

**Emily F. Eidam**  
curriculum vitae

Oregon State University  
College of Earth, Ocean, and Atmospheric Sciences  
104 CEOAS Admin Building  
Corvallis, OR 97331

emily.eidam@oregonstate.edu

**Education**

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- 2017 PhD, Oceanography, University of Washington  
Dissertation: *Processes and records of coastal sediment dispersal in contrasting deltaic systems*
- 2013 MS, Oceanography, University of Washington
- 2010 BS, Geological Sciences, University of Alaska Anchorage, *magna cum laude*
- 2008 BS, Civil Engineering, University of Alaska Anchorage, *magna cum laude*

**Research Interests**

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Evolution of sedimentary deposits in continental shelf, deltaic, and estuarine systems; erosion and deposition along rapidly changing shorelines; integration of low-cost sensors with existing monitoring technology; radiochemical signatures of event deposits.

**Positions**

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- 2022–present Assistant professor, Oregon State University
- 2022–present Research faculty, University of North Carolina at Chapel Hill
- 2018–2022 Assistant professor, University of North Carolina at Chapel Hill
- 2017–2018 Postdoctoral scholar, University of Oregon
- 2011–2017 Research assistant, University of Washington
- 2012–2016 Teaching assistant, University of Washington (5 quarters)

**Publications**

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(\* denotes student mentee as lead author)

- 2022 Malito, J.\*, **Eidam, E.**, Nienhuis, J. Increasing wave energy drives Arctic continental shelves toward a new future. *JGR-Oceans*, 127, e2021JC018374, doi.org/10.1029/2021JC018374
- 2022 Stark, N., Green, B., Brill, N., **Eidam, E.**, Franke, K. W., & Markert, K. Geotechnical Measurements for the Investigation and Assessment of Arctic Coastal Erosion—A Review and Outlook. *Journal of Marine Science and Engineering*, 10(7), 914.
- 2022 **Eidam, E.F.**, Langhorst, T., Goldstein, E.B., McLean, M. OpenOBS: Open-source, low-cost optical backscatter sensors for water quality and sediment-transport research. *L&O Methods*. doi.org/10.1002/lom3.10469
- 2021 Hošeková, L., **Eidam, E.**, Panteleev, G., Rainville, L., Rogers, W.E., Thomson, J. Landfast ice and coastal wave exposure in northern Alaska. *Geophysical Research Letters*. doi.org/10.1029/2021GL095103
- 2021 Harlan, M., Gleason, C., Altenau, E., Butman, D., Carter, T., Chu, V., Cooley, S., Dolan, W., Durand, M., **Eidam, E.**, Fayne, J., Feng, D., Ishitsuka, Y., Kuhn, C., Kyzivat, E.,

- Langhorst, T., Minear, J.T., Pavelsky, T., Peters, D., Pietroniro, A., Pitcher, L., Smith, L. Rapid discharge estimation from dense arrays of pressure transducers. *Water Resources Research*, *Water Resources Research*, 57, e2020WR028714. <https://doi.org/10.1029/2020WR028714>
- 2021 **Eidam, E.F.**, Sutherland, D.A., Ralston, D.K., Conroy, T., Dye, B. Shifting sediment dynamics in the Coos Bay Estuary in response to 150 years of modification. *JGR-Oceans*. [doi.org/10.1029/2020JC016771](https://doi.org/10.1029/2020JC016771)
- 2020 Hošeková, L., Malila, M.P., Rogers, E.W., Roach, L.A., **Eidam, E.**, Rainville, L., Kumar, N., Thomson, J. Attenuation of ocean surface waves in pancake and frazil sea ice along the coast of the Chukchi Sea. *JGR-Oceans*. [doi.org/10.1029/2020JC016746](https://doi.org/10.1029/2020JC016746)
- 2020 **Eidam, E.F.**, Sutherland, D.A., Duncan, D., Kienholz, C., Amundson, J.M., Motyka, R.J. Morainal bank evolution and controls on terminus dynamics during a tidewater glacier stillstand. *JGR-Earth Surface*. [doi.org/10.1029/2019JF005359](https://doi.org/10.1029/2019JF005359)
- 2020 **Eidam, E.F.**, Sutherland, D.A., Ralston, D.K., Dye, B., Conroy, T., Schmitt, J., Ruggiero, P., Wood, J. Impacts of 150 years of shoreline and bathymetric change in the Coos Estuary, Oregon, USA. *Estuaries and Coasts*. [doi.org/10.1007/s12237-020-00732-1](https://doi.org/10.1007/s12237-020-00732-1)
- 2019 **Eidam, E.F.**, Nittrouer, C.A., Lundesgaard, Ø., Homolka, K., Smith, C. Variability of sediment accumulation rates in an Antarctic fjord. *Geophysical Research Letters*, 46. [doi.org/10.1029/2019GL084499](https://doi.org/10.1029/2019GL084499)
- 2019 **Eidam, E.F.**, Ogston, A.S., Nittrouer, C.A. Formation and removal of a coastal flood deposit. *Journal of Geophysical Research: Oceans*, 124(2), 1045–1062. [doi.org/10.1029/2018JC014360](https://doi.org/10.1029/2018JC014360)
- 2019 Sutherland, D.A., Jackson, R.H., Kienholz, C., Amundson, J.M., Dryer, W.P., Duncan, D., **Eidam, E.F.**, Motyka, R.J. and Nash, J.D. Direct observations of submarine melt and subsurface geometry at a tidewater glacier. *Science*, 365(6451), 369–374.
- 2019 Lundesgaard, Ø., Winsor, P., Truffer, M., Merrifield, M., Powell, B., Statscewich, H., **Eidam, E.**, Smith, C.R. Hydrography and energetics of a cold subpolar fjord: Andvord Bay, western Antarctic Peninsula. *Progress in Oceanography*, 181, 102224.
- 2019 Glover, H.E., Ogston, A.S., Miller, I.M., **Eidam, E.F.**, Rubin, S.P. and Berry, H.D. 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*, 1-17.
- 2017 **Eidam, E.F.**, Nittrouer, C.A., Ogston, A.S., DeMaster, D.J., Liu, J.P., Nguyen, T.T., Nguyen, T.N. Dynamic controls on shallow clinoform geometry: Mekong Delta, Vietnam. *Continental Shelf Research* 147, 165–181.
- 2017 DeMaster, D.J., Liu, J.P., **Eidam, E.F.**, Nittrouer, C.A., Nguyen, T.T. Determining rates of sediment accumulation on the Mekong Shelf: Timescales, steady-state assumptions, and radiochemical tracers. *Continental Shelf Research* 147, 182–196.
- 2017 Nittrouer, C.A., DeMaster, D.J., **Eidam, E.F.**, Nguyen, T.T., Liu, J.P., Ogston, A.S., Phung, P.V. The Mekong continental shelf: The primary sink for deltaic sediment particles and their passengers. *Oceanography* 30(3), 60–70.

- 2017 Liu, J.P., DeMaster, D.J., Nittrouer, C.A., **Eidam, E.F.**, Nguyen, T.T. A seismic study of the Mekong Subaqueous Delta: Proximal versus distal accumulation. *Continental Shelf Research* 147, 197–212.
- 2017 Thanh, V.Q., Reyns, J., Wackerman, C., **Eidam, E.F.**, Roelvink, J.A. Modelling suspended sediment dynamics on the delta of the Mekong River. *Continental Shelf Research* 147, 213–230.
- 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., **Eidam, E.F.**, Ogston, A.S., Gelfenbaum, G., Pedersen, R. Increased sediment load during a large-scale dam removal changes nearshore subtidal communities. *PLoS ONE* 12(12):e0187742.
- 2016 **Eidam, E.F.**, Ogston, A.S., Nittrouer, C.A., Warrick, J.A. Tidally dominated sediment dispersal offshore of a small mountainous river: Elwha River, Washington State. *Continental Shelf Research*, 116, 136–148.
- 2015 Gelfenbaum, G., Stevens, A.W., Miller, I., Warrick, J.A., Ogston, A.S., **Eidam, E.** Large-scale dam removal on the Elwha River, Washington, USA: Coastal Geomorphic Change. *Geomorphology*, 246, 649–668.

## Grants

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- 2022 **NSF**, Collaborative research: Sediment fluxes in boreal rivers: determining relative seasonal loads and expanding long-term monitoring capability. **Lead PI**, \$336,638
- 2021 **NASA**, Collaborative research: Measuring coastal turbidity with ICESat-2: Investigation and calibration of a potentially revolutionary dataset. **Lead PI**, \$401,576
- 2020 **NSF**, Collaborative research: Navigating the New Arctic Track 2 – Coastal Arctic Communities in the Context of Climate Change: Interaction between Coastal and Riverine Processes and the Built Environment. **Co-PI**, \$68,778  
web: [www.arcus.org/nna/projects/2022562](http://www.arcus.org/nna/projects/2022562))
- 2020 **NOAA**, Buried or fried? Understanding sedimentation and temperature effects on native species restoration in the South Slough National Estuarine Research Reserve and the Coos Estuary. **Co-PI**, \$124,958 (sub-award)
- 2019 **NSF**, Collaborative research: Arctic Shelf sediment fate - an observational and modeling study of sediment pathways and morphodynamic feedbacks in a changing polar environment. **Lead PI**, \$492,635
- 2019 **UNC**, Junior Faculty Development Award: Development of inexpensive optical backscatter sensors to expand coastal mass transfer studies. **Lead PI**, \$10,000
- 2018 **NOAA**, Improved understanding of sediment dynamics and direct management applications for the South Slough National Estuarine Research Reserve and the greater Coos Bay Estuary. **Co-PI**, \$25,577 (sub-award)

## Conference Activity

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### Oral Presentations (lead author or presenting author; \*denotes student presenter)

- 2022 Langhorst, T., Eidam, E. (presenting author), Davis, J., Pavelsky, T., McLean, M., Himmelstein, J., Goldstein, E., Lützenburg, G. The first year of OpenOBS deployments: successful turbidity measurements in diverse environments and applications. Ocean Sciences Biennial Meeting, Virtual, Feb 28

- 2022 Souza, T.\*, Eidam, E., Keogh, M., Schmitt, J., Sutherland, D., McKee, B., Helms, A. A Century of Disturbance: A Sediment Chronology of the Coos Estuary For the Last 150 Years. Ocean Sciences Meeting, Virtual, Mar 03
- 2021 Eidam, E.F., Hošeková, L., Malito, J., Thomson, J., Souza, T.\* (presenting author), McLean, M., White, O. Sediment dynamics of an Arctic cape and shoals. American Geophysical Union 53<sup>rd</sup> Annual Meeting, New Orleans, Dec 16
- 2021 Hošeková, L., Thomson, J., Eidam, E. (presenting author). Coastal wave exposure in northern Alaska. American Geophysical Union 53<sup>rd</sup> Annual Meeting, New Orleans, Dec 16
- 2020 Eidam, E.F., Sutherland, D.A., Ralston, D.K., Dye, B., Conroy, T. Shifts in sediment routing and deposition associated with 150 years of estuary modification in Coos Bay, Oregon. Ocean Sciences Biennial Meeting, San Diego, Feb 21
- 2019 Eidam, E.F., Sutherland, D.A., Duncan, D., Kienholz, C., Amundson, J., Motyka, R. Morainal bank evolution and fjord infilling during a tidewater glacier stillstand, on seasonal to decadal timescales. American Geophysical Union Annual Meeting, San Francisco, Dec 11
- 2019 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Subaqueous deltas under stress: Interplay of bed stress, sediment transport, and transport direction for the Mekong system compared to other global deltas. American Geophysical Union Annual Meeting, San Francisco, Dec 11 (invited)
- 2019 Eidam, E.F., Sutherland, D.A., Duncan, D., Kienholz, C., Amundson, J., Motyka, R. Evolution of a morainal bank in a fjord over decadal and annual timescales. IGS Glacial Erosion and Sedimentation symposium, Madison, May 17
- 2019 Eidam, E.F. Sedimentary records of dynamic landscapes in glacial fjords. Next Generation of Polar Researchers Leadership Symposium, Catalina Island, May 6
- 2018 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Shear velocity and erosion estimates for heterogeneous substrates. 19th Biennial Ocean Sciences Meeting, Portland, Feb 16
- 2016 Eidam, E.F., Nittrouer, C.A., Ogston, A.S., DeMaster, D.J., Liu, P., Nguyen, T.T. Controls on cross-shore sediment flux and geometry of the subaqueous Mekong Delta. American Geophysical Union 49th Annual Meeting, San Francisco, Dec 13
- 2015 Eidam, E.F., Ogston, A.S., Nittrouer, C.A., Rubin, S., Miller, I. Sediment clearance from the Elwha River plume in the nearshore environment. Elwha Science Symposium, Nature Bridge, Olympic National Park, Nov 19
- 2015 Eidam, E.F., Ogston, A.S., Nittrouer, C.A., Sediment changes to Elwha marine habitats. 9th annual Elwha Nearshore Consortium, Peninsula College, Port Angeles, Feb 20
- 2014 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Gravity flow processes and deposits in a tidally dominated coastal environment. American Geophysical Union 47th Annual Meeting, San Francisco, Dec 16
- 2014 Eidam, E.F., Ogston, A.S., Nittrouer, C.A., Warrick, J.A. Formation and character of fine-grained sediment deposits offshore of the Elwha River during two years of dam removal. Salish Sea Ecosystem Conference, Seattle, May 1
- 2013 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Sediment dispersal across the Elwha Delta: February 2013 update. 8th annual Elwha Nearshore Consortium, Peninsula College, Feb 27

- 2012 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Fine-grained sediment dispersal on the Elwha Delta: An Update (Nov. 2011–Jun. 2012). Elwha Science Symposium, Olympic National Park Nature Bridge, Aug 23
- 2008 Eidam, E.F. The Ethics of Infrastructure Privatization Related to the Proposed Alaska Natural Gas Pipeline. Pacific Northwest ASCE Student Conference, Portland, Apr 25

**Selected Poster Presentations** (lead author or advisor; \*denotes student presenter)

- 2021 Malito, J.G.\*, Eidam, E.F., Nienhuis, J. Evolution of Arctic continental shelves: modelling morphodynamic feedbacks to climate-driven increases in sea states. American Geophysical Union 53<sup>rd</sup> Annual Meeting, Dec 14 (*Outstanding student presentation award*)
- 2021 Malito, J.G.\*, Eidam, E.F., Nienhuis, J. A shelf in disequilibrium: how Arctic shelves may respond to climate-driven changes in sea states. Arctic Science Summit Week, Virtual, Mar 25
- 2020 Malito, J.G.\*, Eidam, E.F., Nienhuis, J. A shelf in disequilibrium: how Arctic continental shelves may respond to climate-driven changes in sediment supply and sea states. American Geophysical Union 52<sup>nd</sup> Annual Meeting, Virtual, Dec 16
- 2020 Eidam, E.F., Langhorst, T., Richardson, C., Goldstein, E.B. Economical DIY optical backscatter sensors for measurements of turbidity and sediment concentrations. American Geophysical Union 52<sup>nd</sup> Annual Meeting, Virtual, Dec 07
- 2018 Eidam, E.F., Conroy, T.C., Sutherland, D.A., Ralston, D.K. Fine-sediment dynamics in the estuary of a small mountainous river. American Geophysical Union 51st Annual Meeting, Washington, D.C., Dec 11
- 2017 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Observations from a gravity flow at the mouth of the Elwha River (WA) during dam removal. Gordon Research Conference on Coastal Ocean Dynamics, University of New England, Jun 14–15
- 2016 Eidam, E., Nittrouer, C., Ogston, A., Liu, P., DeMaster, D., Nguyen, T. Growth of the shallow Mekong clinoform and the impact of seasonal variability in fluvial and shelf processes. 18th Biennial Ocean Sciences Meeting, New Orleans, Feb 26
- 2014 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Sediment dispersal and deposition on a submarine delta during dam removal: Elwha River, WA, 17th Biennial Ocean Sciences Meeting, Honolulu, Feb 25
- 2012 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Fine-grained sediment dispersal mechanisms and pathways on the subaqueous Elwha River delta during dam removal. American Geophysical Union 45th Annual Meeting, San Francisco, Dec 3

**Institutes and Workshops**

- 2022 ICESat2 Hackweek, Virtual (University of Washington), Mar 21–25
- 2021 OOIFB/NSF Pioneer Array Innovations Lab, Virtual, Jun 21-25
- 2019 NAGT (National Association of Geoscience Teachers) Workshop for Early Career Geoscience Faculty, College Park, Maryland, Jul 28–Aug 1
- 2019 Next Generation of Polar Researchers Leadership Symposium, University of Southern California's Wrigley Marine Science Center, Catalina Island, May 6–10

- 2015 Summer Institute for Earth Surface Dynamics, National Center for Earth Surface Dynamics, Tulane University, New Orleans, Jul 27–Aug 5
- 2013 NSF Pan-American Studies Institute: Toward a sustained operational river-to-shelf observation and prediction system for the Amazon, Universidad Federal Fluminense, Niteroi and Ubatuba, Brazil, Jul 28–Aug 9

### **Invited and Seminar Talks**

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- 2021 Eidam, E.F. Sediment transport processes and products in high-latitude and estuarine environments. Oregon State University CEOAS research seminar, Oct 28
- 2021 Eidam, E.F. Shifting sediment dynamics in response to 150 years of modifications (Coos Bay, Oregon). Oregon State University CEOAS physics seminar, Feb 2
- 2021 Eidam, E.F. Modeling past and present hydrodynamics and sediment dynamics in Coos Bay, Oregon. UT Institute of Geophysics seminar, Jan 29
- 2019 Eidam, E.F. Evolution of a New Tidewater Glacier Moraine and Implications for Glacier Stability. UNC Geological Sciences Colloquium, Oct 31
- 2019 Eidam, E.F. Modeling and predicting sediment dynamics in a heavily used estuary for historic, modern, and future bathymetries. Old Dominion University Ocean, Earth, and Atmospheric Sciences seminar series, Feb 14
- 2019 Eidam, E.F. Modeling and predicting sediment dynamics in a heavily used estuary for historic, modern, and future bathymetries. Skidaway Institute of Oceanography seminar series, Jan 14
- 2018 Eidam, E.F. Sediment transport in the Elwha coastal zone. UW Friday Harbor Labs Marine Sedimentary Processes research apprenticeship, guest lecture, Nov 2
- 2018 Eidam, E.F. Sediment dynamics and societal concerns in a Northwest estuary. UNC Department of Marine Sciences seminar series, Oct 31
- 2018 Eidam, E.F. Sediment dynamics and shoreline changes in Coos Bay Estuary, Oregon. UNC Institute of Marine Sciences seminar series, Sep 27
- 2018 Eidam, E.F. Coastal dispersal of Elwha River reservoir sediments. WHOI Coastal Ocean Fluid Dynamics Laboratory seminar, Jun 1
- 2017 Eidam, E.F. Flood of mud: Coastal sedimentary response to the Elwha dam removals. University of Oregon Department of Earth Sciences seminar, Oct 4
- 2017 Eidam, E.F. Processes and records of coastal sediment dispersal in contrasting deltaic systems. UW Oceanography MG&G seminar/dissertation defense, 11 Jul
- 2017 Eidam, E.F. Sedimentary processes contributing to delta evolution: Insights from the Elwha and Mekong dispersal systems. UNC Chapel Hill Department of Marine Sciences seminar, Mar 2
- 2017 Eidam, E.F., Ogston, A., Nittrouer, C. Tidally mediated export and retention of fine-grained sediment in contrasting delta systems. UW Oceanography MG&G seminar, Feb 13
- 2015 Eidam, E.F., Ogston, A., Nittrouer, C., Stevens, A., Warrick, J., Miller, I., Rubin, S. Particle export from the Elwha River plume. UW Oceanography MG&G seminar, Dec 7

- 2014 Eidam, E.F., Ogston, A., Nittrouer, C. Beyond the Beach: The Dynamics of Fine-grained Sediment in Water Depths Beyond 10-15 Meters. Short Takes on Dam(n) Science, Burke Museum/Neptune Theatre, Feb 18
- 2013 Eidam, E.F. Dispersal of fine-grained sediment in the tidally dominated Elwha coastal system. UW Oceanography MG&G seminar, Dec 3
- 2012 Eidam, E.F., Ogston, A.S., Nittrouer, C.A. Fine-grained sediment dispersal offshore of the Elwha River mouth during dam removal. UW Oceanography MG&G seminar, Oct 22

## Research Experience

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- 2021–present IceSat2 ATLAS sediment inventory calibration project (NASA); University of North Carolina. *Led field research and mentored student to explore a novel calibration from photon data.*
- 2020–present Navigating the New Arctic planning project (NSF); University of North Carolina. *Assisted with coordination of community workshops to guide future research planning.*
- 2019–present Alaskan Beaufort Shelf sediment transport (NSF); University of North Carolina *Lead PI on sediment transport study in the Harrison Bay region; participant in fall 2019 Sikuliaq cruise to collect transport and bed measurements on the Beaufort and Chukchi shelves, in collaboration with PI J. Thomson/CODA project.*
- 2019–present Nepal high-altitude lake study; University of North Carolina *Assisted with field studies of alpine lakes in the Everest region to address questions of stratification and sediment dynamics under changing environmental conditions.*
- 2019–present Peace-Athabaskan Delta sediment dynamics; University of North Carolina *Collaborated with a hydrology and remote sensing team to investigate sediment transport dynamics in a large sub-polar inland deltaic system.*
- 2017–present Coos Bay Estuary sediment dynamics study (NOAA); University of Oregon *Assisted with field observations and numerical modeling of sediment transport in the greater estuary and South Slough National Estuarine Research Reserve.*
- 2017–2019 Le Conte fjord tidewater glacier study (NSF); University of Oregon *Assisted with field observations and analyses of multibeam, CHIRP, and sediment-flux data.*
- 2015–2017 Elwha sediment and light study (WA Sea Grant); University of Washington *Assisted with proposal writing, field surveying, data processing, and undergraduate and graduate student mentoring; developed and deployed instrument platforms.*
- 2016 FjordEco West Antarctic Peninsula ecosystem study (NSF); University of Washington / University of Hawaii *Collected and processed kasten cores and mentored undergraduates in radiochemical techniques and evaluation of sedimentary processes.*
- 2014–2016 Mekong Delta tropical deltas project (ONR); University of Washington *Investigated hydrodynamic processes and recent, century-scale depositional patterns to understand the evolution of large clinoforms in shallow seas; was responsible for conceptual development, data collection, and publication of results.*
- 2011–2016 Elwha Delta gravity flows project (NSF); University of Washington *Investigated sediment-transport processes and the evolution of a new muddy deposit, to understand transport pathways in energetic, mixed-grain-size environments; was responsible for conceptual development and publication of research topics, as well as data collection.*

- 2010            Glacial erratic survey in Cook Inlet Basin; University of Alaska Anchorage  
*Surveyed boulders in southcentral Alaska to unravel LGM glacial flow patterns.*

## **Teaching Experience**

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- 2022    Instructor of record, MASC763, Coastal Oceanography (3 cr, spring; co-taught with H. Seim). *Lectured on continental shelf dynamics, boundary-layer dynamics, and sediment transport.*
- 2022    Instructor of record, MASC490, Introductory Sediment Dynamics and Research Skills (1 cr, spring). *Led a workshop-style seminar on fundamentals of sediment transport and graduate research strategies.*
- 2021    Instructor of record, MASC503, Marine Geology and Geophysics (4 cr, fall).
- 2021    Instructor of record, MASC490, Fluvial and Coastal Sediment Dynamics (3 cr, spring). *Lectured on engineering mechanics of sediment transport and transport/deposition environments. Introduced students to data analysis in Matlab, and collection and analysis of field instrument data.*
- 2020    Instructor of record, MASC503, Marine Geology and Geophysics (4 cr, fall). *Lectured on diverse marine geology topics in a virtual setting; led practical exercises on data analyses.*
- 2020    Instructor of record, MASC401, Introduction to Oceanography (4 cr, spring). *Lectured on geological, physical, chemical, and biological oceanography; facilitated small-group discussions.*
- 2019    Instructor of record, MASC503, Marine Geology and Geophysics (4 cr, fall). *Lectured on marine geology topics from the deep ocean to coastal environments; led paper discussions, interactive activities, and a field trip to the North Carolina coast.*
- 2019    Instructor of record, MASC706, Interdisciplinary Seminar (1 cr, spring). *Led interactive class sessions on forming and presenting scientific research seminars, culminating in 50-min student presentations.*
- 2018    Co-instructor of record, MASC894, Frontiers in Marine Geology seminar (1 cr, autumn). *Facilitated student/faculty discussions of current scientific papers.*
- 2016    Teaching Assistant, Ocn 492, Marine Sedimentary Processes Research Apprenticeship (15 cr, autumn). *Led student field work on R/V Barnes; taught programming and writing workshops; mentored students in research techniques and writing skills for thesis and non-thesis projects.*
- 2016    Teaching Assistant, Ocn 410: Marine Geology & Geophysics (4 cr, winter). *Co-taught lab sections; graded assignments and exams; provided study sessions and office hours.*
- 2014    Teaching Assistant, Ocn 230: Rivers and Beaches (3-5 cr, autumn). *Organized field trips; provided individual and group tutoring; graded research papers and exams; lectured on a substitute basis.*
- 2014    Guest lecturer, Ocn 492: Marine Sedimentary Processes Research Apprenticeship (3 days). *Lectured; led field trips; mentored students on presentations for a public event.*
- 2014    Guest lecturer/teaching assistant, Ocn 220: Intro to Field Oceanography (3 days). *Led orientation activities and lab work; assisted with short cruises.*
- 2013    Teaching Assistant, Ocn 492: Marine Sedimentary Processes Research Apprenticeship—Elwha River Dam Removal (15 cr, spring). *Supervised and developed lab activities; helped lead fieldwork and field trips; lectured on a substitute basis.*
- 2012    Teaching Assistant, Ocn 492: Marine Sedimentary Processes Research Apprenticeship—Elwha River Dam Removal (15 cr, spring). *Supervised and developed lab activities; helped lead fieldwork and field trips.*



## Field Experience (>240 days at sea)

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2021–2022	Beaufort shelf (AK), coastal sediment dynamics, R/V Ukpik, 23 days
2019–2020	Chukchi & Beaufort shelves (AK), coastal sediment dynamics, R/V Sikuliaq, 50 days
2019	Himalayan alpine lakes (Nepal), hydrology & sediments, small vessel, 5 days
2019	Peace-Athabaskan Delta (Canada), fluvial sediment fluxes, small vessel, 15 days
2017–2018	Coos Bay Estuary (OR), sediment dynamics, small vessels, 10+ days
2017–2018	LeConte Bay (AK), fjord sediments, M/V Steller & F/V Amber Anne, 13 days
2016–2017	Elwha Delta (WA), sediment impacts on light attenuation, small vessels, 15+ days
2016	Andvord Bay (Antarctica), fjord sediment accumulation, R/V Palmer, 30 days
2014–2015	Mekong Delta (Vietnam), sediment dynamics, CSG-99 tugboat, 15 days
2013	Hood Canal (WA), sediment accumulation, R/V Centennial, 2 days
2011–2015	Elwha Delta (WA), sediment dynamics (including undergraduate education cruises), R/V Barnes, R/V Centennial, R/V Thompson, R/V Karluk, R/V Frontier, 66 days

## Service

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### Graduate advisor (university, track):

2022–present	Adrian Heath (OSU, MSc)
2022–present	Caroline Cooper (UNC, MSc)
2020–present	Tyler Souza (UNC, MSc)
2019–2021	John Malito (UNC, MSc)
	<i>Thesis: Evolution of arctic continental shelves: Modelling morphodynamic feedbacks to climate-driven increases in sea states</i>

### Graduate committee member (university, track):

2021–present	Julianne Davis (UNC, PhD)
2021–present	Joshua Himmelstein (UNC, PhD)
2021–present	Hunter Quintal (UNC, PhD)
2021–present	Brianna Ingram (UNC, PhD)
2021–2022	Benton Franklin (UNC, PhD)
2020–present	Nick Brill (VT, PhD)
2020–2022	Molly Yacano (UNC, PhD)
2020–present	Wayana Dolan (UNC, PhD)
2020–present	Ted Langhorst (UNC, PhD)
2019–2022	Anne Smiley (UNC, PhD)
2018–2020	Carson Miller (UNC, MSc)
2017–2022	Molly Bost (UNC, PhD)

### Other:

2022	Member, Steering Committee, IGS Conference on Maritime Glaciers (Juneau, AK)
2022	Member, Selection Committee, Vice Chair for Ocean Sciences Meeting 2024
2021–2022	Member, UNC Earth, Marine, and Environmental Sciences Graduate Program task force (for re-designing the graduate program structure under a new degree)
2021–2022	Member, UNC Earth, Marine, and Environmental Sciences Graduate Admissions Committee

2021–present Member, NSF OOI Pioneer Array relocation advisory group  
2020–present Member, UNOLS Arctic Icebreaker Coordinating Committee  
2020 STEMSEAS virtual ambassador, R/V Sikuliaq survey, Sep/Oct  
2020–2021 Member, UNC Marine Sciences/Geological Sciences/Institute of Marine Sciences merger committee  
2019–2022 Member, UNC Marine Sciences seminar committee  
2019 Member, UNC Marine Sciences 50<sup>th</sup> anniversary committee  
2019 Mentor, UNC IDEA summer internship program (1 student)  
2018 Co-mentor, UO Dept. of Earth Sciences senior undergraduate thesis  
2017 Session convener, “Dynamic Deltas: Processes and Records of Change,” American Geophysical Union Annual Meeting, New Orleans, Dec 11  
2016–present Journal reviewer (JGR-Oceans; Marine Geology; Continental Shelf Research; Estuaries and Coasts; Geology; Progress in Oceanography; Coastal Frontiers; Geophysical Research Letters; PLoS ONE; Estuarine, Coastal and Shelf Science; Water Resources and Industry; Journal of Marine Science; International Journal of Sediment Research)  
2016–2017 Co-mentor, UW School of Oceanography senior undergraduate theses (3 students)  
2015–2016 Student representative, Graduate Program Committee, UW School of Oceanography  
2014–2016 Student faculty-meeting representative, UW School of Oceanography  
2014–2016 Instructor for Ocean Inquiry Project experiential learning cruises, 6 day trips  
2009–2010 Secretary (fall semester) and Vice President (spring semester), UAA Geology Club  
2007–2008 Secretary, American Society of Civil Engineers, UAA Student Chapter

### **Other Professional Experience**

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2011 Technical Editor, State of AK Dept. of Fish and Game  
2011 K-12 Substitute Teacher, Anchorage School District  
2009–2011 Project Management Intern, State of AK Dept. of Env. Conservation; certified EIT  
2007–2008 Civil Engineering Intern, DOWL HKM; certified EIT  
2005–2006 GIS/Public Service Intern, Anchorage Water and Wastewater Utility