

Steven L. Dykstra

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I research ocean-land-ice interactions, focusing on river-marine transitions and the role of human impacts. By differentiating effects of climate change, natural variability, and the built environment in high latitudes, my research advances our scientific understanding of flood risks, global warming impacts, and predicting environmental change. Equally important is my **teaching of environmental stewardship** in academia, for outdoor education, and to diverse groups throughout the world.

EDUCATION

2021 **PhD in Marine Science**, Dauphin Island Sea Lab/University of South Alabama
 dissertation title: The role of river discharge on flooding and tides in the fluvial-marine transition
2010 **Masters of Environmental Science**, Taylor University
2008 **Bachelors of Science in Geology**, Calvin University

PROFESSIONAL EXPERIENCE:

Academic:

2023-present **Assistant Professor**, Oceanography Dept., University of Alaska Fairbanks
2021-2023 **Postdoctoral Researcher**, Civil & Env. Eng. Dept., University of South Carolina
2021-2023 **Research Consultant**, California Polytechnic State University, San Luis Obispo
2022 **Temporary Faculty**, School of Earth, Ocean, Env., University of South Carolina
2019-2021 **DISL/FDA Research Fellow**, FDA Gulf Coast Seafood Laboratory
2015-2021 **Graduate Research Assistant**, Dauphin Island Sea Lab
2018-2019 **Graduate Teaching Assistant**, Marine Sci. Dep., University of South Alabama
2009 **Graduate Teaching Assistant**, Env. Sci./Chemistry Depts., Taylor University
2008-2009 **Graduate Research Assistant**, Env. Sci. Dept., Taylor University

Non-Academic Consulting and Teaching/Guiding:

2014-2015 **Surveyor**, Roosien & Associates (Michigan)
2014 **Trek Leader**, Expedition Therapy (Utah, Arizona)
2012-2013 **Hydrologist**, Global Partners International (Tajikistan)
2011-2012 **College Ministry Instructor/Leader**, Crossroads Bible Church (Michigan)
2010 **Environmental Engineer Intern**, Dynamic Solutions Int. (Vietnam)
2009 **Group Leader**, Intrepid Travel (throughout North America)
2008 **Hydrogeology Intern**, Fishbeck, Thompson, Carr, and Hubert, Inc. (Michigan)
2005-2007 **Naturalist**, Kenai Fjords Tours (Alaska)
2002-2006 **Instructor/Coach**, MVP Athletic Club (Michigan)

SYNERGISTIC ACTIVITIES (recent)

2024-present *PI*, Ice Impacts on the Resonance, Convergence, and Friction of Tidal Transport (Tide-Ice ReCon), CMI/U.S. Bureau of Ocean and Energy Management
2024-present *co-PI*, Integrated System for Operations in Polar Seas- Logistics Over the Shore (ISOPS-LOTS), US Army Corp of Engineers CRREL
2024-present *PI*, Tide and Storm Surge Hazards in a Convergent Resonant Estuary, Kuskokwim River (CFOS-UAF)
2024-present *co-PI* (student led), Baseline Study of the Snake River Estuary Dynamics, Nome, Alaska, WERC (UAF), Water Resources Research Act, U.S. Geological Survey

Steven L. Dykstra

- 2023-present *co-PI*, Alaska Coastal Mapping Center of Excellence, Woolpert, inc./Joint Airborne Lidar Bathymetry Technical Center of Expertise (USACoE)
- 2023-present *Steering Committee Member*, Alaska Water Level Watch, Alaska Ocean Observing System, IOOS
- 2023-present *Senior/Lead Scientist*, COASTal (Cryosphere, Ocean, And Stream) Dynamics Lab, University of Alaska Fairbanks
- 2023-present *Affiliate*, Institute of Arctic and Alpine Research (INSTAAR), University of Colorado, Boulder
- 2021-2024 *PI (Institutional)*, Assessing Sea-Level Rise and Flooding Changes in the Sacramento-San Joaquin Delta using Historical Records, U.S. Bureau of Reclamation & Delta Stewardship Counsel (CA) (first author manuscript in-prep)
- 2021-2024 *Contributor*, Geomorphic Versus Climatic Drivers of Changing Coastal Flood Risk, NSF PREEVENTS
- 2021-2023 *Contributor (Lead)*, The Impact of Harbor Modification on Coastal Floods: The case of Charleston, SC, USC ASPIRE Grant
- 2015-2021 *Member and Contributor*, Consortium for Oil Spill Exposure Pathways in Coastal River Dominated Ecosystems (CONCORDE), Gulf of Mexico Research Initiative
- 2016-2021 *Leader and Organizer*, Dauphin Island Sea Lab Weekly Study Group
- 2019-2020 *Contributor* to Core Investigative Team, NOAA Bottlenose Dolphin Unusual Mortality Event Along the Northern Gulf of Mexico
- 2015-2017 *Organizing Member*, CONCORDE Mentorship Program
- 2015 *Contributor*, Water Quality in Bangs Lake: Effects of Recurrent Phosphate Spills to a Coastal Estuary, Grand Bay National Estuary Research Reserve

PUBLICATIONS: PEER-REVIEWED (16) *mentored/funded student

- Polyakov, I.; Pnyushkov, A.; Carmack, E.; Charette, M.; Cho, K.; **Dykstra, S. L.**; Haapala, J.; Jung, J.; Kipp, L.; Yang, E. J. (**in-review**). Role of sea ice, stratification, and near-inertial oscillations in shaping the upper Siberian Arctic Ocean currents. *Ocean Science*. <https://doi.org/10.5194/egusphere-2025-2316>
- Fink, M.; Baranes, H.; **Dykstra S. L.**; Talke, S. A.; Hanebuth, T. (**in-review**). Compound Minor Flooding and Relative Sea Level Rise in the Lower Winyah Bay Watershed. *Estuaries and Coasts*.
- Lee, S.B., **Dykstra S. L.**, Gomez-Sanchez, R., Wilkenson, C., Estrada, R., McGuire, N., Jay, D.A., Talke, S.A. (**2025**). Recovery of daily water levels in the Sacramento-San Joaquin Delta, 1915-2023. *Geoscience Data Journal*. <https://doi.org/10.1002/gdj3.70018>
- Dykstra, S. L.**; Viparelli, E.; Torres, R.; Yankovsky, A.; Talke, S. A. (**2024**). Storm Surge and Tidal Reflection in Convergent Estuaries with Dams, the case of Charleston, USA. *Journal of Geophysical Research: Oceans*, Special collection: Physical processes, sediment transport and morphodynamics of estuaries and coastal seas, Given **Editor's Highlights**. <https://doi.org/10.1029/2023JC020498>
- Lobo, M.***; Jay, D. A.; Innocenti, S.; Talke, S. A.; **Dykstra, S. L.**; Matte, P. (**2024**). Super-resolution of non-stationary tides: wavelet tidal analysis with separation of constituents. *Journal of Atmospheric and Oceanic Technology*. <https://doi.org/10.1175/JTECH-D-23-0144.1>
- Dykstra, S. L.**, Ricche, G., Marmorino, G., & Yankovsky, A. E. (**2024**). Forcing conditions of cross-shelf plumes on a wide continental shelf, Winyah Bay, South Atlantic Bight. *Remote Sensing of Environment*, 311, 114279. <https://doi.org/10.1016/j.rse.2024.114279>

Steven L. Dykstra

- Mullins, L.*;** Cartwright, J.; **Dykstra, S. L.;** Evans, K.; Mareska, J.; Matich, P.; Plumlee, J. D.; Sparks, E.; Drymon, J. M. (2024). Warming waters lead to increased habitat suitability for juvenile bull sharks (*Carcharhinus leucas*). *Nature: Scientific Reports*, 14(1), 4100. <https://doi.org/10.1038/s41598-024-54573-0>
- Baranes, H., **Dykstra, S. L.,** Jay, D. A., & Talke, S. A. (2023). Sea level rise and the drivers of daily water levels in the Sacramento-San Joaquin Delta. *Nature: Scientific Reports*, 13(1), 22454. <https://doi.org/10.1038/s41598-023-49204-z>
- Dykstra, S. L.;** Dzwonkowski, B.; Torres, R. (2022). The role of river discharge and geometric structure on diurnal tidal dynamics, Alabama, USA. *Journal of Geophysical Research: Oceans*. <https://doi.org/10.1029/2021JC018007>.
- Gadeken, K. J.; Clemo, W. C.; Ballentine, W.; **Dykstra, S. L.;** Fung, M.; Hagemeyer, A.; Dorgan, K. M.; Dzwonkowski, B. (2021). Transport of biodeposits and benthic footprint around an oyster farm, Damariscotta Estuary, Maine. *PeerJ*, <https://doi.org/10.7717/peerj.11862>.
- Dykstra, S. L.;** Dzwonkowski, B. (2021). The role of intensifying precipitation on coastal river flooding and compound river-storm surge events, northeast Gulf of Mexico. *Water Resources Research*, Special section: Floodplains as complex adaptive systems, <https://doi.org/10.1029/2020WR029363>.
- Axler, K. E.; Sponaugle, S.; Briseño-Avena, C.; Hernandez Jr., F.; Warner, S. J.; Dzwonkowski, B.; **Dykstra, S. L.;** Cowen, R. K. (2020). Variability in fine-scale distributions and predator-prey relations of larval fishes during a high discharge event in the northern Gulf of Mexico. Special issue: Latest advances in research on fish early life stages. *Marine Ecology Progress Series*, 650, <https://doi.org/10.3354/meps13397>.
- Greer, A. T.; Boyette, A. D.; Cruz, V. J.; Cambazoglu, M. K.; Dzwonkowski, B.; Chiaverano, L. M.; **Dykstra, S. L.;** Briseño-Avena, C.; Cowen, R. K.; Wiggert, J. D. (2020). Contrasting fine-scale distributional patterns of zooplankton driven by the formation of a diatom-dominated thin layer. *Limnology and Oceanography*, 22, <https://doi.org/10.1002/lno.11450>.
- Dykstra, S. L.;** Dzwonkowski, B. (2020). The propagation of fluvial flood waves through a backwater-estuarine environment. Special section: Coastal hydrology and oceanography. *Water Resources Research*, 55, <https://doi.org/10.1029/2019WR025743>.
- Dzwonkowski, B.; Fournier, S.; Reager, J. T.; Milroy, S.; Park, K.; Shiller, A. M.; Greer, A. T.; Soto, I.; **Dykstra, S. L.;** Sanial, V. (2018). Tracking sea surface salinity and dissolved oxygen on a river-influenced, seasonally stratified shelf, Mississippi Bight, northern Gulf of Mexico. *Continental Shelf Research*, <https://doi.org/10.1016/j.csr.2018.09.009>.
- Dzwonkowski, B.; Fournier, S.; Park, K.; **Dykstra, S. L.;** Reager, J. T. (2018). Water column stability and the role of velocity shear on a seasonally stratified shelf, Mississippi Bight, northern Gulf of Mexico. *Journal of Geophysical Research: Oceans*, <https://doi.org/10.1029/2017JC013624>.
- Greer, A. T.; Shiller, A. M.; Hofmann, E. E.; Wiggert, J. D.; Warner, S. J.; Parra, S. M.; Pan, C.; Book, J. W.; Joung, D.; **Dykstra, S. L.;** Krause, J. W.; Dzwonkowski, B.; Soto, I. M.; Cambazoglu, M. K.; Deary, A. L.; Briseño-Avena, C.; Boyette, A. D.; Kastler, J. A.; Sanial, V.; Hode, L.; Nwankwo, U.; Chiaverano, L. M.; O'Brien, S. J.; Fitzpatrick, P. J.; Lau, Y. H.; Dinniman, M. S.; Martin, K. M.; Ho, P.; Mojzis, A. K.; Howden, S. D.; Hernandez, F. J.; Church, I.; Miles, T. N.; Sponaugle, S.; Moum, J. N.; Arnone, R. A.; Cowen, R. K.; Jacobs, G. A.; Schofield, O.; Graham, W. M. (2018). Functioning of coastal river-dominated

Steven L. Dykstra

ecosystems and implications for oil spill response: from observations to mechanisms and models, *Oceanography*, 31, 3, <https://doi.org/10.5670/oceanog.2018.302>.

Dzwonkowski, B.; Greer, A. T.; Briseño-Avena, C.; Krause, J. W.; Soto, I. M.; Hernandez, F. J.; Deary, A. L.; Wiggert, J. D.; Joung, D.; Fitzpatrick, P. J.; O'Brien, S. J.; **Dykstra, S. L.**; Lau, Y.; Cambazoglu, M. K.; Lockridge, G.; Howden, S. D.; Shiller, A. M.; Graham, W. M. (2017). Estuarine influence on biogeochemical properties of the Alabama shelf during the fall season, *Continental Shelf Research*, 140, 96–109, <https://doi.org/10.1016/j.csr.2017.05.001>.

Selected Manuscripts In-Preparation (first author):

Dykstra, S. L.; Talke, S. A.; Jay, D. (**in-prep**). Tidal controls on river water levels and discharge routing, Mobile-Tensaw bifurcation, Alabama. Progress: $\frac{3}{4}$ written, Target: *Water Resources Research*.

Dykstra, S. L.; Midraj, N.; Mahoney, A. (**in-prep**). Freeze-up delay by seasonal Atlantic Water upwelling in the Chukchi Sea. Target: *Science of the Total Environment*.

Dykstra, S. L.; Baranes, H. E; Talke, S. A.; Jay, D. (**in-prep**). Sea level rise and high-water mechanics in a sinking delta, Sacramento-San Joaquin Delta, USA. Target: *AGU Advances*.

AWARDS/FUNDING (funding secured: \$7,000,000+)

Submitted	Collaborative Research: How does Ice affect Tidal and Subtidal Flows in Estuaries? (\$2,346,369, Dykstra: \$582,343), NSF Office of Polar Programs, # 262353
Pending	POC Pathways in a Changing Arctic: Fluxes, Reactivity, and Transformations across Arctic River-Delta-Shelf Systems (\$XXXX, Dykstra: \$462,792), NASA FORTE Science Team
Pending	Tracking the Yukon River: the impact of river discharge on coastal biogeochemistry and productivity beyond the delta (\$2,346,369, UAF: \$856,549, Dykstra: \$271,558), North Pacific Research Board IERP
2025	CFOS 2025 Outstanding Researcher, Dean's Recognition Award, UAF CFOS
2025	Faculty Mentorship Grant Writing Award (\$14,500), UAF
2025	Troth Yeddha' Award- Round 4 (\$47,720 x2), UAF
2025	PhD Campus Preview Award (\$1,200), UAF
2024	Faculty PhD Student Mentorship Award (\$10,000), UAF
2024	Fire & Ice Travel Grant (\$3,500), Alaska EPSCORE (NSF)
2024	Ice Impacts on the Resonance, Convergence, and Friction of Tidal Transport (Tide-Ice ReCon) (\$298,000), CMI (UAF), U.S. Bureau of Ocean and Energy Management
2024	Baseline Study of the Snake River Estuary Dynamics, Nome, Alaska (\$22,555, Dykstra is Co-I on student Evan Joyce led project), WERC (UAF), Water Resources Research Act, U.S. Geological Survey
2024	Enhancing the Integrated System for Operations in Polar Seas (\$4,999,518, Dykstra subcontract: \$770,000), U.S. Army Corp of Engineers ERDC Broad Agency (CRREL-2)
2024	Alaska Coastal Mapping Center of Excellence-BP3 (\$TBD total, Dykstra subcontract: \$10,827), Woolpert, inc./Joint Airborne Lidar Bathymetry Technical Center of Expertise
2024	Travel Grant (\$1,600), Alaska EPSCORE (NSF)

Steven L. Dykstra

- 2023 Alaska Coastal Mapping Center of Excellence-2 (\$1,156,236, Dykstra subcontract: \$21,074), Woolpert, inc./Joint Airborne Lidar Bathymetry Technical Center of Expertise
- 2022 Assessing Sea-Level Rise and Flooding Changes in the Sacramento-San Joaquin Delta using Historical Records (\$529,805; Dykstra subcontract: \$50,000)- U.S. Bureau of Reclamation & California Delta Stewardship Counsel
- 2020, 2019 DISL/FDA Fellowship (\$27,000 x2)- Food and Drug Administration
- 2020 Virtual Student Travel Grant (\$1,000)- American Geophysical Union
- 2020, 2020 GSA Cares (\$200 x2)- Geological Society of America
- 2015-2019 Travel Grant (\$150 x5)- Marine Science Student Organization
- 2018, 2016 Dep. of Marine Science Travel Grant (\$1,500 x2)- Univ. of S. Alabama
- 2017 Best Presentation- Young Coastal Scientist and Engineers Conference
- 2017 GoMRI Scholar- Gulf of Mexico Research Initiative
- 2012-2013 Private donations and small grants (\$30,000)- for Global Partners projects
- 2010 Honorary Abstract Photographer- Geological Society of America
- 2008-2009 Research and Outreach Grant (\$15,000)- Indiana Space Grant Consortium
- 2008, 2009 Leland Boren Grant (\$10,000 x2)- Taylor University
- Submitted but NOT funded:**
- 2025 Collaborative Research: Role of the Siberian Arctic Ocean as an integrator of responses to remote and local forcing in shaping high-latitude climate variability (\$5,381,090, UAF: \$3,992,720, Dykstra: \$752,778), Arctic Observing Network Program (NSF OPP), # 2518675
- 2025 Collaborative Research: What is the Fate of Sediment and Organic Carbon in Changing Arctic Source to Sink Systems? (\$2,346,369, Dykstra: \$787,453), NSF Office of Polar Programs, # 2517940 (Note: all reviews were 'Excellent')
- 2024 Collaborative Research: What is the fate of sediment and organic carbon in changing Arctic source to sink systems? (\$1,997,758, Dykstra: \$615,703), NSF OPP, # 2416680
- 2024 Aulukluku- To Care For (\$7,465,445, Dykstra: \$394,947), 2023 Inflation Reduction Act Climate Ready Workforce for Coastal States, Tribes, and Territories Competition (NOAA)
- 2023 Request for Coastal Resilience Projects, Alaska Ocean Observing System (NOAA), "Longitudinal Observations of the Kuskokwim Marine-River Gradient as Precursor for Long-Term Coastal Resilience Monitoring", (\$433,000, Not Funded)
- 2023 Request for Coastal Resilience Projects, Alaska Ocean Observing System (NOAA), "Assessing Flooding and Climate Change using Historical Records", (\$877,000, Not Funded)
- 2023 Research Opportunity, University of Alaska Coastal Marine Institute/Bureau of Ocean Energy Management, "Circulation Pathways in Cook Inlet Estuaries (C-PiCIE)", (\$470,000, Not Funded)
- 2023 Alaska Sea Grant (NOAA), "Predictable Coastal Flooding from Historical Records and Geometry for Alaskan Communities", (\$174,000, Not Funded)
- 2019 Postdoctoral Scholar Program, Woods Hole Oceanographic Institution, "Dynamic equilibrium of coastal morphology from tidal induced hydraulic jumps", (\$93,375, Not Funded)
- 2019 Research Fellowship Program, Alabama Space Grant Consortium, "Connecting terrestrial watershed characteristics with their oceanic impact (COTCO)", (\$30,409, Not Funded)
- 2017 Graduate Student Research Grant, Geological Society of America, "Sediment Exchange by Tide and Discharge" (\$2,500, Not Funded)
- 2016 Graduate Student Research Grant, Geological Society of America, "Morphology driven transport at river mouths, tidal inlets, and their subsequent estuarine plumes" (\$2,500, Not Funded)
- 2015 Graduate Research Fellowship Program, National Science Foundation, "Hydrodynamics of Coastal Inlets and their subsequent estuarine plumes", (\$114,000, Not Funded)

OUTREACH/SERVICE

- 2020-2021 Town of Dauphin Island Sensitive Wetland Management Plan
- 2015-2021 DISL events: Discovery Day, Boardwalk Talks, Coastal Cleanup
- 2013 International Student/Development Mentoring Program (Horizons International)

Steven L. Dykstra

2012-2013	Zeravshan Valley Irrigation Development (Global Partners Tajikistan)
2002-2012	Student Ministry Leader & Mentor (Blythefield Hills/Crossroads Bible Church)
2010	Hanoi Municipal Arsenic Project (Dynamic Solutions Intl.- Vietnam)
2008-2009	Hoosier River Watch (Taylor University, Indiana DEM)
2006	Ngorongoro Conservation Area WASH (Hilfe für die Massai- Tanzania)
Ongoing	Reviewer: AGU Advances (2022), Climatic Change (2022), Continental Shelf Res. (2017x2), Env. Processes (2021), Estuarine Coastal and Shelf Science (2023x2), Estuaries and Coasts (2024, 2021, 2020x3), I. J. Env. Res. and Public Health (2023), JGR: Oceans (2024x2), JGR: Earth Surface Processes (2024x2), Water Resources Research (2023, 2022, 2021x2)

COURSES INSTRUCTED (11 university sessions, 15 outdoor courses, 11 invited lectures)

University Courses Taught:

2024 (current)	Oceans and Global Change (UAF: OCN 481/681) 1 session: IoR
2024	Subarctic Oceanography Field Course (UAF: OCN 425/625) 1 session: IoR
2022	Coastal Processes (UofSC: MSCI/GEOL 215) 1 session: IoR
2018-2019	Ocean Science Lab (USA: MAS 134L) 4 sessions: TA
2009	Geomorphology (TU: ENS 361) 1 session: TA
2009	General Chemistry I Lab (TU: CHE 201) 3 sessions: TA

Outdoor Education Courses Taught:

2013	Slot canyon geology (canyoneering; Expedition Therapy): 1 week
2013	Ponderosa Pine Forest Ecology (backpacking; Expedition Therapy): 1 week
2013	Wilderness First Aid (camping; Expedition Therapy): 1 week
2013	Wilderness Survival Skills (backpacking; Expedition Therapy): 1 week
2013	Novice Aviation and RC Development (various; Expedition Therapy): 1 week
2012	Spiritual Renewal on Coastal Lake MI (backpacking; CBC): 3 days
2011	Spiritual Renewal on Manitou Island (backpacking; CBC): 1 week
2011	Spiritual Renewal in Northern Hardwoods (various; CBC): 3 days
2009	Natural History of SW&SE US National Parks (various; Intrepid Travel): 3 weeks
2009	Geology of the Southwestern United States (various; Intrepid Travel): 3 weeks
2009	Coastal Process of California (various; Intrepid Travel): 1 week x2
2005/2007	Alaskan Coastal Processes (hike; Kenai Fjords Tours): 2 hours x100
2005/2007	Fox Island Natural History, AK (Kenai Fjords Tours): 1 hour x100
2005/2007	Plankton Community of Resurrection Bay, AK (Kenai Fjords Tours): 2 hours x10
2005/2007	Coastal Wildlife of Alaska (kayak; Kenai Fjords Tours/SCSC): 4 hours x10

University Invited Guest Lecturer:

2024, 2023	Physical Oceanography (UAF)
2023, 2022	The Columbia River as a System (PSU: CE 581)
2022	Sediment Transport and River Mechanics (UofSC: ECIV 767)
2020	Physical Oceanography (USA: MAS 601)
2019	Ocean Science (USA: MAS 134)
2019, 2017	Marine Sciences II (USA: MAS 332)
2018	Coastal Morphology & Processes (UWF: GEO 5225)
2017	Marine Sciences I (USA: MAS 331)
2009	Hydrogeology (TU: ENS 362)
2009	Geomorphology (TU: ENS 361)

Steven L. Dykstra

MENTORING ACTIVITIES

Graduate Student Committee Chair (Advisor):

- 2024-present Nawal Midraj (UAF- PhD in Oceanography: Coastal ocean-ice processes)
- 2024-present Mary Pontbriand (UAF- PhD in Oceanography: VLM impacts on tides)
- 2024-present Eli Gomez (UAF- MS in Oceanography: Tide-river controls on estuary processes)
- 2023-present Evan Joyce (UAF- MS in Geo. Eng.: Beach and estuary storm resiliency)-co-chair

Graduate Student Committee Member:

- 2025-present Bradley van Hooff (TU Delft- MS in Math: Tide-ice modeling in estuaries)
- 2025-present Derk Lyford (UAF- PhD in Earth Sys. Sci.: Sediment dynamics in estuary ice)
- 2025-present Lydia Andriesen (UAF- MS in Mech. Eng.: Subice river flow)
- 2024-present Jackie Beight (UAF- PhD in Oceanography: Ocean basin exchange flows)
- 2024-present Yannik Muche (Leibniz Institute for Baltic Sea Research- PhD: Arctic estuary circulation)
- 2024-present Dev Rao (Univ. of South Alabama- PhD: Marine heatwaves)
- 2023-present Logan Borger (UAF- MS Earth Sys. Sci.: Remote sensing river discharge)
- 2023-present Nicole Webster (UAF- PhD in Oceanography: Marine acoustics)
- 2023-2024 Isabella Moore (UofSC- MS in Marine Sci.: River plumes)

Other Academic Mentoring:

- 2023-2024 *Senior Mechanical Engineering Project*, Taylor Underwood, Zach Zeigler, Neil Bucaneg (UAF): Capstone/URSA Mentor
- 2022-2023 *Grad. Res. Ast.*, Mahsa Ahmadpoor (UofSC- Civil Eng.)
- 2022-2023 *Grad. Res. Ast.*, William Logan (UofSC- Civil Eng.)
- 2022-2023 *Grad. Res. Ast.*, Reyna Sanchez Gomez (Cal Poly- Civil Eng.)
- 2021-2024 *Grad. Res. Ast.*, Lindsay Mullins (Mississippi State- Marine Biology)
- 2021-2022 *Grad. Res. Ast.*, Matt Lobo (Princeton/Portland State- Civil Eng.)
- 2021-2022 *Undergrad/Graduate Estuary Fieldwork Techs*, four students (UofSC)
- 2021-2022 *Undergrad. Res. Ast.*, Olivia Szot (UofSC- Marine Sci.)
- 2021-2022 *Grad. Res. As.*, Nick McGuire (Cal Poly- - Civil Eng.)
- 2016-2017 *Graduate Coastal Fieldwork Techs*, numerous (USA, USM, UA, AU)
- 2008-2009 *Graduate Student Outdoor Educators*, 6 students (Taylor U.)

Non-Academic Mentoring:

- 2002-2021 Student Ministry, ~100 students (middle school through college)
- 2014 Wilderness Therapy, 8 students (Expedition Therapy)

Mentoring Programs Created:

- 2013 International Student Mentoring, part of Internship Program (Horizons Int.)
- 2011-2012 Christian Discipleship, Mentor-Mentee Trainings (Crossroads Bible Church)

SELECTED TRAININGS and CERTIFICATES (19)

- 2023 Arctic Chief Scientist Training Cruise (UNOLS/AICC & NSF)
- 2022 Sediment Transport and River Mechanics (UofSC: G. Parker/E. Viparelli)
- 2020 Grant Writing Workshop: NASA ROSES (NASA, AGU)
- 2020 Introduction to the Community WRF-Hydro Modeling System (NCAR, AGU)
- 2020 Python for Remote Sensing: Analysis, Visualization, and Workflow (AGU)
- 2020 Surface Processes: How to Build Coupled Models (CSDMS, GSA)
- 2020 NASA Data Made Easy: Getting Started with SAR (NASA, GSA)
- 2016 Summer School on Estuarine Physics (Univ. of Bordeaux: A. Valle-Levinson)
- 2016 Motorboat Operator Certification Course (Scientific Boating Safety Association)

Steven L. Dykstra

2015	Environmental Fluids Dynamics Code Explorer Training (Dynamic Sol. Intl.)
2015	CPR and First Aid Instructor (ProTrainings)
2013	Wilderness First Responder (Wilderness Medicine Institute)
2012	Engaging Middle Eastern People Cultural Training (Horizons International)
2012	Advanced Personal Protection & Captivity Survival Course (Ft. Sherman)
2012	Pre Field Training (Pioneers International)
2011	Cultural Intelligence (Life International)
2010	Fundraiser Training (Pioneers International)
2009	Commercial Drivers License (Class B)
2008	Hoosier Riverwatch Training (Indiana Dept. of Env. Management)

RESEARCH FIELD CAMPAIGNS (XX)

2025 Jun	<i>Co-PI</i> , ISOPS2- Utqiagvik, AK: Under-ice circulation observations with hydrographic survey and moorings
2025 Jan	<i>PI</i> , Kuskokwim River Estuary, AK: through ice mooring deployments (CTD, water levels/tilt current meters), hydrographic survey, ice thickness
2024 Nov	<i>Co-PI</i> , ISOPS2- Utqiagvik, AK: freeze-up observations completed with ice sampling/coring, hydrographic survey, time-laps cameras
2024 Sep	<i>Co-PI</i> , ISOPS2- Utqiagvik, AK: mooring deployments (ADCP, CTD, water levels/tilt current meters), hydrographic survey, sediment sampling
2024 Jun	<i>Co-PI</i> , Snake River Estuary, Nome, AK: mooring deployments (CTD, water levels/tilt current meters), hydrographic survey, sediment sampling
2024 May-Jun	<i>PI</i> , Kuskokwim River Estuary, AK: mooring deployments (CTD, water levels/tilt current meters), hydrographic survey, sediment sampling
2024 Apr	<i>Co-PI</i> , ISOPS2- Utqiagvik, AK: mooring deployments through ice (water levels/tilt current meters), hydrographic survey, landfast and beach ice surveys
2023 Oct	<i>Contributing Scientist</i> , NSF NAA- Kongiganak/Mekoryuk, AK: permafrost observations, water level gauges installed, hydrographic survey
2023 June	<i>Acting Chief Scientist/Lead of small boats ops.</i> , UNOLS/AICC Arctic Research Cruise (SKQ202309T): hydrographic surveys, coring, glider deployment
2021 May-Nov	<i>Lead</i> , Tidal Propagation in Ashely, Cooper, and Wando Rivers: pressure, temp
2017 Aug-Sep	<i>Lead</i> , Hydrodynamics of Stratified Flow over an Ebb Tidal Delta: hydro. surveys of circulation and sediments, paired with moorings
2017 Apr	<i>Captain/Technician</i> , Submesoscale Processes and Lagrangian Analysis on the Shelf (SPLASH), Consortia for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE): 24-hour tidal inlet surveys
2017 Mar	<i>Co-Lead/Captain</i> , Mobile Bay Submarine Groundwater Discharge and Circulation: continuous resistivity profiling, Rn/Ra, hydro. survey, drifters
2016 Jul	<i>Co-Lead</i> of small boat ops., CONCORDE Summer Campaign: hydrographic/sediment surveys and drifters
2016 Jun	<i>Captain/Technician</i> , Gulf of Mexico Submarine Groundwater Discharge: continuous resistivity profiling, Rn/Ra
2016 Mar-May	<i>Co-Lead</i> of small boat ops., CONCORDE Spring Campaign: hydrographic/sediment surveys and drifters
2015 Oct-Nov	<i>Technician</i> , CONCORDE Fall Campaign: hydrographic/sediment surveys and drifters

Steven L. Dykstra

2015 Jun-Jul	<i>Technician</i> , Water Quality of Bangs Lake, Grand Bay NERR: drifters, moorings, hydro. surveys
2010 May	<i>Technician</i> , Hanoi Municipal Water Arsenic Poisoning: water sampling
2010 Apr	<i>Technician</i> , Nam Ngouang Hydroelectric Development: hydro. surveys
2008 Mar-Apr	Co-PI, Mississinewa Watershed Storm Runoff Contamination, water sampling and site characterization of fluvial morphology

PROFESSIONAL AFFILIATIONS

2023-present	Institute of Marine Science, University of Alaska Fairbanks (member)
2023-present	Sea Ice Group, University of Alaska Fairbanks (associated faculty)
2023-present	Institute of Arctic and Alpine Research, University of Colorado Boulder (affiliate)
2015-present	American Geophysical Union (member)
2016-2022	The Oceanography Society (member)
2019-2021	Coastal & Estuarine Research Federation (member)
2009-2023	Geological Society of America (member)

SOFTWARE / MODELS

- Matlab (advanced)	- ArcGIS (intermediate)
- AutoCAD (intermediate)	- Environmental Fluid Dynamics Code (advanced)
- HEC-RAS (intermediate)	- Microsoft Office (advanced)
- JavaScript (intermediate)	- Google Earth Engine (intermediate)
- Python, R, C++ (basic to inter.)	- Python Modeling Tool (intermediate)
- ROMS (basic)	- QGIS (intermediate)

ARTICLES ABOUT RESEARCH

2024	The Hill: Risky coastal development expanding in face of climate change https://thehill.com/newsletters/sustainability/4886751-risky-coastal-development-expanding-in-face-of-climate-change/
2024	University of Alaska Fairbanks: <i>Dams built to prevent coastal flooding can worsen it</i> https://www.uaf.edu/news/dams-built-to-prevent-coastal-flooding-can-worsen-it.php https://www.eurekalert.org/news-releases/1057879
2021	University of South Carolina: <i>Rivers play key role in destructive coastal flooding</i> https://www.sc.edu/study/colleges_schools/artsandsciences/about/news/2021/dykstra_rivers_play.php
2020	American Geophysical Union: <i>Where Rivers End</i> https://agu-h3s.org/2020/11/09/research-tidbit-where-rivers-end/
2020	Dauphin Island Sea Lab: <i>Delta helps to decrease the impact of river flooding</i> http://disl.edu/about/news/study-find-delta-decreases-impact-of-river-flooding
2017	Gulf of Mexico Research Initiative: <i>Global Applications for Local Circulation</i> https://gulfresearchinitiative.org/grad-student-dykstra-sees-global-applications-local-ocean-circulation-maps/

PUBLICATIONS: DATA and TOOLS (19 Data Publications, 2 Tools)

- Lobo, M.*;** Jay, D. A.; Innocenti, S.; Talke, S. A.; **Dykstra, S. L.;** Matte, P. (2024). CWT_Multi: wavelet tidal analysis with separation of constituents. Github.
- Dykstra, S. L.,** H. Baranes, S. A. Talke, D. A. Jay (2023). A Quality Assessment of Nonstationary Water Level Data in the Transition between Coastal and Hydrological Regimes, HydroShare,
<http://www.hydroshare.org/resource/47505deb95cc4df08a9de4d1e1641f71>
- Dykstra, S. L. (2023).** Vertical Land Motion and Elevation Digital Elevation Model for the Sacramento-San Joaquin Delta,
HydroShare, <http://www.hydroshare.org/resource/5e75ef4f9681446a9ae02c4154fdd823>

Steven L. Dykstra

- Dykstra, S. L.,** R. Torres, E. Viparelli, S. A. Talke, A. E. Yankovsky (2022). Historical Water Level Data of the Greater Charleston Region (1975-1992), Previously Unpublished by NOAA, HydroShare, <http://www.hydroshare.org/resource/6426732916294b03950d5cc9ca15b252>
- Dykstra, S. L.,** R. Torres, E. Viparelli, S. Talke, A. E. Yankovsky (2022). Water Level and Temperature Data of the Greater Charleston Region (Ashley, Cooper, and Wando Rivers), Field Collected 2021 May-November, HydroShare, <http://www.hydroshare.org/resource/87a32300574b4489b1716d5ed058c085>
- Szot, O.; **Dykstra, S. L. (2022).** Longitudinal DEM Tool for the Extraction of River and Estuary Cross Sections. Published by GitHub, inc. https://github.com/onszot/longitudinal_DEM
- Dykstra, S. L.;** Dzwonkowski, B. (2020). The Thalweg and Sub-Tidal Flow of a Backwater-Estuarine Environment, Alabama; Gulf of Mexico Research Initiative Information & Data Cooperative Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/6tdw4xsv>
- Dykstra, S. L.;** Dzwonkowski, B.; O'Brien, S. (2018). Hydrographic CTD data of Main Pass and the Mobile Bay Plume (Spring 2017); Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N74X5644>
- Dykstra, S. L.;** Dzwonkowski, B.; O'Brien, S. (2018). Drifter Releases in the Ebb Tidal Plume of Main Pass, Mobile Bay, AL (Fall 2016); Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7FF3QQ5>
- Dykstra, S. L.;** Dzwonkowski, B.; Lockridge, G.; O'Brien, S. (2018). Drifter Releases in the Ebb Tidal Plume of Main Pass, Mobile Bay, AL, 2015-2016; Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7TX3CFP>
- Dzwonkowski, B.; **Dykstra, S. L.;** Lockridge, G. (2018). CTD data at Main Pass, Mobile Bay, April 19, 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N75X279Z>
- Dzwonkowski, B.; Lockridge, G.; **Dykstra, S. L. (2018).** CTD data on Alabama shelf, April 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7SQ8XS9>
- Dzwonkowski, B.; Lockridge, G.; **Dykstra, S. L. (2018).** CTD data at Main Pass, Mobile Bay, April 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7NZ862C>
- Dzwonkowski, B.; **Dykstra, S. L.;** O'Brien, S.; Lockridge, G. (2018). CTD profiles collected during Fall survey (Sep 20 - Oct 29 2015) Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7ZP446V>
- Dzwonkowski, B.; Lockridge, G.; **Dykstra, S. L. (2018).** CTD profile data, Mobile Bay main pass, April 9, 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7154FF5>
- Dzwonkowski, B.; Lockridge, G.; **Dykstra, S. L. (2018).** CTD profiles collected during Spring survey, April 5 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N79C6VTC>
- Dzwonkowski, B.; Lockridge, G.; **Dykstra, S. L. (2018).** Drifter data at Main Pass, Mobile Bay Release 1 (2015/09/04) Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7ZW1HW9>

Steven L. Dykstra

- Dzwonkowski, B.; **Dykstra, S. L.**; O'Brien, S.; Lockridge, G. (2018). CTD profiles, Main Pass, Mobile Bay, Alabama, April 3, 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7D50KCT>
- Wiggert, J. D.; O'Brien, S. J.; **Dykstra, S. L.**; Dzwonkowski, B.; Wallace, D. J.; Lockridge, G. (2018). Total Suspended Solids in situ data, northern Gulf of Mexico, Mobile Bay river plume, March-April 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N74Q7S2Z>
- Wiggert, J. D.; O'Brien, S. J.; **Dykstra, S. L.**; Dzwonkowski, B.; Wallace, D. J.; Lockridge, G. (2018). LISST-100X (type B) grain size distribution, northern Gulf of Mexico, Mobile Bay river plume, October 2015 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7J1016T>
- Wiggert, J. D.; O'Brien, S. J.; **Dykstra, S. L.**; Dzwonkowski, B.; Wallace, D. J.; Lockridge, G. (2018). LISST-100X (type B) grain size distribution, sediment distribution, Mobile Bay river plume, March-April 2016 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N7D798F3>
- Wiggert, J. D.; O'Brien, S. J.; **Dykstra, S. L.**; Dzwonkowski, B.; Wallace, D. J.; Lockridge, G. (2018). Total Suspended Solids in situ data, northern Gulf of Mexico, Mobile Bay river plume, October 2015 Consortium for Oil Spill Exposure Pathways in Coastal River-Dominated Ecosystems (CONCORDE). <https://doi.org/10.7266/N78G8HRT>

RESEARCH PRESENTATIONS: PRESENTOR (39, 11 invited) *student

- Dykstra, S. L.**, (2025, Feb). Understanding tide and storm surge impacts along the Yukon and Kuskokwim Rivers. National Weather Service Alaska Region Coastal Flood Workshop. **Invited seminar** in Anchorage, AK.
- Dykstra, S. L.**, Schuttelaars, H., ***Gomez, E.**, ***Pontbraind, M.** (2025, Jan). Ice impacts on the resonance, convergence, and friction of tidal transport (Tide-Ice ReCon). Alaska Marine Science Symposium. Poster presented in Anchorage, AK.
- Dykstra, S. L.**; **Gomez, E.***, Talke, S. A., Jay, D., Lobo, M., Innocenti, S., Matte, P. (2024, Dec). Storm surge and tidal hazards by basin shape, the case of Extratropical Typhoon Merbok in Western Alaska. American Geophysical Union Fall Conference. Presented in Washington, DC.
- Dykstra, S. L.**; **Gomez, E.***, **Joyce, E.***, Trochim, E. (2024, Oct). Supporting Alaskan Coastal Communities at the Ocean-River Transition of Hydrodynamics, Bed Types, and High Resolution to No Bathymetric Data. 23rd JALBTCX Airborne Coastal Mapping and Charting Technical Workshop. Oral presentation in Anchorage, AK.
- Dykstra, S. L.**; Talke, S. A., Jay, D., Lobo, M., Innocenti, S., Matte, P. (2024, Sep). Storm surge amplification by basin shape, the case of Extratropical Typhoon Merbok in Western Alaska. Oral presentation at the 21st Physics of Estuaries and Coastal Seas Conference in Bordeaux, France.
- Dykstra, S. L.**; Viparelli, E.; Torres, R.; Yankovsky, A.; Talke, S. A. (2024, Mar). Modeling and Theory of Storm Surge and Tidal Reflection in Convergent Estuaries with Dams. NOAA Coastal Marine Modeling Branch (CMMB) Science Seminar. Virtual **seminar** presentation.
- Dykstra, S. L.**; Yankovsky, A.; Riche, G.; Marmorino, G. (2024, Feb). Forcing conditions of cross-shelf plumes on a wide continental shelf, Winyah Bay, South Atlantic Bight. Ocean Sciences Meeting. Oral presentation in New Orleans, LA.
- Dykstra, S. L.** (2024, Jan). Western Alaska Storm Surge Amplified by Basin Shape. Alaska Marine Science Symposium. Oral presentation in Anchorage, AK.

Steven L. Dykstra

- Dykstra, S. L. (2023, Nov).** Interpreting Tidal and Storm Surge Hydrodynamics from Topobathy Data. 22nd JALBTCX Airborne Coastal Mapping and Charting Technical Workshop. Oral presentation in Kiln, MS.
- Dykstra, S. L. (2023, Sep).** Dam, Where did That Come From?: Differentiating Natural and Direct Human Impacts in Coastal Cities, a case study of Charleston Harbor. Environmental Health Sciences Seminar, University of South Carolina. **Invited seminar** presentation.
- Dykstra, S. L., Viparelli, E.; Szot, O.; Talke, S. A.; Yankovsky, A. E.; Torres, R. (2022, Dec).** Water Level Trend Variability from Tidal Oscillations, Charleston Harbor, USA. American Geophysical Union Fall Conference. Poster presentation in Chicago, IL.
- Dykstra, S. L. (2022, Oct).** Differentiating climate change, natural variability, and direct human impacts in coastal environments. College of Fisheries and Ocean Science Seminar, University of Alaska Fairbanks. **Invited seminar** presentation in Fairbanks, AK.
- Dykstra, S. L., Baranes, H.; Talke, S. A.; Jay, D. (2022, Oct).** The many factors influencing sea level trends and variability in deltas. Physics of Estuaries and Coasts Conference. Oral presentation in Perth, Australia.
- Dykstra, S. L. (2022, Mar).** River, tide, and storm surge interactions in natural and engineered channels, the Tombigbee-Alabama Delta and Charleston Harbor System. School of Earth, Ocean, and Environment Seminar, University of South Carolina. **Invited seminar** oral presentation in Columbia, SC.
- Dykstra, S. L. (2022, Feb).** Longitudinal shifts of tide-river dynamics. Delta Seminar at the University of Texas at Austin. **Invited seminar** presentation.
- Dykstra, S. L., Dzwonkowski, B. (2021, Dec).** The role of intensifying precipitation on coastal river flooding and compound river-storm surge events, northeast Gulf of Mexico. American Geophysical Union Fall Conference. **Invited** oral presentation in New Orleans, LA.
- Dykstra, S. L., Torres, R.; Yankovsky, A. E.; Szot, O., Viparelli, E. (2021, Dec).** The role of dams on tides and storm surge, Charleston Harbor. American Geophysical Union Fall Conference. Poster presentation in New Orleans, LA.
- Dykstra, S. L. (2021, Mar).** The role of river discharge on flooding and tides in the fluvial-marine transition. University of South Alabama PhD Defense. Oral presentation. youtube.com/watch?v=jegetUWPtSA
- Dykstra, S. L., Dzwonkowski, B. (2020, Dec).** Linking global precipitation intensification to coastal river and compound flooding. American Geophysical Union Fall Conference. Oral presentation.
- Dykstra, S. L. (2020, Nov).** River flow in coastal environments. Woods Hole Oceanographic Institution Applied Ocean Physics & Engineering Seminar. **Invited seminar** presentation.
- Dykstra, S. L. (2020, Nov).** Determining the timing and magnitude of river discharge events for shellfish closures. Dauphin Island Sea Lab Seminar. Oral presentation.
- Dykstra, S. L., Dzwonkowski, B. (2020, Sep).** River flood wave dynamics in a deltaic-estuarine environment. September EuroCoast Meeting. **Invited** oral presentation hosted online by Utrecht University, Netherlands.
- Dykstra, S. L., Dzwonkowski, B. (2019, Dec).** The increasing frequency of coastal flooding, northeast Gulf of Mexico Watersheds. American Geophysical Union Fall Conference. Poster presentation in San Francisco, CA.
- Dykstra, S. L., Dzwonkowski, B. (2019, Nov).** Predictable to flashy: drainage efficiency in northeast Gulf of Mexico Watersheds. Coastal & Estuarine Research Federation Conference. Oral presentation in Mobile, AL.

Steven L. Dykstra

- Dykstra, S. L. (2019, Oct).** A “fresh” approach for aquaculture closures. Dauphin Island Sea Lab Seminar. Oral presentation in Dauphin Island, AL.
- Dykstra, S. L., Dzwonkowski, B., Parra, S. M., Warner, S., Book, J. W., Moum, J., Greer, A. T., Briseño-Avena, C. (2019, Feb).** Shelf convergence and transport near an ebb tidal delta in the Mississippi Bight, northern Gulf of Mexico. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Poster presented in New Orleans, LA.
- Dykstra, S. L., Dzwonkowski, B. (2018, Oct).** Impacts of an inland basin on an estuarine system in Coastal Alabama. Physics of Estuaries and Coastal Seas Meeting. Poster presented in Galveston, TX.
- Dykstra, S. L., Dzwonkowski, B. (2018, Sep).** The role of a fluvial flood wave in the coastal region of Alabama. Alabama Water Resources Conference. Poster presented in Orange Beach, AL.
- Dykstra, S. L., Dzwonkowski, B. (2018, Mar).** A Shifting Tidal Flood Limit in the Coastal Environment. University of South Alabama Annual Graduate Research Forum. Poster presented in Mobile, AL.
- Dykstra, S. L., Dzwonkowski, B. (2018, Mar).** Freshwater Discharge in Coastal Alabama. Gulf of Mexico Graduate Student Symposium. Talk presented in Dauphin Island, AL.
- Dykstra, S. L., Dzwonkowski, B. (2018, Feb).** The Role of Freshwater Discharge on Coastal Transport. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Poster presented in New Orleans, LA.
- Dykstra, S. L., Dzwonkowski, B. (2017, Dec).** Spatial Shifts in Tidal-Fluvial Environments. American Geophysical Union Conference. Poster presented in New Orleans, LA.
- Dykstra, S. L., Dzwonkowski, B., O’Brien, S. J., Lockridge, G. (2017, Feb).** Seasonal Variability in Ebb Tidal Plumes. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Talk presented in New Orleans, LA.
- Dykstra, S. L., Dzwonkowski, B., Lockridge, G., O’Brien, S. J., Wiggert, J. (2016, Mar).** Drifter Observations of an Ebb Tidal Plume Dispersion and Circulation in a Critical Estuary-Shelf Environment, Main Pass, Mobile, AL. Graduate Research Forum at the University of South Alabama. Poster presented in Mobile, AL.
- Dykstra, S. L., Dzwonkowski, B., Lockridge, G., O’Brien, S. J., Wiggert, J. (2016, Mar).** Lagrangian Observations of a Tidal Plume through an Ebb Tidal Delta. Gulf of Mexico Graduate Student Symposium. Talk and poster presented at the Gulf Coast Research Lab (USM) in Ocean Springs, MS.
- Dykstra, S. L., Dzwonkowski, B., Lockridge, G., O’Brien, S. J., Wiggert, J. (2016, Feb).** Lagrangian Observations of an Ebb Tidal Plume under Low Discharge Conditions, Main Pass, Mobile Bay, AL. Ocean Sciences Conference (AGU, ASLO, TOS). Talk presented in New Orleans, LA.
- Dykstra, S. L., Dzwonkowski, B., Lockridge, G., O’Brien, S. J., Wiggert, J. (2016, Feb).** Drifter Observations of an Ebb Tidal Plume Dispersion and Circulation in a Critical Estuary-Shelf Environment, Main Pass, Mobile, AL. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Poster presented in Tampa, FL.
- Dykstra, S. L., Dzwonkowski, B., Lockridge, G. (2015, Nov).** Hydrodynamic Transport in a Shallow, Micro-Tidal Salt Marsh System, Bangs Lake, MS. Geological Society of America Annual Conference. Poster presented in Baltimore, MD.
- Dykstra, S. L. (2010, Aug).** Hydrological Internship in Southeast Asia. **Invited** talk and poster presented at Randall Environmental Science Center, Taylor University, Upland, IN.

Steven L. Dykstra

RESEARCH PRESENTATIONS: COLLABORATOR (30+) *students

- *Gomez, E. A., Dykstra, S. L. (2025, Jan).** Kuskokwim tide-river interactions and their influence on the estuarine geomorphology, preliminary results. Alaska Marine Science Symposium. Presented in Anchorage, AK.
- *Pontbraind, M., Schuttelaars, H., Talke, S. A., Dykstra, S. L. (2025, Jan).** Tidal changes and variability in Cook Inlet. Alaska Marine Science Symposium. Presented in Anchorage, AK.
- *O’Keefe, N., Dykstra, S. L. (2025, Jan).** Oceanic Stratification and Coastal Dynamics in Utqiagvik, Alaska: Implications for Ice Berm Formation & Stability. Alaska Marine Science Symposium. Presented in Anchorage, AK.
- Schuttelaars, H., **Dykstra, S. L. (2025, Jan).** Ice impacts on the tidal and subtidal water motion: a 2DV modeling study. Alaska Marine Science Symposium. Presented in Anchorage, AK.
- *Joyce, E., Dykstra, S. L., Trochim, E. (2024, Dec).** Comparison of Two Beach Vulnerability Assessment Models at Nome, Alaska. American Geophysical Union Fall Conference. Presented in Washington, DC.
- *Fink, M. S., H. Baranes, Dykstra, S. L., S. A. Talke, T. J. J. Hanebuth (2024, Dec).** A Tale of Two Tide Gauges: Evaluating the Mechanisms Which Contribute to Minor Flood Events Along the Fluvial-Estuarine Gradient in the Lower Winyah Estuary. American Geophysical Union Fall Conference. Presented in Washington, DC.
- Mahoney, A. R., Jones, J., George, S., Johnson, M. A., **Dykstra, S. L. (2024, Dec).** Coastal Sea ice radar: An All-Season Tool for Science and Safety. American Geophysical Union Fall Conference. Presented in Washington, DC.
- Trochim, E., **Dykstra, S. L., Roddewig, M., Brown, E., Hutchinson, M. (2024, Dec).** Bridging the Divide: Integrating Topobathymetric Lidar to Understand Arctic Coastal Transitions. American Geophysical Union Fall Conference. Presented in Washington, DC.
- Viparelli, E., Sanders, S., Czapiga, M., **Dykstra, S. L., Fernández, R. (2024, Dec).** Morphodynamic modeling of downstream lightening, the streamwise decrease in sediment density. American Geophysical Union Fall Conference. Presented in Washington, DC.
- Hutchinson, M., Trochim, E., Helder, N., Roddewig, M., **Dykstra, S. L., (2024, Dec).** Leveraging Google Earth Engine for Coastal Resilience: A Cloud-Based System for Data Management, Scientific Collaboration, and Community Engagement in Alaska. American Geophysical Union Fall Conference. Presented in Washington, DC.
- *Joyce, E., Dykstra, S. L., Trochim, E. (2024, Oct).** Comparison of Two Beach Vulnerability Assessment Models at Nome, Alaska. 23rd JALBTCX Airborne Coastal Mapping and Charting Technical Workshop. Oral presentation in Anchorage, AK.
- Trochim, E., **Dykstra, S. L., Roddewig, M., Brown, E., Hutchinson, M. (2024, Oct).** Update on the University of Alaska Fairbanks Coastal Mapping Program. 23rd JALBTCX Airborne Coastal Mapping and Charting Technical Workshop. Oral presentation in Anchorage, AK.
- Talke, S. A., **Dykstra, S. L., Orton, P., Jay, D. A. (2024, Sep).** Partial Reflections in Tidal Estuaries. Oral presentation at the 21st Physics of Estuaries and Coastal Seas Conference in Bordeaux, France.
- Orton, P., Talke, S. A., **Dykstra, S. L. (2024, Sep).** Strategies and dynamics facilitating coastal flood mitigation without reflection. Oral presentation at the 21st Physics of Estuaries and Coastal Seas Conference in Bordeaux, France.
- Jay, D. A., ***Lobo, M., Talke, S. A., Dykstra, S. L., Innocenti, S., Matte, P. (2024, Sep).** Hydropower peaking in the Lower Columbia River Estuary: capturing transient tidal

Steven L. Dykstra

- processes using “super-resolution”. Oral presentation at the 21st Physics of Estuaries and Coastal Seas Conference in Bordeaux, France.
- Viparelli, E., M. Czapiga, H. Xu, **S. L. Dykstra**, S. L., S. van Der Steeg, R. Torres (2024, Sep). Bankfull geometry of self-formed, single thread sand bed rivers with a leaky floodplain, preliminary results. River Flow 2024. **Keynote presentation** in Liverpool, United Kingdom.
- ***Fink, M. S.**, H. Baranes, **Dykstra, S. L.**, S. A. Talke, T. J. J. Hanebuth (2024, May). Hydrographic Mechanisms Controlling Daily High-Water Levels along the Fluvial-Estuarine Gradient of the Lower Winyah Watershed, northern South Carolina. South Carolina Sea Grant Consortium Research Symposium. Presentation in Conway, SC.
- Orton, P. M., S. A. Talke, **Dykstra, S. L.** (2024, Feb). How do estuary nature-based solutions (NbS) reduce flooding without inducing it elsewhere. Ocean Sciences Meeting. Presentation in New Orleans, LA.
- Baranes, H., S. A. Talke, **S. L. Dykstra**, D. Jay (2023, Dec). Drivers of daily water levels and sea level rise in the Sacramento-San Joaquin Delta, San Francisco Bay. American Geophysical Union Fall Conference. Presentation in San Francisco, CA.
- Talke, S. A., H. Baranes, S. Lee, D. Jay, **S. L. Dykstra** (2023, Dec). Evolution of tides, water levels, and flood risk in a delta with variable sea-level rise and anthropogenic influences. American Geophysical Union Fall Conference. Presentation in San Francisco, CA.
- Orton, P., S. A. Talke, T. Wahl, **S. L. Dykstra**, J. Booth (2023, Nov). Anthro-geomorphic Drivers of Changing Estuarine Flood Risk. Coasts and Estuaries Research Federation Conference. Presentation in Portland, Oregon.
- Jay, D., M. Lobo, P. Matte, **S. L. Dykstra**, S. Innocenti, S. A. Talke (2023, Oct). Varieties of non-stationary tides in tidal rivers. 5th World’s Largest Rivers Conference. Presentation in Vienna, Austria.
- Yankovsky, A. E., **S. L. Dykstra**, G. Ricche (2023, Apr). Forcing of cross-shelf plumes on a wide continental shelf. European Geophysical Union Conference. Presentation in Vienna, Austria.
- Viparelli, E., W. Logan, M. Ahmadpoor, R. Torres, **S. L. Dykstra** (2023, Apr). Gravel-sand transition in the mixed bedrock-alluvial Congaree River, SC. Preliminary results on gravel mobility. European Geophysical Union Conference. Presentation in Vienna, Austria.
- Talke, S. A., N. McGuire, **S. L. Dykstra**, H. Baranes, S. Lee (2023, Apr). Is flood risk in the Sacramento-San Joaquin Delta increasing?. California State University-Water Conference. Presentation in Monterey, CA.
- Hardy, D., **Dykstra, S. L.**, (2023, Jan). Storm-tide ditch flooding effects on the Gullah/Geechee of Sapelo Island. Georgia Coastal Ecosystems LTER Annual Meeting.
- Czapiga, M. J., **Dykstra, S. L.**, Parker, G., Viparelli, E. (2022, Dec). Basin Controls on the Channel Morphodynamics of Juvenile River Deltas. American Geophysical Union Fall Conference. Poster presentation in Chicago, IL.
- Deming, A. C.; D. Moore, D., T. Morgan, M. Russell, G. Vasquez, L. Albrightain, B. Baldrice, B. Mase, E. Fougères, K. Colegrove, A. Costidis, B. Dzwonkowski, **S. L. Dykstra**, T. Rowles, L. Garrison, J. Litz, D. Fauquier (2021, Aug). Exposure to low salinity waters identified as cause of the 2019 Northern Gulf of Mexico Bottlenose Dolphin Unusual Mortality Event. Wildlife Disease Association Conference. Oral presentation.
- Dzwonkowski, B.; Coogan, J.; Lehter, J.; Lockridge, G.; Hagemeyer, A.; **Dykstra, S. L.** (2020, Dec). Assessing potential environmental impacts of the unprecedented 2019 opening of the

Steven L. Dykstra

- Bonnet Carré Spillway on Mississippi Bight. Bays and Bayous Symposium. Oral presentation.
- Coogan, J., Dzwonkowski, B., Lehrter, J., Du, J., **Dykstra, S. L.** (2020, Feb). Hydrographic variability in Mobile Bay associated with coastal upwelling and downwelling. Ocean Sciences Conference. Poster presentation in San Diego, CA.
- Elliott, E. A., Rodriguez, A. B., McKee, B. A., **Dykstra, S. L.** (2019, Nov). Stirring things up: estuarine sediment dynamics during non-equilibrium conditions. Coastal & Estuarine Research Federation Conference. Oral presentation in Mobile, AL.
- Dzwonkowski, B., Coogan, J., Lehter, J., Wilson, J., Lockridge, G., **Dykstra, S. L.**, Hagemeyer, A., Robertson, A., Miller, M., Krause, J., DeBois, J., Pickering, R. (2019, Oct). Bonnet Carre Spillway 2019 event: Environmental Impacts in Mississippi Bight? Gulf States Fisheries Commission: 70th Annual Meeting. Oral presentation in Biloxi, MS.
- O'Brien, S. J., **Dykstra, S. L.**, Parra, S. M., Dzwonkowski, B., Book, J. W., Pan, C., Dinniman, M. S., Fitzpatrick, P. J., Lau, Y. H., Cambazoglu, K., Hofmann, E., Wiggert, J. W. (2019, Mar). Increased Suspended Sediment Concentration in Mississippi Bight in Spring 2016 evaluated using Acoustic Doppler Current Profiler Data and a Synthesis Numerical Model. US Hydro 2019 Conference. Oral presentation in Biloxi, MS.
- Dzwonkowski B., Coogan, J., Fournier, S., Park, K., Milroy, S., Shiller, A., Greer, A., **Dykstra, S. L.**, Soto, I., Sanial, V., Lehter, J., Reager, J. T. (2019, Feb). Shelf bottom dissolved oxygen conditions and their impacts on adjacent estuarine systems in a region of fresh water influence, Mississippi Bight. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Poster presentation in New Orleans, LA.
- Book, J. W., Parra, S. M., **Dykstra, S. L.**, Dzwonkowski, B., Howden, S. D., Warner, S. J., Moum, J. N., Pan, C., Cambazoglu, M. K., Fitzpatrick, P. J. (2019, Feb). A case study of inertial oscillations and dynamics offshore of Mobile Bay. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Oral presentation in New Orleans, LA.
- Parra, S. M., Book, J. W., Moum, J. N., Warner, S. J., Dzwonkowski, B., **Dykstra, S. L.**, Soto, I. M., Howden, S. (2019, Feb). Wind-driven mixing of the Mobile Bay plume in the northern Gulf of Mexico shelf. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Poster presented in New Orleans, LA.
- O'Brien, S. J., **Dykstra, S. L.**, Parra, S. M., Dzwonkowski, B., Book, J. W., Pan, C., Dinniman, M. S., Fitzpatrick, P. J., Lau, Y. H., Cambazoglu, K., Hofmann, E., Wiggert, J. D. (2019, Feb). Suspended sediment transport in Mississippi Bight during two cold front events in Spring 2016. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Poster presented in New Orleans, LA.
- Greer, A. T.; Boyette, A. D.; Cambazoglu, K.; Cruz, V. J.; **Dykstra, S. L.**; Dzwonkowski, B.; Pan, C.; Chiaverano, L. M.; Briseño-Avena, C.; Cowen, R. K.; Wiggert, J. D. (2019, Feb). Plankton thin layer mechanism of formation and cascading ecological impacts in the northern Gulf of Mexico. Gulf of Mexico Oil Spill and Ecosystem Science Conference. Poster presented in New Orleans, LA.
- Dzwonkowski, B., Coogan, J., Fournier, S., Park, K., Milroy, S., Shiller, A., Greer, A., **Dykstra, S. L.**, Soto, I., Sanial, V., Lehter, J., Reager, J.T. (2019, Jan). Tracking sea surface salinity and oxygen in the Mississippi Bight: Shelf to Estuary Connectivity. GoMRI Synthesis Conference. Oral presented in St. Petersburg, FL.
- Wiggert, J., Pan, C., Dinniman, M., Lau, Y., Fitzpatrick, P., O'Brien, S. J., Bouchard, C., Quas, L., Miles, T., Cambazoglu, M. K., **Dykstra, S. L.**, Dzwonkowski, B., Jacobs, G., Church, I.,

Steven L. Dykstra

- Hofmann, E. (2018, Feb). Controls on Planktonic Dynamics in the Mississippi Bight by Estuarine-Shelf Exchange Processes. Ocean Science Conference. Oral presented in Portland, OR.
- Pan, C., Dinniman, D., Fitzpatrick, P., Lau, Y. H., Cambazoglu, M. K., Parra, S. M., Hofmann, E., Dzwonkowski, B., Warner, S., O'Brien, S. J., **Dykstra, S. L.**, Wiggert, J. (2018, Feb). Simulating the Dynamics and Water Properties of Mississippi Sound and Bight Using the CONCORDE Synthesis Model. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Oral presented in New Orleans, LA.
- Book, J., Parra, S. M., Dzwonkowski, B., **Dykstra, S. L.**, Warner, S., Moum, J. N., Howden, S. D. (2018, Feb). Temporal Varying Spatial Patterns in Mobile Bay Outflow. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Poster presented in New Orleans, LA.
- Wiggert J., Pan C., Dinniman M., Lau Y., Fitzpatrick P., O'Brien S. J., Bouchard C., Quas L., Miles T., Cambazoglu M. K., **Dykstra S.L.**, Dzwonkowski B., Jacobs G., Church I., Hofmann E. (2017, Dec). Impacts of Suspended Sediment and Estuarine – Shelf Exchange Pathways on Shelf Ecosystem Dynamics in the Northern Gulf of Mexico. American Geophysical Union Conference. Poster presented in New Orleans, LA.
- Pan C., Dinniman, M., Fitzpatrick, P., Lau, Y. H., Cambazoglu, M. K., Parra, S. M., Hofmann, E., Dzwonkowski, B., Warner, S., O'Brien, S. J., **Dykstra, S. L.**, Wiggert, J. (2017, Dec). Exploring the Circulation Dynamics of Mississippi Sound and Bight Using the CONCORDE Synthesis Model. American Geophysical Union Conference. Talk presented in New Orleans, LA.
- O'Brien, S. J., **Dykstra, S. L.**, Quas, L., Dzwonkowski, B., Howden, S., Wallace, D. J., Church, I., Schofield, O., Miles, T., Wiggert, J. D. (2017, Feb). Characterizing Spatial and Temporal Changes of the Suspended Particulate Matter in the Mississippi Sound and Mississippi Bight. Gulf of Mexico Oil Spill & Ecosystems Science Conference. Talk presented in New Orleans, LA.
- O'Brien, S. J., Fitzpatrick, P., Dzwonkowski, B., **Dykstra, S. L.**, Wallace, D. J., Church, I., Wiggert, J. (2016, Feb). Multivariate analysis of the influences of oceanic and meteorological processes on suspended particulate matter distributions in Mississippi coastal waters. Ocean Sciences Conference (AGU, ASLO, TOS). Poster presented in New Orleans, LA.
- Guebert, M. D., **Dykstra, S. L.** (2009, Apr). Collaborative Outreach and Civic Engagement through Stream Monitoring and Geospatial Watershed Assessment. Geological Society of America North-Central Section Meeting. Presentation conducted from Northern Illinois University, Rockford, IL.
- Guebert, M. D., **Dykstra, S. L.** (2009, Oct). Local Land and Water: Collaborative Stream Monitoring and Geospatial Watershed Assessment. Geological Society of America Annual Meeting. Presentation conducted from Oregon Convention Center, Portland, OR.

PRESENTATIONS to POLICY HOLDERS and MANAGERS (selected)

- Trochim, E., **Dykstra, S. L.**, Roddewig, M., (2024, Dec). Alaska coastal mapping and hazards. Presentations given to US Senator Murkowski's Office and to US Senator Sullivan's Office in Washington, D.C.
- Dykstra, S. L.**; Danielson, S. (2024, Sep). Active Arctic observations of UAF CFOS and the COASTal Dynamics (Dykstra) Lab. **Invited** oral presentation to the Arctic Regional Alliance Workshop in Fairbanks, AK.

Steven L. Dykstra

Dykstra, S. L. (2024, Aug). Coastal resiliency for the many factors driving coastal hazards. **Invited** oral presentation to the United States of America House Committee on Natural Resources in Seward, AK.

Talke, S. A., H. Baranes, H., **S. L. Dykstra**, D. Jay (2023, Dec). Sea level rise in the Sacramento-San Joaquin Delta. **Invited** presentation to California Senator John Liard, staff, and colleagues.

PRESENTATIONS: OTHER (selected)

Dykstra, S. L., Potter, R. (2025, Jan). Remote sensing in coastal Alaska. NOAA Coastwatch 2025 Workshop. Oral presentation in Fairbanks, AK.

Dykstra, S. L., Schuttelaars, H., *Gomez, E., *Pontbraind, M. (2025, Jan). Ice impacts on the resonance, convergence, and friction of tidal transport (Tide-Ice ReCon). Coastal Marine Institute Annual Research Review. Oral presentation in Anchorage, AK.

WORKSHOPS and CONFERENCE ACTIVITIES (4)

2024 *Assistant Organizer*, 23rd JALBTCX Airborne Coastal Mapping and Charting Workshop. 3-day conference in Anchorage, AK.

2024 *Workshop Organizer/Instructor*, Norton Sound Coastal Flooding and Mapping Community Workshop. 3-day community engagement workshop in Unalakleet, AK.

2024 *Session Co-Chair*, Buoyancy-driven flows in estuaries and continental shelves. Ocean Sciences Meeting. New Orleans, LA.

2024 *Workshop Organizer/Instructor*, Alaska Coastal Climate Resilience Workforce Development. Alaska Marine Science Symposium. Anchorage, AK.

UNIVERSITY SERVICE

2024-current *Member*, UAF Committee on Curriculum Development

2024-current *Member*, UAF Faculty Senate

2023-2024 *Member*, CFOS Committee on Curriculum Development (UAF)

ACKNOWLEDGEMENT in PEER-REVIEW PUBLICATION (6)

Yankovsky, A. E., Fribance, D. B., Cahl, D., & Voulgaris, G. (2022). Offshore Spreading of a Supercritical Plume Under Upwelling Wind Forcing: A Case Study of the Winyah Bay Outflow. *Frontiers in Marine Science*, 8. <https://doi.org/10.3389/fmars.2021.785967>

Coogan, J., B. Dzwonkowski, K. Park, and B. Webb (2020), Observations of Restratification after a Wind Mixing Event in a Shallow Highly Stratified Estuary, *Estuaries and Coasts*, 43(2), 272–285, doi:10.1007/s12237-019-00689-w.

Dinápoli, M. G., C. G. Simionato, and D. Moreira (2020), Nonlinear Interaction Between the Tide and the Storm Surge with the Current due to the River Flow in the R'io de la Plata, *Estuaries and Coasts*, 1–21, doi:10.1007/s12237-020-00844-8.

Many, G., Bourrin, F., Durrieu de Madron, X., Ody, A., Doxaran, D., Cauchy, P. (2018), Glider and satellite monitoring of the variability of the suspended particle distribution and size in the Rhône ROFI, *Progress in Oceanography*, 163, 123–135, doi:10.1016/j.pocean.2017.05.006.

Montiel, D., Lamore, A., Stewart, J., Dimova, N. T. (2018), Is Submarine Groundwater Discharge (SGD) Important for the Historical Fish Kills and Harmful Algal Bloom Events of Mobile Bay? *Estuaries and Coasts*, 42(2), 470–493, doi:10.1007/s12237-018-0485-5.

Steven L. Dykstra

Lockridge, G., Dzwonkowski, B., Nelson, R., Powers, P. (2016), Development of a Low-Cost Arduino-Based Sonde for Coastal Applications, Sensors 2013, Vol. 13, Pages 7872-7883, 16(4), 528, doi:10.3390/s16040528.