Ian M. Miller, PhD

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ResearchGate: https://www.researchgate.net/profile/Ian_Miller11
Blog: http://coastnerd.blogspot.com
YouTube: https://www.youtube.com/user/CoastNerd

PROFESSIONAL PROFILE

I am a Coastal Hazards Specialist for Washington Sea Grant, where I use applied research, science synthesis and engagement to build coastal community resilience to natural coastal hazards. I am also part-time faculty at Peninsula College in Port Angeles, WA. My research interests include sea level, coastal geomorphology, sediment transport, biophysical interactions in the coastal environment and the application of these disciplines to management problems related to hazards and climate change. I am also interested in undergraduate education methods and pedagogy in the ocean and earth sciences.

ACADEMIC QUALIFICATIONS

2011	PhD. Department of Ocean Sciences, UC Santa Cruz. Dissertation titled, "Mixed beach morphodynamics and shoreline evolution on the dammed Elwha River Delta, Washington State, USA". Advisors: Drs. Gary Griggs, Jon Warrick, Noah Finnegan, and Chris Edwards.
1996	Bachelor of Science, cum laude. Degree in Environmental Science with an emphasis in Marine Ecology. Huxley College of Environmental Studies, Western Washington University. Advisor: Dr. Bert Webber.
1995	Quarter-in-residence. Oregon Institute of Marine Biology, University of Oregon.
1994	National Science Foundation Research Experience for Undergraduates Fellow. University of Hawaii at Manoa. Advisors: Drs. Ed Parnell and Craig Smith.

PEER-REVIEWED PUBLICATIONS

2024	Berdahl, M., Leguy, G. R., Lipscomb, W. H., Otto-Bliesner, B. L., Brady, E. C., Tomas, R. A., Urban, N. M., **Miller, I.M.**, Morgan, H., and E. J. Steig. Antarctic climate response in Last Interglacial simulations using the Community Earth System Model (CESM2), Climate of the Past, 20, 2349–2371, https://doi.org/10.5194/cp-20-2349-2024, 2024.

Miller, I.M., M. Collins, M. Covi, P. Gassett, H. Abeels, K. Alvarez, J. Barrett, S. Barry, M. Behl, R. Collini, L. Engeman, P. Grifman, L. Kerr, K. McClure, C. Petrone, L. Richmond, P. Rubinoff, and D. Swallow. 2024. Sea Grant programs build resilience to coastal climate hazards. Oceanography 37(1):108–115, https://doi.org/10.5670/oceanog.2024.221.

2023 **Miller, I.M.**, Maverick, A., Johannessen, J., Fleming, C., and S. Regan. 2023. A Data-Driven Approach for Assessing Sea Level Rise Vulnerability Applied to Puget Sound, Washington State, USA. Sustainability, 15, 5401. doi.org/10.3390/su15065401

Miller, I.M., Kaminsky, G.M., and A. Akmajian. 2023. Shoreline dynamics on a high energy beach associated with relative sea-level fall on the Pacific Coast, USA. The Proceedings of the Coastal Sediment 2023. doi.org/10.1142/9789811275135_0034

Rubin, S.P., Foley, M.M., **Miller I.M.**, Stevens, A.W., Warrick, J.A., Berry, H.D., Elder, N.E., Beirne, M.M. and G. Gelfenbaum. 2023. Nearshore subtidal community response during and after sediment disturbance associated with dam removal. Frontiers in Ecology and Evolution 11:1233895. doi: 10.3389/fevo.2023.1233895

Perry, L.G., Shafroth, P.B., Alfieri, S.J. and **I.M. Miller**. 2023. Coastal vegetation responses to large dam removal on the Elwha River. Frontiers in Ecology and Evolution 11:1233903. doi: 10.3389/fevo.2023.1233903

Eitzel, M.V., Meyer, R., Morley, S., **Miller, I.M.**, Shafroth, P.B., Behymer, C., Jadallah, C., Parks, D., Kagley, A., Shaffer, A., and H. Ballard. 2023. Lessons learned from community and citizen science monitoring on the Elwha River restoration project. Frontiers in Ecology and Evolution 11:1216080. doi: 10.3389/fevo.2023.1216080

2022 Collini, R.C., Carter J., Auermuller, L., Engeman, L., Hintzen, K., Gambill, J., Johnson, R.E., **Miller, I.M.**, Schafer, C., and H. Stiller. 2022. Application Guide for the 2022 Sea Level Rise Technical Report. National Oceanic and Atmospheric Administration Office for Coastal Management, Mississippi–Alabama Sea Grant Consortium (MASGP-22-028), and Florida Sea Grant (SGEB 88)

Wernette, P., **Miller, I.M.**, Ritchie, A.W. and J.A. Warrick. 2022. Crowd-sourced SfM: Best practices for high resolution monitoring of coastal cliffs and bluffs. Continental Shelf Research, 245.

2021 Newton, T.J., Weldon, R., **Miller, I.M.**, Schmidt, D., Mauger, G., Morgan, H., and E. Grossman. 2021. An Assessment of Vertical Land Movement to Support Coastal

Hazards Planning in Washington State. Water, 13, 281. doi.org/10.3390/w13030281

2020 Moon, T., Scambos, T., Abdalati, W., Ahlstrom, A.P., Bindschadler, R., Gambill, J., Heimbach, P., Hock, R., Langley, K., **Miller, I.M.**, and M. Truffer. 2020. Ending a sea of confusion: A scientist perspective on lessons and opportunities in sea level communication. Environment: Science and Policy for Sustainable Development

Yang, Z., Wang, T., Castrucci, L., and **I.M. Miller**. 2020. Modeling assessment of storm surge in the Salish Sea. Estuarine, Coastal and Shelf Science, 238: 106552.

Zurbuchen, J., Simms, A.R., Warrick, J.A., **Miller, I.M.** and A. Ritchie. 2020. A model for the growth and development of wave-dominated deltas fed by small mountainous rivers: Insights from the Elwha River delta, Washington. Sedimentology

2019 Glover, H.E., Ogston, A.S., **Miller, I.M.**, Eidam, E.F., Rubin, S.P. and H.D. Berry. 2019. Impacts of suspended sediment on nearshore benthic light availability following dam removal in a small mountainous river: In-situ observations and statistical modeling. Estuaries and Coasts, 42: 1804-1820

Warrick, J.A., Stevens, A.W., **Miller, I.M.**, Harrison, S.R., Ritchie, A.C. and G. Gelfenbaum. 2019. World's largest dam removal reverses coastal erosion. Scientific Reports, 9: 13968. doi.org/10.1038/s41598-019-50387-7

2018 Ritchie, A.C., Warrick, J.A., East, A.E., Magirl, C.S., Stevens, A.W., Bountry, J.A., Randle, T.J., Curran, C.A., Hilldale, R.C., Duda, J.J., Gelfenbaum, G.R., **Miller, I.M.**, Pess, G.R., Foley, M.M., McCoy, R., and A.S. Ogston. 2018. Morphodynamic evolution following sediment release from the world's largest dam removal. Scientific Reports 8: e13279. DOI:10.1038/s41598-018-30817-8

Miller, I.M., Morgan, H., Mauger, G., Newton, T., Weldon, R., Schmidt, D., Welch, M., Grossman, E. 2018. Projected Sea Level Rise for Washington State – A 2018 Assessment. A collaboration of Washington Sea Grant, University of Washington Climate Impacts Group, Oregon State University, University of Washington, and US Geological Survey. Prepared for the Washington Coastal Resilience Project.

2017 Rubin, S.P., **Miller, I.M.**, Foley, M.M., Berry, H.D., Duda, J.J, Hudson, B., Elder, N.E., Beirne, M.M., Warrick, J.A., McHenry, M.L, Stevens, A.W. and E.F. Eidam. 2017. Increased sediment load during a large-scale dam removal changes nearshore communities. PLoS ONE 12(12): e0187742. https://doi.org/10.1371/journal.pone.0187742

Garrison-Laney, C., and **I.M. Miller**. 2017. Tsunamis in the Salish Sea: Recurrence, Sources, Hazards. Field Trip Guidebook for Geological Society of America 2017 Meeting. Seattle, Washington; 22-25 October 2017

2015 **Miller, I.M.**, Ogston, A.S., and Dolan, J. 2015. Sedimentology of intertidal deposits after dam removal on a coastal river. The Proceedings of the Coastal Sediment 2015.

Masteller, C.C., Finnegan, N.J., Warrick, and **I.M. Miller**. 2015. Kelp, cobbles, and currents: Biologic reduction of coarse grain entrainment stress. Geology 43 (6): 543–546.

Warrick, J.A., Gelfenbaum, G., Stevens, A.W., **Miller, I.M.**, Kaminsky, G.M., and Foley, M.M. 2015. Coastal change from a massive sediment input: Dam Removal, Elwha River, Washington, USA. The Proceedings of the Coastal Sediments 2015.

Gelfenbaum, G., Stevens, A.W., **Miller, I.M.**, Warrick, J.A., Ogston, A.S., and Eidam, E. 2015. Large-scale dam removal on the Elwha River, Washington, USA: Coastal geomorphic change. Geomorphology (246) 649-668.

2014 Petersen, A., Hals, H., Rot, B., Bell, J., **Miller, I.M.**, Parks, J., and Stults, M. 2014. Climate change and the Jamestown S'Klallam Tribe: A customized approach to climate vulnerability and adaptation planning. Michigan Journal of Sustainability, Vol. 2. DOI: http://dx.doi.org/10.3998/mjs.12333712.0002.003

2013 **Miller, I.M.**, Shishido, C., Antrim, L, and Bowlby, E.C. (eds.) 2013. Climate Change and the Olympic Coast National Marine Sanctuary: Interpreting Potential Futures. Marine Sanctuaries Conservation Series ONMS-13-01. U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of National Marine Sanctuaries, Silver Spring, MD. 232 pp.

2012 **Miller, I.M.**, and Brennan, J. 2012. Debris Accumulation Scenarios in Washington State from the March 2011 Tōhoku Tsunami. Washington Sea Grant Technical Report WSG-TR-12-02.

Miller, I.M., and Warrick, J.A. 2012. Measuring Sediment Transport and Bed Disturbance with tracers on a Mixed Beach. Marine Geology 299-302, 1-7. doi.org/10.1016/j.margeo.2012.01.002

Warrick, J.A., Rosenberger, K., Lam, A., Ferreira, J., **Miller, I.M.**, Rippy, M., Svejkovsky, J., and Mustain, N., 2012, Observations of coastal sediment dynamics of the Tijuana Estuary Fine Sediment Fate and Transport Demonstration Project, Imperial Beach, California, U.S. Geological Survey Open-File Report 2012–1083, 29 p and data files.

2011 **Miller, I.M.** 2011. Mixed beach morphodynamics and shoreline evolution on the dammed Elwha River delta, Washington State, USA. Doctoral dissertation, UC Santa Cruz, Santa Cruz, CA.

Miller, I.M., Warrick, J.A., Morgan, C., 2011. Observations of coarse sediment movements on the mixed beach of the Elwha Delta, Washington. Marine Geology 282, 201-214.

Rubin, S.P., **Miller, I.M.**, Elder, N., Reisenbichler, R.R. and Duda, J.J. 2011. Nearshore Biological Communities Prior to Removal of the Elwha River Dams. In: Duda, J.J., Warrick, J.A., and Magirl, C.S., eds., Coastal habitats of the Elwha River, Washington— Biological and physical patterns and processes prior to dam removal: U.S. Geological Survey Scientific Investigations Report 2011–5120, pp. 131-174.

Warrick, J.A., Stevens, A.W., **Miller, I.M.** and Gelfenbaum, G. 2011. Coastal Processes of the Elwha River Delta. In: Duda, J.J., Warrick, J.A., and Magirl, C.S., eds., Coastal habitats of the Elwha River, Washington— Biological and physical patterns and processes prior to dam removal: U.S. Geological Survey Scientific Investigations Report 2011–5120, pp. 112-130.

Warrick, J.A., Draut, A.E., McHenry, M.L., **Miller, I.M.**, Magirl, C.S., Beirne, M.M., Stevens, A.W. and Logan, J.B. 2011. Geomorphology of the Elwha River and its Delta. In: Duda, J.J., Warrick, J.A., and Magirl, C.S., eds., Coastal habitats of the Elwha River, Washington— Biological and physical patterns and processes prior to dam removal: U.S. Geological Survey Scientific Investigations Report 2011–5120, pp. 47-73.

Finlayson, D.P., **Miller, I.M.**, and Warrick, J.A., 2011, Bathymetry and acoustic backscatter—Elwha River Delta, Washington: U.S. Geological Survey Open-File Report 2011–1226.

DATA, REPORTS, ARTICLES and OTHER PRODUCTS

Rubin, S.P., Elder, N.E., **Miller, I.M.,** Beirne, M.M., and Foley, M.M., 2023, Data collected in 2008-2022 to assess nearshore subtidal community responses to increased sediment load during and after removal of the Elwha River dams, Washington State, USA: U.S. Geological Survey data release, https://doi.org/10.5066/P9NCE4FE.

Eitzel, M.V., Morley, S., Behymer, C., Meyer, R., Kagley, A., Ballard, H., Jadallah, C., Duda, J., Jennings, L., **Miller, I.M.,** Stapleton, J., Shaffer, A., Miller, A., Shafroth, P., and Blackie, B. 2023. Community and Citizen Science on the Elwha River: Past, Present, and Future. UC Davis Center for Community and Citizen Science and Elwha ScienceScape. doi.org/10.58076/C64W2B

Coastal Geologic Services, Maverick, A., Johannessen, J., **Miller, I.M.**, 2022. Prioritizing Sea Level Rise Exposure and Habitat Sensitivity Across Puget Sound Final Technical Report. Prepared for EPA's National Estuary Program in support of Near-Term Action 2018-0685, 46p., Bellingham, WA. Data download available at https://wacoastalnetwork.com/puget-sound-parcel-scale-sea-level-rise-vulnerability-assessment/

Miller, I.M., Faghin, N., and S. Fishman. 2022. Sea Level Rise and Management Options for Washington's shorelines. A collaboration of Washington Sea Grant and the Washington Department of Ecology. Prepared for the Washington Coastal Resilience Project

Miller, I.M., and A. Akmajian. 2022. Shoreline survey data collected at Hobuck, Tsoo-Yess, and Ozette, on Makah Tribal Lands, 2018–2022. Dryad(Online data set)

Miller, I.M., Wernette, P., Ritchie, A.W. and J.A. Warrick. 2022. Crowd-sourced SfM: Best practices for high resolution monitoring of coastal cliffs and bluffs. Dryad(Online data set)

Miller, I.M. and M. Hatfield. 2021. Shoreline survey data collected on Port Gamble S'Klallam Tribal lands (Puget Sound, Washington State, USA) in 2019. PANGAEA (Online data set)

Mitchell, H., **Miller, I.M.**, and Troost, K. 2021. Port Gamble S'Klallam Tribe Coastal Hazards Analysis: Shoreline Change and Extreme Coastal Water Level. Final project report delivered to the Port Gamble S'Klallam Tribe to support, University of Washington contract, "Coastal Risk Analysis for Port Gamble S'Klallam Tribe Reservation"

Eveleth, R., Lemkau, K., **Miller, I.M.**, Smith, S., and C. S. Lichtenwalner. 2020. Seasonal Variability In The Mixed Layer. OOI Data Labs Collection. Available at https://datalab.marine.rutgers.edu/explorations/2019/seasonal.php

Garrison-Laney, C. and **I.M. Miller**. 2020. Records of earthquakes and tsunamis in coastal wetlands. Salish Magazine.

Miller, I.M., Elder, N. and S.R. Rubin. 2019. Elwha nearshore benthic marine community survey interactive map and story map. Hosted at https://elwhanearshore.ocean.washington.edu/

Miller, I.M., Yang, Z., VanArendonk, N., Grossman, E., Mauger, G. S., and H. Morgan. 2019. Extreme Coastal Water Level in Washington State: Guidelines to Support Sea Level Rise Planning. A collaboration of Washington Sea Grant, University of Washington Climate Impacts Group, Oregon State University, University of Washington, and U.S. Geological Survey. Prepared for the Washington Coastal Resilience Project.

Miller, I.M. 2019. The dynamic sea-shore: Washington Sea Grant surveys Olympic Coast beaches. West End Natural Resource News, July 2019, pps. 6-8

Miller, I.M. 2019. Shoreline survey data collected at Rialto and Kalaloch Beaches, Washington State, 2018-2019. PANGAEA (Online data set)

Miller, I.M. 2019. Beach Profile Data for the Elwha River Delta, 2011-2018. PANGAEA (Online data set)

Miller, I.M. 2018. A coastal scientist's perspective on dam removal. International Water Power and Dam Construction. December 2018: pp. 42-44

Norheim, R.A., Mauger, G.S., and **I.M. Miller**, 2018. Guidelines for Mapping Sea Level Rise. Report prepared for the EPA National Estuary Program (NEP). Climate Impacts Group, University of Washington, Seattle.

Raymond, C., Conway-Cranos, L., Morgan, H., Faghin, N., Spilsbury Pucci, D., Krienitz, J., **Miller, I.M.**, Grossman, E. and Mauger, G., 2018. Sea level rise considerations for nearshore restoration projects in Puget Sound. A report prepared for the Washington Coastal Resilience Project.

Miller, I.M. and Mastriani, E. 2017. Prioritizing flood risk reduction and ecosystem services on the Dungeness River delta: A parcel-scale analysis. Prepared for the Jamestown S'Klallam Tribe. Available at http://www.jamestowntribe.org/programs/nrs/nrs_Dungeness_River_Delta.htm

Miller, I.M., Gray, H. and M.L. McHenry. 2017. Ediz Hook Phase 3 Beach Restoration and Nourishment: Intertidal Morphology Monitoring Summary. Report to the North Olympic Peninsula Lead Entity.

Stevens, A.W., Gelfenbaum, G., Warrick, J.A., **Miller, I.M.**, and Weiner, H.M., 2017, Bathymetry, topography, and sediment grain-size data from the Elwha River delta, Washington (ver. 5.0, November 2024): U.S. Geological Survey data release, https://doi.org/10.5066/F72N51GC.

Miller, I.M., Petersen, S., Fougerat, M., Pucci, D., Clark, L., and B. Wood. 2016. Sea Level Rise and Coastal Flood Risk Assessment: Island County, Washington. Published by Adaptation International.

Petersen, S., Bell, J., **Miller, I.M.**, Jayne, C., Dean, K., Fougerat, M., 2015. *Climate Change Preparedness Plan for the North Olympic Peninsula*. A Project of the North Olympic Peninsula Resource Conservation & Development Council and the Washington Department of Commerce, funded by the Environmental Protection Agency. Available: www.noprcd.org

Miller, I.M. and Petersen, S. 2013. Sea Level Rise and Coastal Flooding. In: Jamestown S'Klallam Tribe, 2013. Climate Change Vulnerability Assessment and Adaptation Plan. Petersen, S., Bell, J. (eds.) A collaboration of the Jamestown S'Klallam Tribe and Adaptation International.

Miller, I.M. 2013. Tsunamis in the Strait of Juan de Fuca. TsuInfo Alert: The Newsletter of the Washington State Tsunami Hazard Mitigation Program. Volume 15, Number 6.

Miller, I.M., 2013. Data Collection and Processing: Elwha Estuary Survey, February 2013. A report for the Lower Elwha Klallam Tribe.

Miller, I.M., and E. Dawson. 2013. Community College Students Experience Oceanographic Data Collection and Analysis. HOBO e-news: Application Stories.

Miller, I.M. 2004. Elwha Restoration Project Makes Slow Progess. *Making Waves: Newsletter of the Surfrider Foundation*. June 2004.

RECENT PRESENTATIONS

Please contact me at immiller@uw.edu for a list of recent presentations

TEACHING/EDUCATION

2024-present	**Co-Instructor,** NATR 220 (Habitat and Wildlife Management), NATR 145 (Restoration Ecology) and NATR 215 (River Restoration) for the Peninsula College Natural Resources professional program
2012-2023	**Instructor,** OCEA 101, Introduction to Oceanography. Peninsula College, Port Angeles, WA
2014, 2016, 2018 and 2020	**Co-Instructor**, Ocean 492, Marine Sedimentary Processes: Elwha River Dam Removal Impacts Research Apprenticeship. University of Washington, Friday Harbor, WA. Lead Instructor: Dr. Andrea Ogston
2014	**Mentor,** ENVIR 511, Environmental Management – Keystone Project. University of Washington, Seattle, WA.
2010, 2008	**Teaching Assistant**, Oceans 1, Introduction to Ocean Science. University of California Santa Cruz. Instructor: Dr. Chris Edwards
2009	**Teaching Assistant**, EART 105, Coastal Geology. University of California Santa Cruz. Instructor: Dr. Gary Griggs
2001-2003	**Education Director,** Olympic Park Institute. Lake Crescent, WA. Field-based environmental science instruction for K-12 students.
1997-2001	**Field Instructor,** Olympic Park Institute. Lake Crescent, WA. Field-based environmental science instruction for K-12 students.
2001	**Program Director,** Sound Experience, Port Townsend, WA. Marine science education for K-8 students based off of the schooner *Adventuress*.

1999	**Marine Science Specialist,** Feiro Marine Life Center, Port Angeles, WA. Marine Science Education for the public.
1998	**Field Educator,** Salish Sea Expeditions, Bainbridge Island, WA. Marine science education for K-12 student based off of the yawl *Carlyn*.

STUDENT/INTERN MENTORSHIP

2019	Hannah Drummond (MS Candidate), Western Washington University
2018	Nathan Ganzhorn (undergraduate), Peninsula College
2017	Emily Scott (volunteer intern) Laura Priddis (undergraduate), Huxley College on the Peninsulas
2015	Jacob Melly (undergraduate), Huxley College on the Peninsulas Dana Wu (post-graduate), Citizen Action Training School Program Matthew Teich, (graduate), University of Washington
2014	Kasten Turrey (high school), North Olympic Peninsula Skills Center Jennifer Hartke (undergraduate), Huxley College of the Environment Ammon Dodson (undergraduate), Peninsula College Austin Law (undergraduate), University of Washington Katherine Eacrett, (undergraduate), Peninsula College
2013	Eliza Dawson (undergraduate), Peninsula College Sara Rahmani (undergraduate), Everett Community College Peter Steelquist (undergraduate), Evergreen State College Kevin Simans (undergraduate), University of Washington Leah Miyamoto (undergraduate), University of Washington Rachel Williams (undergraduate), University of Washington
2012	Kelly Sullivan (undergraduate), University of Washington Kassandra Grimm (undergraduate), Huxley College on the Peninsulas Caitlin Shashido (graduate), University of Washington Chris Clark (undergraduate), Huxley College on the Peninsulas

OTHER PROFESSIONAL EXPERIENCE

2003-2006	**Washington Field Coordinator,** Surfrider Foundation
2000-2001	**Research Cruise Technician**, Olympic Coast National Marine Sanctuary

2000	**Salmon Redd Surveys,** North Olympic Salmon Coalition
2000	**Bering Sea Groundfish Observer,** Alaskan Observers, Inc.
1998	**Program Director,** Saltash Mountain Summer Camp, Farm and Wilderness
1993	**Shellfish Stock Assessment Technician**, Washington State Department of Fisheries

GRANTS, AWARDS and HONORS

2024
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2023
- Project Partner, "Creating a Framework for Climate Resilience through
- Community, Habitat and Infrastructure". National Coastal Resilience Fund (through NOAA and the National Fish and Wildlife Fund) project #79983

2022
- Co-Investigator, "Parcel-scale Sea Level Rise Vulnerability for Puget Sound – Phase 2". Award HSIL23-24113 under assistance agreement PC-01J22301 from US EPA through the Washington Department of Fish and Wildlife
- Project Partner, "Designing Habitat Restoration and Flood Reduction Strategies at Willapa River (WA)". National Coastal Resilience Fund (through NOAA and the National Fish and Wildlife Fund).

2021
- Project Partner, "Collaborative Research: Under what climate conditions does the West Antarctic Ice Sheet Collapse". Grant from the National Science Foundation
- Project Partner, "Large-Scale CoPe: The Cascadia Coastlines and People Hazards Research Hub". Grant from the National Science Foundation

2020
- Co-Investigator, "Prioritizing Sea Level Rise Exposure and Habitat Sensitivity Across Puget Sound". Award 2018-0685 under assistance agreement PC-01J22301 from US EPA through the Washington Department of Fish and Wildlife

2019
- Outstanding Community Impact Award, University of Washington College of the Environment
- Collaborator, "Makah Coastline Assessment and Restoration Design". Grant from the Washington Coast Restoration and Resiliency Initiative
- Collaborator, "Port Gamble S'Klallam Tribe Coastal Risk Assessment". Funding from the Port Gamble S'Klallam Tribe

2018
- Exceptional Faculty Grant Award, Peninsula College

- US Geological Survey Unit Award for Excellence of Service for the Elwha River Science Team

2017
- Co-Investigator, "Competing water use in the face of climate change: Integrated analysis to support water resource planning for extreme events". Grant from National Oceanic and Atmospheric Administration Sectoral Applications Research Program (NOAA SARP)

2016
- Co-Investigator, "Improving risk communication and leveraging existing programs in Washington State to build capacity and enhance resilience in coastal communities". Grant from National Oceanic and Atmospheric Administration

2015
- Co-Investigator, "Progress towards a new sedimentary and ecological equilibrium: Habitat modification due to the Elwha Dam removal". With University of Washington Department of Oceanography. Funded by Washington Sea Grant

2014
- Co-Investigator, "Planning for Climate Change on the North Olympic Peninsula". With the North Olympic Peninsula Resource Conservation and Development Council and Adaptation International. Contract #14-63401-004

2013
- Co-Investigator, "Engaging Communities in a Coastal Resilience Network in Washington State". Grant from National Oceanic and Atmospheric Administration
- Co-Investigator, "Student Opportunities in Field Research: Engaging West End Natural Resources Students in Shoreline Monitoring". Grant from the North Olympic Marine Resources Committee

2012
- Co-Investigator, "Historical Analysis of Marine Debris from the Washington Coast". Grant from the North Olympic Marine Resources Committee
- Collaborator, "Climate Change Vulnerability Assessment and Adaptation Plan for the Jamestown S'Klallam Tribe". Sub-contract from Adaptation International.

2011
- Co-Investigator, "Olympic Coast National Marine Sanctuary Climate Change Vulnerability Assessment". Contract from the Office of National Marine Sanctuaries, National Oceanic and Atmospheric Administration.

2009
- Student Poster Award, Puget Sound/Georgia Basin Ecosystem Conference
- Friends of Long Marine Lab Student Research Grant
- Center for the Dynamics and Evolution of the Land-Sea Interface Graduate Student Research Grant

2008	• Thomas Pratte Memorial Scholarship • Meyers Oceanography and Marine Biology Trust Grant
2005	• Principal Investigator, Puget Sound Action Team Public Involvement and Education (PIE) Grant
2004	• National Oceanic and Atmospheric Administration Environmental Hero Award

COMMITTEE AND SPECIAL SERVICE

CURRENT

• Associate Editor, Northwest Science	2021-present
• Member, Strait Ecosystem Recovery Network Technical Review Committee	2015-present
• Member, North Olympic Peninsula Lead Entity Technical Review Group	2014-present
• Ex-officio Member, North Olympic Coast Marine Resources Committee	2013-present
• Board Member, Feiro Marine Life Center	2012-present
• Member, Strait Ecosystem Recovery Network (a Local Integrating Organization of the Puget Sound Partnership)	2012-present

PAST

• Guest Editor, Water Special Issue "Coastal Hazards"	2020-2021
• Member, Feeder Bluff Technical Advisory Committee, WA Department of Ecology	2012-2013
• Member, Three Crabs Restoration Project Technical Review Committee	2013
• Alternate, Washington Coast Marine Advisory Committee Science Seat	2011-2013
• Member, Scientific Advisory Team for West Coast Governors Alliance West Coast Hazards Map	2011-2012
• Member, University of Washington College of the Environment Science Communication Task Force	2012-2013
• Member, Organizing Committee. Elwha Science Symposium	2011, 2012
• Member, Clallam County Marine Resources Committee	2003-2006
• Member, North Olympic Land Trust Board	2003-2006
• Member, Washington State BEACH Program Guidance Committee	2003-2006
• Alternate, Washington State Oil Spill Advisory Committee	2003-2006
• Member, Washington State Oil Spill Contingency Plan Rule-Making Committee	2003-2006

- Member, Northwest Straits Commission Education Sub-committee 2006
- Contributor, Puget Sound Partnership Environmental Caucus

JOURNALS REVIEWED

- Northwest Science
- Water
- Oceanography
- Earth Surface Process and Landforms
- Coastal Management Journal
- Journal of Marine Science and Engineering
- Geologica Acta
- Marine Geophysical Research
- Arctic
- Taylor and Francis (textbook)

CURRENT MEMBERSHIPS

American Geophysical Union. Member Since 1 January 2008
Northwest Science Association.
American Association of Underwater Sciences. Member Since 7 April 2008
Coastal Education and Research Foundation. Member Since 1 January 2009
Divers Alert Network. Member since 22 January 2008
The Oceanography Society

SPECIALTY COURSES

- **Climate Adaptation Planning for Emergency Management**. 8-hr course, 29 September 2023. Hosted by FEMA Region 10, Lynnwood, WA
- **Photogrammetry Training**. 40-hr course, 27 February – 3 March 2023. Virtual course hosted by the US Geological Survey.
- **Using GIS to Describe and Measure Risks and Vulnerabilities**. 5-hr course, 21 February 2023. Virtual course hosted by FEMA Region 10.
- **Ocean Observing Initiative Data Lab Workshop**. 40-hour course, 18-23 August 2019. Course by Rutgers University. Bellingham, WA
- **Coastal Inundation Mapping**. 16-hour course, 29-30 January 2018. Course by NOAA's Office for Coastal Management. Lacey, Washington
- **Planning for Meaningful Evaluation**. 16-hour course, 4-5 February 2015. Course by NOAA's Office for Coastal Management. Seattle, WA
- **Coastal Flood Risk Reduction**. 8-hour course, 21 February 2013. Course by the National Disaster Preparedness Training Center. Port Angeles, WA
- **Preparing Students in Two-Year Colleges for Geosciences Degrees and Careers**. 24-hour workshop, July 18-21, 2012. Course by SAGE2YC (http://serc.carleton.edu/sage2yc/index.html). Tacoma, WA.

- **Coastal Community Resilience**. 8-hour course, June 2011. Course by the National Disaster Preparedness Training Center. Port Angeles, WA
- **NOAA Ocean Satellite Data.** 20 hour course, 23-25 March 2011. Instructed by David Foley, Elliot Hazen and Cara Wilson. OSU, College of Oceanic and Atmospheric Sciences, Corvallis, OR.
- **SWAN Wave Modelling**. 8 hour course, 2/9/2010 and 2/16/2010. Instructed by Dr. Andre van de Westhuysen, Deltares. USGS Pacific Marine Science Center, Santa Cruz, CA
- **Vertical Geodetic and Tidal Datums.** 24 hour course, April 2009. Instructed by staff of the National Geodetic Survey and NOAA. USGS Pacific Marine Science Center, Santa Cruz, CA.
- **Modelling with Delft3D**. 40 hour course. Instructed by Dr. Edwin Elias, USGS. USGS Pacific Marine Science Center, Santa Cruz, CA
- **UC Santa Cruz Scientific Diving**. Completed June 2008. Instructed by Steve Clabuesch. UC Santa Cruz, Santa Cruz, CA.
- **GIS For the Management Practitioner.** 8 hour course, May 2006. Instructed by Dr. Dwight Barry, Peninsula College. Peninsula College, Port Angeles, WA
- **Coastal Management in Washington State.** 16 hour course, April 2006. Coastal Training Service
- **Cold Water Survival**. Federal Fisheries Observer Training. Anchorage, AK, February 2000

CERTIFICATIONS

First Aid

- WMI Wilderness First Responder (Lapsed)
- DAN Oxygen First Aid for SCUBA Diving Injuries
- AHSI Basic Life Support

SCUBA

- University of Washington Scientific Diver (2011-Current)
- University of California Scientific Diver (2008-2011)
- NAUI NITROX Diver
- NAUI Master SCUBA Diver
- NAUI Advanced SCUBA
- NAUI Specialty Diver (Teaching Assistant)
- NAUI Rescue Diver
- University of Hawaii Scientific Diver, 100fsw Depth Qualified (1996)
- NASDS Open Water Diver (certified 1994)

Boat Operations

- American Watercraft Association Responder
- US Department of the Interior Marine Operators Certification Course (re-certified May

2018)
- CA Department of Boating and Waterways
- U.S. Navy Sailing Qualification (“Class A”)