830k** 2019 Autonomous Underwater Vehicle Passive Acoustic Monitoring of Beaked Whales in the Southern California Area, NAVFAC HDR Contract **\$260k**

Fellowships, Honors & Awards

2019 Briggs Scholarship in Biogeography, Oregon State University **\$1000** 2018 Oregon Lottery Graduate Scholarship, Oregon State University **\$2000** Bob Moch Memorial Endowment Service Award, Hatfield Student Organization **\$1000** Robert Anthony Graduate Scholarship in Population

Ecology, Oregon State University **\$2000** Graduate Student Travel Award, Oregon State University
 \$1000 Student Travel Subsidy, Acoustical Society of America **\$200** GoMRI Scholar, Gulf of Mexico
 Research Initiative 2017 Mamie L. Markham Research Award, Hatfield Marine Science Center **\$8000**
 Thomas G. Scott Grant Scholarship, outstanding PhD student, Oregon State University **\$2000** Lylian
 Brucefield Reynolds Scholarship Fund Award, Hatfield Marine Science Center **\$1000** Hatfield Student
 Organization Travel Award, Hatfield Marine Science Center **\$400** 2016 Chairman's Leadership Award,
 OSU Department of Fisheries and Wildlife **\$500** Student Travel Subsidy, Acoustical Society of America
 \$175 Mastin Student Travel Award, Oregon State University, Dec 2016 **\$1000** Hatfield Student
 Organization Travel Award, HMSC, OSU, Dec 2015 **\$250** 2015 Student Travel Support, DCLDE
 Workshop **\$1200** 2014 National Defense Science and Engineering Graduate Fellowship, American
 Society for Engineering Education & Office of Naval Research, 3 years **\$142k** Dr. Nancy Foster
 Scholarship, NOAA, declined 2014 Student Travel Support, 5th Biologging Science Symposium **\$1400**
 Mastin Student Travel Award, Oregon State University **\$2000** Hatfield Student Organization Travel
 Award, Hatfield Marine Science Center **\$250** 2013 Provost Distinguished Graduate Fellowship,
 Oregon State University **\$36k** Markham First Year Award, Hatfield Marine Science Center **\$6000**
 Laurel's Block Grant Tuition Scholarship, Oregon State University **\$6800** Student Travel Award,
 DCLDE Workshop **\$1200** Student Travel Award, Acoustical Society of America **\$120** 2009 Trustee
 Scholarship, University of San Diego **\$48k** 2005 Valedictorian, St. Patrick- St. Vincent High School

Organized Sessions

Connect the dots: Multi-target tracking in acoustics. Co-organizer with P. Grude and Y. Barkely. The
 9th International Workshop on Detection, Classification, Localization, and Density Estimation of Marine
 Mammals Using Passive Acoustics, Oahu, Hawai'i, USA March 2022

Selected Presentations

Invited

Fregosi, S, Harris, D, Mellinger DK, Barlow, J, Thomas, L, Klinck, H. Detection probability of Cuvier's
 beaked whale clicks from a glider and a deep-water float. 174th Meeting of the Acoustical Society of
 America, Victoria, BC, Canada, 4-10 Nov 2018

Contributed

Fregosi, S, Norris, E, Wood, M, Mellinger, DK, & Oleson, E. Advancing remote marine mammal stock
 assessment with passive acoustic gliders. *Underwater Glider User Group (UG2) Workshop*, Oral presentation.
 Seattle, WA, USA, 20-22 Sep 2022

Fregosi, S, Harris, DV, Matsumoto, H, Mellinger, DK, Martin, SW, Matsuyama, BM, Barlow, J, & Klinck,
 H. Detection probability and density estimation of fin whales by a Seaglider. *179th Meeting of the Acoustical
 Society of America*, Oral presentation. Virtual, 7-11 Dec 2020

Fregosi, S, Klinck, H., Matsumoto, H, Turpin, A, Martin, SW, Matsuyama, BM, Helble, TA, Henderson,
 EE, Moretti, DJ, Morrissey, RP, and Mellinger, DK. (2016). Simultaneous recordings of marine mammal
 calls by a glider, float, and cabled hydrophone array. *172nd meeting of the Acoustical Society of America*, Oral
 presentation. Honolulu, HI, USA, 28 Nov-3 Dec 2016

Fregosi, S, Klinck, H, Horning, M, Mellinger, DK, Costa, DP, Mann, DA, Sexton, K, Hückstädt, L &
 Southall, BL. Turn down for what: Animal-borne controlled exposure as an innovative tool for dive
 manipulation in free-ranging marine mammals. *21st Biennial Conference on the Biology of Marine Mammals*,
 Oral presentation. San Francisco, CA, USA, 12-18 December 2015

Fregosi, S, Klinck, H, Matsumoto, H, Turpin, A, Mellinger, DK, & Baumann-Pickering, S. Field comparison
 of PAM capabilities between a commercially available glider, a float, and a bottom-moored system. *The*

7th International Detection, Classification, Localization, and Density Estimation Workshop, Oral presentation. La Jolla, CA, USA, 13-16 July 2015

Fregosi, S, Klinck, H, Horning, M, Mellinger, DK, Costa, DP, Mann, DA, Sexton, K, Hückstädt, L & Southall, BL. (2014). Integration of an active acoustic playback system with an animal-borne sensor suite for behavioral response studies. *5th International Bio-logging Science Symposium*, Poster presentation. Strasbourg, France, 22-27 September 2014

Fregosi, S, Klinck, H, Horning, M, Mellinger, DK, Costa, DP, Mann, DA, Sexton, K, & Hückstädt, L. Use of an animal-borne active acoustic tag to conduct minimally-invasive behavioral response studies. *166th Meeting of the Acoustical Society of America*, Oral presentation. San Francisco, CA, USA, 2-6 December 2013

Fregosi, S, Klinck, H, Mellinger, DK, Bogue, NM, & Luby, JC. Acoustic observations of mid-frequency cetaceans in the eastern North Pacific using a glide. *Sixth International Workshop on Detection, Classification, Localization, and Density Estimation of Marine Mammals using Passive Acoustics*, Poster presentation, St. Andrews, Scotland, UK, 12-15 June 2013

Service and Outreach

Peer Review Activity

- NOAA: Research Article Internal Review (1), Hollings Scholar Applications
- Scientific manuscripts: *Animal Biotelemetry* (1), *Conservation Science and Practices* (1), *Deep-Sea Research Part I* (1), *Frontiers in Marine Science* (2), *Journal of the Acoustical Society of America* (1), *Marine Biology* (1), *Marine Ecology Progress Series* (2), *Marine Technology Society Journal* (1), *Scientific Reports* (1)

Professional Membership

Acoustical Society of Amercai, Animal Bioacoustics Technical Committee; Marine Techonology Society; Underwater Glider User Group

Commitment to Diversity, Equity, and Inclusion

I am committed to promoting and enhancing diversity, equity, and inclusion (DEI) in the sciences and work to educate myself and provide research and learning opportunities to historically excluded groups.

NOAA-led DEI Trainings - White Allyship DEI Training 2020 - Unconscious Bias DEI Training 2020 - Practical Ways to be an Ally DEI Training 2020

Participation in K-12 Outreach Programs - Mentor, Girls in Engineering and Marine Science, Oregon Coast STEM Hub, Hatfield Marine Science Center 2016 - 2018 - Mentor, Designing our World: A community Envisioning Girls as Enginners, Oregon Coast STEM Hub, Hatfield Marine Science Center 2016-2017 - NSF-funded program, included two-part training workshop for mentors

Selected Public Talks

- The How and Why of Using Underwater Gliders to Listen for Whales, Oregon Chapter of the American Cetacean Society, Newport Public Library, Newport, OR, USA 10 February 2018
- #SciComm: The Social Media – Science Connection. Monday Tech Talk, Hatfield Marine Science Center, Newport, OR, USA 2 February 2015.
- Do you speak whale? Oregon Chapter of the American Cetacean Society, Newport Public Library, Newport, OR, USA 13 December 2014.
- Bioacoustics of northern elephant seals. Año Nuevo State Park Docent Seminar, Año Nuevo, CA, USA January 2012.

Selected Community Involvement and Leadership

- Organizer, Wild About Wildlife Summer Camp, Oregon State University 2017-2018
- Hatfield Student Organization, Treasurer 2017 – 2018
- Hatfield Student Organization, Community Outreach Coordinator 2014 – 2017
- Fisheries and Wildlife Graduate Student Organization, Communication's Officer 2014 – 2017
- Volunteer, Marine Science Day, Hatfield Marine Science Center 2013-2017

Special Courses

Openscapes Champions NOAA SWFSC/PIFSC Fall Cohort, remote-by-design Fall 2022 - 10-week course in professional development and leadership in open science practices

Summer Course in Acoustic Communication, SNAK, University of Southern Denmark, Odense, Denmark 11-24 Aug 2017 - Advanced theoretical and practical course covering topics of terrestrial and marine animal acoustic communication

Seaglider Pilot Training, Kongsberg UTI, Lynnwood, WA, USA 23-27 June 2014 - Intensive hands-on training course for piloting Kongsberg Seagliders

SeaBASS (BioAcoustics Summer School), National Conference Center, Leesburg, Virginia, USA 16-20 June 2014 - One-week foundational graduate course on marine animal biology and acoustics

Introduction to Animal Bioacoustics, Oregon State University, Corvallis, OR, USA January-March 2013 - Graduate special topics course covering range of bioacoustics topics including sound recording and analysis, source-medium receiver theory, animal behavior and acoustic communication

Methods in Marine Bioacoustics, Duke University Marine Laboratory, Beaufort, NC, USA 12-24 August 2012 - Two-week course on basics of active and passive marine bioacoustics methodology including theory and hands on equipment and software training

Skills/Certifications

Experienced MATLAB and R programmer Acoustic analysis of low and high-frequency data, using various software and automated detection and classification (Osprey, Ishmael, Raven, Triton, Pamguard, Adobe Audition) Spatial analyses in ArcGIS and Matlab Pilot for underwater AUV's including Seaglider and APEX float American Boating Certification; experience with small boat driving, maintenance, and towing (including open ocean research activities) Physiological sample collection for avian and pinniped species including blood collection Captive marine mammal husbandry, behavioral observation, and health assessment