Christine M. Baker

CONTACT INFORMATION

Stanford University
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bakercm@stanford.edu
she/her/hers

CV Last Updated February 6, 2025

EDUCATION

Ph.D. Mar. 2023
Civil & Environmental Engineering, University of Washington,
Advisor: Dr. Melissa Moulton
Dissertation: *Surfzone vorticity dynamics in a directional wave basin*

M.Sc. Dec. 2019
Civil & Environmental Engineering, University of Washington,
Advisors: Drs. Nirnimesh Kumar & Melissa Moulton
Thesis: *Three-Dimensional Nearshore Currents and Eddies on an Alongshore-Variable Barred Beach*

B.Sc. Jun. 2017
Civil Engineering, Oregon State University,
Advisors: Drs. Judy Liu, Harry Yeh, & Christopher Higgins
Focus: *Tsunami Wave Impact on Metal Building Cladding*

PROFESSIONAL EXPERIENCE

Assistant Professor Jul. 2024 – Present
Dept. of Civil & Environmental Engineering
School of Engineering & Doerr School of Sustainability,
Stanford University, Palo Alto, CA

Postdoctoral Research Fellow Apr. 2023 – May 2024
Coastal Hazards Lab
Dept. of Civil, Construction, & Environmental Engineering
North Carolina State University, Raleigh, NC

Graduate Research & Teaching Assistant Sep. 2017 – Mar. 2023
Environmental Fluid Mechanics Group
Dept. of Civil & Environmental Engineering
University of Washington, Seattle, WA

Army Corps Visiting Graduate Research Fellow Sep. 2021 – Dec. 2021
Remote Sensing Team, Field Research Facility
U.S. Army Engineer Research & Development Center, Duck, NC

Naval Research Laboratory Intern Jun. 2019 – Aug. 2019
Ocean Science Division, Naval Research Laboratory
NASA's Stennis Space Center, MS

Undergraduate Research Assistant
Fluid-Structure Interactions Team Jan. 2016 – Jun. 2017
Innovative Concrete Materials Lab Oct. 2014 – Dec. 2015
Dept. of Civil & Construction Engineering
Oregon State University, Corvallis, OR

Journal Publications

Peer-Reviewed Journal Articles (Published & Accepted)

8. Nuss, E.S., Moulton, M., Suanda, S., & **Baker, C.M.** (2024). Modeled surf-zone eddies on a laboratory scale barred beach with varying wave conditions. *Journal of Geophysical Research: Oceans*, 130(1), e2023JC020549.

7. Casper, A., Nuss, E.S., **Baker, C.M.**, Moulton, M., & Dusek, G. (2024). Assessing NOAA Rip-Current Hazard Likelihood Predictions: Comparison of an Operational Model with Lifeguard Observations in the Context of Rip-Current Types. https://doi.org/10.1175/WAF-D-23-0181.1.

6. Treillou, S., Marchesiello, P., & **Baker, C.M.** (2024), Correction of coherent interferences in wave-resolving nearshore models and validation with experimental data. *Ocean Modeling*, 189, 102369. https://doi.org/10.1016/j.ocemod.2024.102369

5. van Wiechen, P., Rutten, J., de Vries, S., Tissier, M., Mieras, R., Anarde, K., **Baker, C.M.**, Reniers, A., Mol, J.W. (2024). Measurements of dune erosion processes during the RealDune/REFLEX experiments. *Scientific Data*. 11(1), 421. https://doi.org/10.1038/s41597-024-03156-9.

4. **Baker, C.M.**, Moulton, M., Chickadel, C.C., Nuss, E.S., Palmsten, M., & Brodie, K. (2023), Two-dimensional inverse energy cascade in a laboratory surf zone for varying wave directional spread. *Physics of Fluids*, 35 (12): 125140. https://doi.org/10.1063/5.0169895

3. **Baker, C.M.**, Moulton, M., Palmsten, M., Brodie, K., Nuss, E.S. & Chickadel, C. C. (2023), Remotely sensed short-crested breaking waves in a laboratory directional wave basin. *Coastal Engineering*, 183, 104327. https://doi.org/10.1016/j.coastaleng.2023.104327

2. **Baker, C.M.**, Moulton, M., Elgar, S., Raubenheimer, B., & Kumar, N. (2021), Modeled Three-Dimensional Nearshore Currents and Eddies on an Alongshore-Variable Barred Beach. *Journal of Geophysical Research: Oceans*, 126, e2020JC016899. https://doi.org/10.1029/2020JC016899

1. **Baker, C.M.**, Higgins, C., Liu, J., & Yeh, H. (2020), Response of Metal Building Cladding to Tsunami Wave Impact Loads. *Journal of Structural Engineering*, 46(11), 04020236. https://doi.org/10.1061/(ASCE)ST.1943-541X.0002800

Peer-Reviewed Journal Articles (Under Review & In Preparation)

3. Treillou, S., Marchesiello, P., **Baker, C.M.**, McWilliams, J., Dumas, F. (In Review), Tracer dispersion by surfzone eddies: assessing the impact of undertow vertical shear.

2. **Baker, C.M.**, Moulton, M., Chickadel, C.C., Palmsten, M., Nuss, E.S., & Brodie, K. (In Prep), Surf-zone vorticity generation by irregular, directionally spread waves.

1. **Baker, C.M.**, Anarde, K., Tissier, M., Rutten, J., van Wiechen, P., Mieras, R., & De Vries, S. (In Prep), Infragravity and sea-swell wave contributions to dune erosion during collision.

Other Publications

3. **Baker, C.M.** (2023), Surfzone vorticity dynamics in a directional wave basin (Doctoral Dissertation), University of Washington, Seattle, WA, USA. http://hdl.handle.net/1773/49872

2. McLachlan, R., Bolden, I., Boysen, A., & **Baker, C.** (2020), Harmful Algae Blooms. In: *Climate Science for the Classroom*. M. Bertram & S. Biyani (Eds). https://uw.pressbooks.pub/climate/

1. **Baker, C.M.** (2019), Three-Dimensional Nearshore Currents and Eddies on an Alongshore-Variable Barred Beach (Masters thesis), University of Washington, Seattle, WA, USA. http://hdl.handle.net/1773/45155

Archived Software & Datasets

3. Nuss, E., Suanda, S., Moulton, M., & **Baker, C.M.** (2024), Phase-resolved simulation of directionally spread waves on a laboratory-scale barred beach. *Designsafe-CI.* https://doi.org/10.17603/ds2-esth-hg97.

2. **Baker, C.M.**, Melissa, M., Palmsten, M., & Nuss, E.S. (2023), Experimental investigation of short-crested wave breaking in a laboratory directional wave basin. *Designsafe-CI.* https://doi.org/10.17603/ds2-qgd5-jk92.

1. **Baker, C.M.**, Moulton, M., Elgar, S., Raubenheimer, B., & Kumar, N. (2021), SWASH Model Files from "Modeled Three-Dimensional Currents and Eddies on an Alongshore-Variable Barred Beach." *Zenodo*, https://doi.org/10.5281/zenodo.4141219.

Honors & Awards

Burges Presidential Graduate Fellow — Fall 2022 – Winter 2023
Civil and Environmental Engineering, University of Washington

Ronald & Mary Nece Endowed Fellowship in Water Engineering — Jul. 2022
Civil and Environmental Engineering, University of Washington

Best Oral Presentation, Top 3 Nominee, — Jun. 2021
Coastal Dynamics Conference

Naval Research Enterprise Internship Program Scholarship, — Jun.-Aug. 2019
(NREIP), Stennis, MS

Best Oral Presentation for Young Coastal Scientist — Nov. 2018
and Engineering Conference, Merida, Yuc., Mexico.

Rossano's Family Endowment Travel Award, College of Engineering, — Nov. 2018
University of Washington

Top Scholar Award, Graduate Student Fund, — Sep. 2017
University of Washington

Magna Cum Laude, Bachelors of Science, — Jun. 2017
Oregon State University

Fred Madigan Scholarship, Civil Engineering, — Sep. 2016
Oregon State University

Katherine & Arthur Chiu Outstanding Student Scholarship, — Sep. 2016
Civil Engineering, Oregon State University

Women in Engineering Undergraduate Research Grant — 2016 – 2017
College of Engineering, Oregon State University

Kelley Undergraduate Research Grant — 2014 – 2016
College of Engineering, Oregon State University

We are Women in Engineering Research Symposium Stipend Award — Feb. 2017
College of Engineering, North Carolina State

Provost Scholarship, Undergraduate Academic Scholarship, — 2013 – 2017
Oregon State University

Grants

2. Derakhti, M., Hegermiller, C.A., Wilson, G., **Baker, C.M.**, Moulton, M., Chickadel, C.C. *Sediment Transport Over the Nearshore Environment (STONE): Linking nonlinear wave effects across the shoaling and breaking zone.* U.S. Coastal Research Program, 2023 RFP. (2023 – 2027)

1. **Baker, C.M.**, National Defense Engineering and Science Graduate Fellowship (NDSEG), Department of Defense. (2019 – 2022)

PRESENTATIONS *Invited Lectures & Research Seminars*

22. Seminar: U.S. Geological Survey: Pacific Coastal and Marine Science Center. *A wave-resolved perspective on nearshore processes.* Oct. 29, 2024.

21. Seminar: Stanford University: Oceans Department. *How short-crested waves mix up the surf zone.* Sep. 27, 2024.

20. Seminar: University of Bergen, Oceans Talks. *Surf-zone eddy dynamics driven by short-crested wave breaking.* May 30, 2024.

19. Seminar: Imperial College London, Fluid Mechanics Seminar. *Experimental investigation of surf-zone vorticity dynamics.* May 22, 2024.

18. Invited Seminar: Scripps Institute of Oceanography, CASPO Seminar. *Surf-Zone Vorticity Dynamics in Large-Scale Wave Basin Experiments.* April 24, 2024.

17. Invited Seminar: University of New Hampshire, Ocean Seminar. *Surf-Zone Eddy Dynamics in Directional Wave Basin Experiments*. Feb. 9, 2024.

16. Invited Seminar: Yale Atmosphere, Ocean, Climate Dynamics. *Eddy Processes Driven by Breaking Waves in a Directional Wave Basin.* Nov. 9, 2023.

15. Invited Seminar: University of Connecticut, Department of Marine Sciences. *Breaking waves, surf-zone eddies, and rip currents: Insights from wave basin experiments.* Oct. 20, 2023.

14. Invited Seminar: Woods Hole Oceanographic Institute, Applied Ocean Physics & Engineering. *Breaking waves, surf-zone eddies, and rip currents: Insights from wave basin experiments.* Oct. 11, 2023.

13. Invited Seminar: University of North Carolina Chapel Hill, Institute of Marine Science. *Wave Breaking, Eddies, and Transient Rip Current Dynamics: Insights from Large-Scale Laboratory Experiments.* Sep. 14, 2023.

12. Invited Seminar: Coastal Imaging Research Network Seminar. *Remote sensing applications in large-scale laboratory experiments: Eddy generation by individual breaking waves. Jun. 14, 2023.* (Virtual)

11. Seminar: Woods Hole Institute of Oceanography, Coastal Ocean Fluid Dynamics Lab, Woods Hole, MA. *2D Turbulence in the surfzone: lab and field.* May 19, 2023. (Presented with Elgar, S.)

10. Invited Seminar: Stanford University, Fluid Mechanics Seminar, Palo Alto, CA. *Surfzone eddy generation and evolution in a directional wave basin.* Mar. 14, 2023.

9. Seminar: Delft University of Technology, 87th Hydraulic Engineering Colloquium, Delft, Netherlands. *Surfzone eddy formation and evolution in a directional wave basin.* Jun. 7, 2022 (Virtual)

8. Seminar: Deltares, Coastal Hazards Group, Delft, Netherlands. *Surfzone eddy formation and evolution in a directional wave basin.* Jun. 7, 2022 (Virtual)

7. Seminar: Physical Oceanography Seminar, University of British Columbia, Vancouver, BC. *Remotely sensed short-crested breaking waves and transient rip currents in a laboratory wave basin.* Feb. 3, 2022 (Virtual)

6. Invited Seminar: Field Research Facility Seminar, U.S. Army Engineer Research & Development Center, Duck, NC. *Short-crested wave breaking and transient rip currents in a laboratory wave basin.* Dec. 8, 2021

5. Invited Seminar: National Oceanic and Atmospheric Administration (NOAA), NOAA Coastal Ocean Modeling Seminars, Silver Spring, MD. *Surfzone currents and eddies: Three-dimensional phase-resolved simulations.* Sep. 7, 2021 (Virtual)

4. Seminar: Environmental Fluid Mechanics Group, University of Washington, Seattle, WA. *Quantifying the short-crested wave field.* Mar. 11, 2021. (Virtual)

3. Seminar: Department of Civil & Environmental Engineering, Louisiana State University, Baton Rouge, LA. *Remote sensing of rip currents and surface waves in a laboratory wave basin.* Aug. 16, 2019.

2. Seminar: U.S. Naval Research Laboratory, Ocean Sciences Division, Stennis Space Center, MS. *Remote sensing of rip currents and surface waves in a laboratory wave basin.* Aug. 21, 2019.

1. Seminar: Environmental Fluid Mechanics Group, University of Washington, Seattle, WA. *Radiation stress.* Feb. 7, 2019.

Conference Oral Presentations

17. **Baker, C.M.**, Anarde, K., Long, J., Hawkes, A., Lyon, C., Farquhar, L. & Gaenzle, B. (2024). Daily beach evolution with stereo photogrammetry at an undeveloped barrier island. *International Conference on Coastal Engineering*, Sep. 9 – 13.

16. **Baker, C.M.**, Moulton, M., Chickadel, C.C., Nuss, E.S., Palmsten M., & Brodie K. (2024). Wave breaking, eddies, and transient rip current dynamics in large-scale wave basin experiments. *COASTLAB24*, May 13–16.

15. **Baker, C.M.**, Anarde, K., Tissier, M., Rutten, J., van Wiechen, P., Mieras, R., & de Vries, S. (2024). Infragravity wave dynamics during dune collision. *Ocean Sciences Meeting*, Feb. 18 – 23.

14. Nuss, E.S., Moulton, M., Suanda, S., & **Baker, C.M.** (2024). Modeled surf-zone eddies on a laboratory scale barred beach with varying wave period and directional spread. *Ocean Sciences Meeting*, Feb. 18 – 23.

13. Nuss, E.S., Moulton, M., Suanda, S., **Baker, C.M.**, Brodie, K., & Palmsten, M. (2023). How does surfzone eddy activity vary with wave conditions on a laboratory scale barred beach? *Gordon Research Seminar/Conference: Coastal Ocean Dynamics*, Jun. 18–23.

12. **Baker, C.M.**, Moulton, M., Chickadel, C.C., Nuss, E.S., Palmsten M., & Brodie K. (2023). Remote sensing applications in large-scale laboratory experiments: Eddy generation by individual breaking waves. *Coastal Imaging Research Network Workshop*, May 10–12.

11. Casper, A., Moulton, M., Dusek, G., **Baker, C.M.**, & Nuss, E.S. (2023). Assessing NOAA hazardous rip-current predictions with lifeguard observations in the context of different rip-current types. *American Meteorological Society (AMS)* Meeting, Jan. 8–12.

10. Nuss, E.S., Moulton, M., Suanda, A., **Baker, C.M.**, Brodie, K., & Palmsten M. (2022). Breaking-wave crest lengths and associated vorticity input under varying directional spread. *American Geophysical Union (AGU)* Fall Meeting, Dec. 12–16.

9. **Baker, C.M.**, Moulton, M., Palmsten M., Brodie K., & Nuss, E.S. (2022). Deciphering determinants of breaking wave crest length in the surf zone by remotely sensing directional wave fields in the laboratory. *Wind waves In the Earth System (WISE)* Meeting, May 30 – Jun. 2.

8. **Baker, C.M.**, Moulton, M., Palmsten M., Brodie K., & Nuss, E.S. (2022). Vorticity injection at crest ends, eddy evolution, and transient rip current formation in a laboratory surf zone. *Ocean Sciences Meeting*, Feb. 28 – Mar. 4.

7. Bruder, B., Spore, N., Brodie, K., & **Baker, C.M.**, (2022). Measuring Alongshore Variations in Swash Flows Using Stereophotogrammetry. *Ocean Sciences Meeting*, Feb. 28 – Mar. 4.

6. Nuss, E.S., Moulton, M., Suanda, A., **Baker, C.M.**, Brodie, K., & Palmsten M. (2021). Phase-Resolved Modeling and Laboratory Investigation of Surfzone Eddies and Transient Rip Currents. *Young Coastal Scientist and Engineers Conference - America*, Nov. 1–11.

5. Nuss, E.S., Moulton, M., Suanda, A., **Baker, C.M.**, Palmsten M., & Brodie, K. (2021). Phase-Resolved Modeling and Laboratory Investigation of Surfzone Eddies and Transient Rip Currents. *Coastal and Estuarine Research Federation Conference*, Nov. 1–11.

4. **Baker, C.M.**, Nuss, E.S., Brodie K., Palmsten M., & Moulton, M. (2021). Short-Crested Wave Breaking, Eddies, and Transient Rip Currents in a Laboratory Wave Basin. *Coastal Dynamics Conference*, Delft, Netherlands, Jun. 28 – Jul. 2.

3. **Baker, C.M.**, Moulton, M., Palmsten M., Brodie K.& Kumar, N. (2020). Remote sensing of rip currents and surface waves in a laboratory wave basin. *Ocean Sciences Meeting*, San Diego, CA, Feb. 16 – 21, Abstract ID: CP42A-04.

2. **Baker, C.M.**, Moulton, M., Raubenheimer, B., Elgar, S., & Kumar, N. (2018), Three-dimensional modeling of transient rip currents: implications for cross-shore exchange. *Young Coastal Scientists and Engineers Conference - Americas*, Merida, Yuc., Mexico, Nov. 9 – 11.

1. **Baker, C.M.**, Moulton, M., Palmsten M., & Kumar, N. (2018), Remote sensing of rip currents and surface waves in a laboratory wave basin. *Coastal Image Research Network Workshop*, St. Petersburg, FL, Jun. 4 – 8.

Conference Poster Presentations

10. Mieras, R., van Weichen, P., de Vries, S., Tissier, M., Rutten, J., Anarde, K., & **Baker, C.M.** (2024). Continuous measurements of dune scarp erosion during storm impact using a line-scanning, low-cost (LLC) LiDAR. *Ocean Sciences Meeting*, Feb. 18–23.

9. **Baker, C.M.**, Moulton, M., Chickadel, C.C., Nuss, E.S., Palmsten M., & Brodie K. (2023). Surfzone vorticity dynamics in a directional wave basin. *Gordon Research Conference: Coastal Ocean Dynamics*, Jun. 18 – 23.

8. Nuss, E.S., Moulton, M., Suanda, A., Kutz, N.,& **Baker, C.M.** (2023). Using machine learning to predict wave-breaking induced eddy generation in the surf zone. *American Meteorological Society (AMS)* Meeting, Jan. 8 – 12.

7. **Baker, C.M.**, Moulton, M., Palmsten M., Brodie K., Nuss, E.S., & Chickadel, C.C. (2022). Surfzone Eddy Processes Consistent with an Inverse Energy Cascade: Laboratory Experiments in a Directional Wave Basin. *American Geophysical Union (AGU)* Fall Meeting, Dec. 12 – 16.

6. Nuss, E.S., **Baker, C.M.**, Moulton, M., & Kumar, N. (2020). Phase-Resolved Modeling and Laboratory Investigation of Surfzone Eddies and Transient Rip Currents. *American Geophysical Union*, San Francisco, CA, Dec. 7 – 11, Abstract ID: 739635.

5. Boysen, A., **Baker, C.M.**, Bolden, I., McLachlan, R. (2019). A phenomenon based climate science curriculum for middle-school classrooms: Harmful Algal Blooms, Society, and Climate Change. *Earth Educators' Rendezvous*, Nashville, TN, Jul. 15 – 19.

4. **Baker, C.M.**, Higgins, C., Liu, J., & Yeh, H. (2019). Predicting Tsunami Wave Impact Loads on Building Cladding. *Structures Congress*, Orlando, FL, OR, Apr. 24 – 27. Abstract ID: 505369-4.

3. **Baker, C.M.**, Moulton, M., & Kumar, N. (2018), Rip-current driven cross-shore exchange: Observations and Model Simulations. *Eastern Pacific Oceanography Conference*, Mt. Hood, OR, Sep. 12 – 15.

2. **Baker, C.M.**, Moulton, M., Elgar, S., Raubenheimer, B., & Kumar, N. (2018), Rip-current driven cross-shore exchange dynamics on a natural barred beach, CD14B-0042. *Ocean Sciences Meeting*, Portland, OR, Feb. 12 – 16. Abstract ID: EC24B-1103

1. **Baker, C.M.**, Higgins, C., Liu, J., & Yeh, H. (2017). Tsunami Impact Loads on Building Cladding. *Undergraduate Research Symposium*, Oregon State University, OR, May 19.

Teaching

Course Instructor

Coastal Processes, CEE 162F, Stanford University — Fall 2024

Guest Lecturer & Discussion Lead

Engineering Aspects of Coastal Processes & Geomorphology, North Carolina State University — Sept. 2023

Coastal Circulation, Naval Postgraduate School — Nov. 2022

Hydrodynamics, University of Washington — Feb. 2022

Teaching Assistant & Curriculum Development

Undergraduate Education Committee, Graduate Student Rep. Civil & Environmental Engineering Faculty Subcommittee, University of Washington — Nov. 2021 – Dec. 2022

Hydrology & Env. Fluid Mechanics, University of Washington — Spring 2021

Numerical Modeling of Hydrodynamics, University of Washington — Spring 2020

Introduction to Fluid Mechanics, University of Washington — Winter 2019

Harmful Algae Blooms Course for Middle School Students, University of Washington — Spring 2018

Mentorship

Women in Coastal Geosciences and Engineering Mentor — Dec. 2024 – Present

Cooperative Institute for Climate, Ocean, and Ecosystem Studies, Undergraduate Research Intern Mentor — Jun.–Aug. 2022

Society of Women in Engineering Mentor

- University of Washington — 2020 – 2021
- Oregon State University — 2016 – 2017

Leadership Academy Mentor, Oregon State University — 2015 – 2016

Professional Development Workshops

Center for Teaching and Learning Course Design Institute, Stanford University, CA — Sep. 2024

National Hazards Engineering Research Infrastructure (NHERI), RAPID Facility Workshop, University of Washington, Seattle, WA — Jul. 2024

Mentoring Physical Oceanography Women to Increase Retention (MPOWIR), Pattullo Conference, Warrenton, VA — Sep. 2023

FUNWAVE-TVD Workshop, Boston, MA — Jul. 2023

Coastal Imaging Research Network Workshop, Duck, NC — May 2023

Coastal Imaging Research Network Workshop, St. Petersberg, FL — Jun. 2018

Professional Service

Reviewer

American Shore & Beach Preservation Association: Shore & Beach (1)
Coastal Engineering (1)
Journal of Atmospheric and Oceanic Technology (1)
Journal of Coastal Research (1)
Journal of Geophysical Research: Oceans (2)
Physics of Fluids (1)
Natural Hazards and Earth System Sciences (1)

Representative

Regional Coordinator: Women in Coastal Geoscience and Engineering — 2024 – Present
Steering Committee: Western Coastal Collaboratorium — 2021 – 2022
Seattle Steering Committee: Society of Women in Marine Science — 2019 – 2021
Graduate Representative: Hydrology & Hydrodynamics DEI Committee — 2020
Graduate Student Steering Committee: Program on Climate Change — 2018 – 2020

Convener

American Geophysical Union 2022 Fall Meeting Session Chair — Dec. 2022
Nearshore Processes
ASLO 2022 Ocean Sciences Meeting Session Co-Chair — Feb.–Mar. 2022
Remote Sensing of Nearshore Processes & Coastal Morphology
Program on Climate Change: Spring Symposium — Spring 2020

Media

Article in *Stanford News & Events*: Faculty spotlight; — Sep. 2024
New faculty embody talent, ambition, growth of school.
Interview in *Stanford Reports*: 8 ways to visit the beach like a scientist — Jul. 2024
Article in *The Conversation US, Inc.*: — Jul. 2023
Rip currents are dangerous for swimmers but also ecologically important – here's how scientists are working to understand these 'rivers of the sea'.
by Nuss, E.S., Casper, A., **Baker, C.M.**, Moulton, M., Torres, W.
Interview in Scientific American (327, 2, 20-21): — Aug. 2022
Science in Images: See Delicate Rib Vortices Encircle Breaking Ocean Waves
by Thompson, J.

Outreach & Engagement

Diversity, Equity, and Inclusion Natural Hazards Workshop — Jul. 2022
NHERI Workshop Leader
UW Engage Program: Town Hall Research Talk — Apr. 2021
Climate Science on Tap: Schooner Series — 2018 – 2020
Engineering Discovery Days: EFM Lab Group Coordinator — 2018, 2019
STEM Lego Robotics Mentor, Elementary STEM Outreach — 2013 – 2017
American Society of Civil Engineering: Mentor/Outreach Officer — 2015 – 2016

Member

American Geophysical Union — 2017 – Present
Society of Women in Marine Science — 2019 – Present
Women in Coastal Geoscience and Engineering — 2021 – Present
Natural Hazards Engineering Research Infrastructure — 2021 – 2023
Graduate Student Council
Unlearning Racism in GEosciences (URGE): Cascadia Pod — 2021
Civil and Environmental Engineering DEI Action Planning — 2020 – 2021
Society of Women Engineers — 2014 – 2023
Program on Climate Change, University of Washington — 2017 – 2023

Skills

Numerical Models

Simulating WAves till SHore (SWASH), Simulating WAves Nearshore (SWAN), FUNWAVE-TVD

Programming
MATLAB, Unix, Python

Other Programs
Metashape Agisoft, AutoCAD, ArcGIS

Field & Lab Experience

Masonboro Island Beach Evolution Assessment with Stereo Techniques, Fall 2023
North Carolina National Estuarine Research Reserve, Wilmington, NC
Deployed two cameras to create elevation maps of the beach over a year.

DUring Nearshore Event eXperiment (DUNEX), Fall 2021
ACE Field Research Facility, Duck, NC
Remote sensing swashzone observations & drifter deployments during storms.

Ocean Wave Dissipation: Breaking and Bubble Generation, Dec. 2-23, 2019
Gulf of Alaska, Research cruise measuring wave breaking in the open ocean with freely drifting buoys.

Transient Rip Current Laboratory Experiments, Apr. & Aug.-Sep. 2018
O. H. Hinsdale Wave Laboratory, Oregon State University, OR
Directional Wave Basin testing using remote sensing & in situ sensors.

ONR Innershelf DRI, Point Sal, CA, Oct. 4-12, 2017
Ocean sampling cruises and remote sensing.

Munitions Mobility Study, Wallops Island, VA, Mar. 4-11, 2017
Swash zone observations of unexploded ordnance.

Tsunami Wave Impact on Cladding Structures, Mar. 2016
O.H. Hinsdale Research Laboratory, Oregon State University, OR
Design cladding structure for Large Wave Flume Experiment.

Other Professional Experience

Graduate Student Advisory Board Oct. 2021 – Dec. 2022
Civil and Environmental Engineering, University of Washington, Seattle, WA

Engineering Ambassador Jun. 2015 – Jun. 2017
College of Engineering, Oregon State University, Corvallis, OR

Engineering Design Services Intern Apr. 2016 – Sep. 2016
Bureau of Environmental Service, City of Portland, OR

Water Dept. Engineering Intern Jun. 2015 – Sep. 2015
Black & Veatch, Portland, OR