

Curriculum Vitae

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I. Research Areas

My research spans several areas in physical oceanography, including estuarine and coastal dynamics, sea level rise, storm surge, and upper ocean processes. I am also actively engaged in interdisciplinary research to address challenging environmental problems such as hypoxia, ocean acidification, harmful algal blooms and coastal resilience.

II. Education

1991 Ph.D, University of Oxford, Geophysical Fluid Dynamics
1983 B.Eng., Hohai University, Fluid Mechanics

III. Professional Appointments

2009- Professor, Horn Point Lab., Univ. of Maryland Center for Environmental Science.
2014-2018 Adjunct Professor, Department of Atmospheric and Oceanic Science, Univ. of Maryland, College Park.
2001-2009 Associate Professor, Horn Point Lab., Univ. of Maryland Center for Environmental Science.
1996-2001 Research Scientist, Institute of Ocean Sciences, Canada.
1991-1996 Research Associate, University of Victoria, Canada.

IV. Editorial Board, Leaderships and Awards

- Editor, Journal of Geophysical Research – Oceans (2026-)
- Specialty Chief Editor, Frontiers in Marine Science (2022-)
- Guest Editor, Environmental Research Letters (2025-)

- Associate Editor, *Frontiers in Marine Science* (2020-2022)
- Academic Editor, *PLOS Climate* (2021-)
- Associate Editor, *Continental Shelf Research* (2019-2026)
- Co-Chair of International Science Council - Scientific Committee on Oceanic Research (SCOR) Working Group 172 - SALTWATER (2024-2028)
- Member of UNESCO-Intergovernmental Oceanographic Commission Global Ocean Oxygen Network (GO₂NE) Working Group (2024-2027)
- Fulbright U.S. Scholar (2024)
- President's Award for Excellence in Application of Science (2023)

V. Publications

Submitted:

- [138] **Li, M.**, S. A. Talke, M. A. Hummel, S. B. Lee, P. Orton, K. A. Rose, A. Mejia, S. Dykstra and A. E. Sutton-Grier. 2026. Regional teleconnections in flood risks in rivers, estuaries and coastal oceans warrant a regional approach to coastline management. *Earth's Future*, submitted.
- [137] **Li, M.**, J. Verduzco, X. Wang, P.R. Costa, P. M. Glibert. 2026. Using Large Language Models to automate harmful algal bloom prediction. *Limnology and Oceanography Letters*, submitted
- [136] Oschlies, A., V. Garcon, N. Gallo, M. Gregoire, K. Isensee, J. Karstensen, **M. Li**, A.. Pezner, 2026. Oxygen. *Encyclopedia of Ocean Sciences*. 4th Edition. Academic Press, submitted.
- [135] Xie, X., H. Pan, L. Qu, Z. Zhang, D. Chen, M.R. Clark, **M. Li**, D. Zhang, X. Xing, H. Li, J. Gan and L. Zhou. 2026. Titled Taylor caps shape three-dimensional seamount oases and their latitudinal dependence. *Nature Geoscience*, submitted.
- [134] Najjar, R.G., D. Tillman, M. Herrmann, A. Izabayo, **M. Li**, A. Mejia, V. Pham. 2026. Identification and Characterization of Surface Water Intakes on the Chesapeake Bay. AGU book on human impacts on the global salt cycle edited by S. Kaushal, acceptable after revision.
- [133] Cai, W-J., S. R. Alin, N. Bednarsek, **M. Li** and R. A. Feely. 2026. CO₂ biogeochemical processes and acidification drivers in semi-enclosed large estuaries: observational and modeling studies from the Chesapeake Bay and Salish Sea. Chapter 10 in *CO₂ Chemistry and Ocean Acidification: Theory and Applications in Estuaries and Coastal Oceans* edited by W-J. Cai, A. Dickson and R. A. Feely. Wiley, ISBN-10: 1394203802, acceptable after revision.

Published:

- [132] Xie, X., L. Qu, **M. Li**, L. Thomas, D. Chen, D. Zhang, L. Zhou, J. Wang, H. Pan, C. Shen, and W. Ren. 2026. Near-inertial waves funnelled into Taylor caps shape seamount tops, with implications for biodiversity in the deep ocean. *Science Advances* (23), eab7889. doi: 10.1126/sciadv.aeb7889
- [131] Slomp, C.P., A. Oschlies, D. Austin, L.T. Bach, L. Bopp., D. Breitburg, A. Canning, D.J. Conley, M. Dai, B. Dewitte, H. Enevoldsen, E. Ferrar, A. Galan, V. Garçon, M. Gregoire, B. Gustafsson, D. Gutierrez, P. Handmann, A. Hylén, K. Isensee, R. Lamond, **M. Li**, K. Limburg, I. Montes, J. Sterling, A. Tan Shau Hwai, J. M. Testa, D. Wallace, J.J. Waniek, M. Yasuhara. 2026. Can artificial oxygenation revitalize dying coastal seas? *Environmental Research Letters*, 21, 083004 <https://doi.org/10.1088/1748-9326/ae5e96>
- [130] *Chen, Y. and **M. Li**. 2026. Discerning drivers of a coastal *Karenia brevis* bloom after Hurricane Isabel (2022) on the West Florida Shelf. *Journal of Geophysical Research - Oceans*, DOI: 10.1029/2025JC023444.
- [129] Glibert, P. M., C. A. Heil, **M. Li**. 2026. Climate shifts and anthropogenic nitrogen footprints driving increased severity and duration of toxic *Karenia brevis* blooms in the Gulf of Mexico over the past ~50 years. *Frontier in Marine Science*, 13:1769349. doi: 10.3389/fmars.2026.1769349
- [128] *Chen, Y, **M. Li**, P. M. Glibert, C. A. Heil, S. and Ahn. 2025. A modelling investigation into the ecological role of mixotrophy in *Karenia brevis* blooms on the West Florida Shelf. *Harmful Algae*, <https://doi.org/10.1016/j.hal.2025.102979>.
- [127] Glibert, P. M., C. A. Heil, **M. Li**. 2025. More sustained, more severe blooms and shifting monthly patterns of the toxigenic dinoflagellate *Karenia brevis* on the West Florida Shelf. *Harmful Algae*, <https://doi.org/10.1016/j.hal.2025.102967>.
- [126] Reidenbach, M., **M. Li**, K. Rose, T. Tomiczek, J. Morris, C. Palinkas, L. W. Staver, W. Nardin, M. Gray, S. Lee, A. Sutton-Grier, A. Hruska. 2025. Performance evaluation of Natural and Nature-Based Features (NNBF) for coastal protection and co-benefits. *Annual Review of Marine Science*, 18, <https://doi.org/10.1146/annurev-marine-040423-023251>.
- [125] **Li, M.**, R. Najjar, S. Kaushal, A. Mejia, R. Chant, D. Ralston, H. Burchard, A. Hadjimichael, A. Lassiter, X. Wang. 2025. The emerging global threat of salt contamination of water supplies in tidal rivers. *Environmental Science and Technology Letters*, invited global perspective, <https://doi.org/10.1021/acs.estlett.5c00505>.
- [124] **Li, M.**, R. Li, Y. Guo, J. M. Testa, W-J. Cai, C. Shen, Y. Chen, and S. S. Kaushal. 2025. Disentangling the effects of global and regional drivers on diverse long-term pH trends in coastal waters. *AGU Advances*, 6, e2024AV001350. <https://doi.org/10.1029/2024AV001350>.

- (*EOS Research Spotlight*) Reinsel, M. (2025), River alkalization and ocean acidification face off in coastal waters, *Eos*, 106, <https://doi.org/10.1029/2025EO250196>.
- [123] **Li, M.**, Y. Chen, R. Doyle, J. M. Testa, W-J. Cai, A. Gagnon, and C. Bott. 2025. Wastewater alkalinity addition for carbon emission reduction and marine CO₂ removal. *Environmental Research Letters* 20: 0444041, <https://doi.org/10.1088/1748-9326/adc1e3>.
- [122] *Chen, Y., and **M. Li**. 2025. Impact of Hurricane Ian (2022) on *Karenia brevis* bloom on the West Florida Shelf. *Geophysical Research Letters*, 52, e2024GL113500. <https://doi.org/10.1029/2024GL113500>.
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- [120] Weber, M. A., L. A. Wainger, J. M. Testa, G. Waldbusser, and **M. Li**. 2024. Climate Resilience and Profitability Thresholds in Chesapeake Bay Oyster Aquaculture. *J. Env. Manag.*, <https://doi.org/10.1016/j.jenvman.2024.123202>.
- [119] Testa, J., W. Liu, W. Boynton, D. Breitburg, C. Friedrichs, **M. Li**, D. Parrish, M. Trice, D. Brady. 2024. Physical and biological controls on short-term variations in dissolved oxygen in shallow waters of a large temperate estuary. *Estuaries & Coasts*, doi: <https://doi.org/10.1007/s12237-024-01372-5>.
- [118] *Li, R., **M. Li**. 2024. Generation and evolution of internal solitary waves in a coastal plain estuary. *Journal of Physical Oceanography*, doi: <https://doi.org/10.1175/JPO-D-23-0151.1>.
- [117] Glibert, P.M., **M. Li**. 2024. Warming, wheezing, blooming waters: hypoxia and harmful algal blooms. In: Bairdm Daneil and Elliott, Michael (eds) *Treatise on Estuarine and Coastal Science*, 2nd Edition, Vol. 4, pp. 401-444. Oxford. Elsevier.
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- [115] *Chen, Y., **M. Li**, P. M. Glibert, C. Heil. 2023. Murky waters: modelling the succession from r to K strategies (diatoms to dinoflagellates) following a nutrient spill from a mining facility in Florida. *Limnology and Oceanography*, doi: 10.1002/lno.12420.

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- [113] **Li, M.**, Y. Guo, W.-J. Cai, J.M. Testa, C. Shen, R. Li, J. Su. 2023. Projected increase in carbon dioxide drawdown and acidification in large estuaries under climate change. *Communications Earth & Environment*, 4:68, <https://doi.org/10.1038/s43247-023-00733-5>.
- [112] *Ni, W., **M. Li**. 2023. What drove the nonlinear hypoxia response to nutrient loading in Chesapeake Bay during the 20th century? *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2022.160650>.
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- [108] Glibert, P.M., W.-J. Cai, E. Hall, **M. Li**, K.L. Main, K. Rose, J.M. Testa, N.K., Vidyarthna. 2022. Stressing over the complexities of multiple stressors in marine and estuarine systems. *Ocean-Land-Atmosphere Research*, <https://doi.org/10.34133/2022/9787258>.
- [107] *Li, R., **M. Li**, P.M. Glibert. 2022. Coupled carbonate chemistry-harmful algae bloom model for *Prorocentrum minimum* blooms in an estuary. *Frontiers in Marine Science*, 9:889233. doi: 10.3389/fmars.2022.889233
- [106] Palinkas, C., P. Orton, M. Hummel, W. Nardin, A. Sutton-Grier, L. Harris, M. Gray, **M. Li** et al. 2022. Innovations in coastline management with natural and nature-based features (NNBF): lessons learned from three case studies. *Frontiers in Built Environment*, 8:814180, doi: 10.3389/fbuil.2022.814180
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- [103] **Li, M.**, Y. Chen, F. Zhang, Y. Song, P.M. Glibert, and D.K. Stoecker. 2022. A three-dimensional mixotrophic model of *Karlodinium veneficum* blooms in a eutrophic estuary. *Harmful Algae*, <https://doi.org/10.1016/j.hal.2022.102203>.
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- [101] **Li, M.**, F. Zhang, P.M. Glibert. 2021. Seasonal life strategy of *Prorocentrum minimum* in Chesapeake Bay, USA: validation of the role of physical transport using a coupled physical-biogeochemical-harmful algal bloom model. *Limnology and Oceanography*, doi: 10.1002/lno.11925.
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- [98] Cai, W-J, R. Feely, J. Testa, **M. Li**, W. Evans, S. Alin, Y. Xu, G. Pelletier, A. Ahmed, D. Greeley, J. Netwon and N. Bednarksek. 2021. Natural and anthropogenic drivers of acidification in large estuaries. *Annual Review of Marine Science*, <https://doi.org/10.1146/annurev-marine-010419-011004>.
- [97] Ross, A.C., R.G. Najjar, **M. Li**. 2021 A metamodel-based analysis of the sensitivity and uncertainty of the response of Chesapeake Bay salinity and circulation to projected climate change. *Estuaries and Coasts*, 44, 70-87, <https://doi.org/10.1007/s12237-020-00761-w>.
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Waldbusser, M. F., W.M. Kemp. 2020. Chesapeake Bay acidification buffered by spatially decoupled carbonate mineral cycling. *Nature Geosciences*, 13, 441–447, doi: <https://doi.org/10.1038/s41561-020-0584-3>.

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Conference proceedings and reports:

- [7] Boesch, D. F., Baecher, G. B., Boicourt, W. C., Cullather, R. I., Dangendorf, S., Henderson, G. R., Kilbourne, H. H., Kirwan, M. L., Kopp, R. E., Land, S., **Li, M.**, McClure, K., Nardin, W., & Sweet, W. V. 2023. Sea-level Rise Projections for Maryland 2023. University of Maryland Center for Environmental Science, Cambridge, MD.
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- [5] Boesch, D.F., L.P. Atkinson, W.C. Boicourt, J.D. Boon, D.R. Cahoon, R.A. Dalrymple, T. Ezer, B.P. Horton, Z.P. Johnson, R.E. Kopp, **M. Li**, R.H. Moss, A. Parris, C.K. Sommerfield. 2013. Updating Maryland's Sea-level Rise Projections. Special Report of the Scientific and Technical Working Group to the Maryland Climate Change Commission, 22 pp. University of Maryland Center for Environmental Science, Cambridge, MD.
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- [3] **Li, M.** 1996. Representing turbulent dispersion in oil spill models. *Proceedings of the 19th Arctic and Marine Oilspill Program Technical Seminar*, 185-198.
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** stands for papers whose first author is my student or postdoc.*

VI. Grants

- [37] Evaluating the technical potential for municipal wastewater infrastructure as a mode of Ocean Alkalinity Enhancement for multiple benefits. 06/2026-12/2026. Carbon to Sea. Testa, Bott, Cai, Li and Wainger (Co-PI). Total: \$112,500
- [36] Oceanic salt intrusion into tidal freshwater rivers (SALTWATER). 2024-2028. The International Science Council's Scientific Committee on Oceanic Research (SCOR) Working Group. Li and Burchard (PI). Total: \$45,000.
- [35] City of Cambridge habitat restoration and green stormwater management. 2024-2026. National Fish and Wildlife Foundation. Rose, Li, Palinkas, Nardin, Staver, Gray and Lyubchich (Co-PI). UMCES Total: \$966,066.
- [34] Make Cambridge resilient flood mitigation project. 2024-2027. Federal Emergency Management Agency. Li, Palinkas, Staver, Nardin, Gray, Wang. UMCES Total: \$1,185,524 (Project Total: \$17.8 million) (UMCES PI).
- [33] Prototyping decision support and monitoring tools for equitable management of salt contamination of water supplies in tidal rivers. 2024-2025. National Science Foundation. Li, Najjar, Kaushal, Lassiter, Mejia. Total: \$650,000 (PI).
- [32] mCDR 2023: Quantifying the efficacy of wastewater alkalinity enhancement on mCDR and acidification mitigation in a large estuary. 2023-2026. NOAA and National Oceanographic Partnership Program (NOPP). Testa, Cai, Li, Xu. Total: \$1,864,561 (Co-PI).
- [31] Emerging hypoxia on the oligotrophic West Florida Shelf and its potential impacts on marine ecosystem: discerning the roles of HABs, warming and extreme weather events. 2023-2027. National Oceanic and Atmospheric Administration. Li, Glibert, North, Heil. Total: \$1,436,076 (PI).
- [30] Conference: salt contamination of water supplies in tidal rivers. National Science Foundation. 2023-2026. Li, Chant, Kaushal, Ralston, Mejia. Total: \$99,999 (PI).
- [29] Collaborative Research: RAPID: Unprecedented Hurricane Ian nutrient and organic matter inputs to Southwest Florida coastal waters. National Science Foundation. 2022-2025. Heil, Glibert, Li and Hall. Total: \$200,000 (Co-PI).

- [28] Estuary plumes as driver of inner continental shelf benthic community structure and function. 2021-2026. National Science Foundation. Woodland, Li and Testa. Total: \$946,572 (Co-PI).
- [27] CoPe RCN (Research Coordination Network): Advancing Interdisciplinary Research to Build Resilient Communities and Infrastructure in the Nation's Estuaries and Bays. 2020-2026. National Science Foundation. Li, Stacey, Lubell, Orton and Reilly. Total: \$500,000 (PI).
- [26] ECOHAB19: Life and death of *Karenia brevis* blooms in the Eastern Gulf of Mexico. 2019-2026. National Oceanic and Atmospheric Administration. Glibert and Li. \$1,115,280. Total: \$5,000,000 (Co-PI).
- [25] How will sea level rise impact hypoxia in the Chesapeake Bay? A multiple model intercomparison project. 2018-2019. Environmental Protection Agency (thru VIMS). Li. \$20,000 (PI).
- [24] Identifying Thresholds in Coupled Biogeochemical-Biological-Economic Systems Under Multiple Stressors. 2018-2021. National Atmospheric and Oceanic Administration. Testa, Cai, Li, Wainger and Waldbusser. \$1,035,411 (Co-PI).
- [23] Simulating the Performance of Optical Techniques for Estimating Population Indices in Reef Fish Surveys. 2018-2020. National Atmospheric and Oceanic Administration (through CINAR). Rose and Li, \$326,924 (Co-PI).
- [22] Generation mechanisms of nonlinear internal waves in coastal plain estuaries. 2018-2022. National Science Foundation. Li, \$341,057 (PI).
- [21] ECOHAB 2017: Development of a Mechanistic ROMS-RCA-HAB Model for Predicting *Prorocentrum minimum* and *Karlodinium veneficum* Blooms in Chesapeake Bay. 2017-2021. National Atmospheric and Oceanic Administration. Li and Glibert, \$598,888 (PI).
- [20] OA2015: Interactions between ocean acidification and eutrophication in estuaries: Modeling opportunities and limitations for shellfish restoration. National Atmospheric and Oceanic Administration. 2015-2019. Testa, Li, Kemp, Cornwall, Cai and Waldbusser, \$1,492,710 (Co-PI).
- [19] Improving prediction and visualization of coastal inundation on the Eastern Shore of Maryland. Maryland Sea Grant. 2016-2019. Li and Wang, \$147,911 (PI). Plus two-year Maryland Sea Grant Fellowship for graduate student Fan Zhang.
- [18] WSC-Category 1 Collaborative Proposal: Coupled multi-scale economic, hydrologic and estuarine modeling to assess impacts of climate change on water quality management. 2014-2017. National Science Foundation. Easton, Bosch, Sample, Li, Najjar. \$599,828 (PI).

- [17] Activity 1: Application and Analysis of a Coupled Hydrodynamic-Biogeochemical Model (ROMS-RCA) in Shallow-Water Habitats of the Chesapeake Bay. Environmental Protection Agency, 2014-2016. Testa, Brady and Li. \$78,019 (Co-PI).
- [16] UMCES Comprehensive Proposal to Address the Impacts of Conowingo Particulates on the Chesapeake Bay. Exelon. 2014-2016. Cornwall, Palinkas, Sanford, Li, Testa and Kemp. \$1,214,477 (Co-PI).
- [15] Integrated rapid-response observations and ocean ensemble optimization to improve storm intensity forecasts in the Northeast U.S. 2013-2016. National Atmospheric and Oceanic Administration. Li, Boicourt and Wang, \$897,246 (PI).
- [14] Collaborative Research: The role of wind in estuarine dynamics. 2011-2015, National Science Foundation, Boicourt, Li and Sanford, \$1,440,217 (Co-PI).
- [13] A super-regional testbed to improve models of environmental processes on the U.S. Atlantic and Gulf of Mexico coasts. 2010-2011. National Oceanic and Atmospheric Administration, \$3,676,000 (Co-PI).
- [12] Collaborative Research: Estuarine response to climate forcing. 2010-2015, National Science Foundation, Li and Najjar, \$727,032 (PI).
- [11] Collaborative Research: Regulation of phytoplankton dynamics in Mid-Atlantic estuaries subject to climatic perturbations. 2008-2013, National Science Foundation, Harding, Li and Paerl, \$1,100,779 (Co-PI).
- [10] Collaborative Research: Impact of secondary circulations and mixing on estuarine exchange flows. 2008-2012, National Science Foundation, Chant, Li and Valle-Levinson, \$1,050,579 (PI).
- [9] Linking ASI to regional science and solutions for environmental management in Chesapeake Bay: A Subcontract to ESSIC, UMCP. 2008-2009. National Oceanic and Atmospheric Administration, Li, North and Cole, \$103,586 (PI).
- [8] CHRP07: Modeling hypoxia and ecological responses to climate and nutrients. 2007-2013, National Oceanic and Atmospheric Administration, Kemp, Li, North, Boynton, Secor, DiToro and Fennel, \$1,857,842 (Co-PI).
- [7] Chesapeake Inundation Prediction System (CIPS): A forecasting and visualization prototype for emergency management in coastal-bay-estuary systems. 2007-2010, National Oceanic Atmospheric Administration, Seller, Wang, Boicourt, Li, Titlow, Stamey, Smith, King and Koterba, \$1,500,000 (Co-PI).
- [6] Large Eddy Simulations of estuarine mixing. 2005-2009, National Science Foundation, Li, Piomelli and Geyer, \$618,679 (PI).

- [5] Development of an ecological forecasting model for Chesapeake Bay: A demonstration project for technology transfer to NOAA. 2006-2008. National Oceanic and Atmospheric Administration, Li and Harding, \$68,066 (PI).
- [4] Oceanic LES simulations to interpret and synthesize turbulence measurements obtained during CBLAST-Low. 2005-2007, Office of Naval Research, Li, \$55,000 (PI).
- [3] Parameterizing the effects of upper-ocean large eddies on air-sea interaction. 2002-2007, Office of Naval Research, Li and Garrett, \$212,000 (PI).
- [2] A community model for the Chesapeake Bay. 2002-2005, National Oceanic and Atmospheric Administration/CICEET, Li, Hood and Boicourt, \$196,000 (PI).
- [1] Modeling dispersal of oyster larvae in Chesapeake Bay. 2004-2006, Maryland Department of Natural Resources, North, Hood, Li and Gross, \$99, 850 (Co-PI).

VII. Teaching Experience

2002- Member, USM (University of Maryland) Inter-Institutional Graduate Faculty
 2004 - 2016 Co-Chair, Oceanography AOS (Area of Speciality).

A. University System of Maryland Courses Taught

Physics of Marine and Estuarine Environments (MEES 661, 3 credit)
 ISG: Developing and comparing the environmental and climate context for research sites (MEES 718C)
 and climate context for research sites Climate Impacts on Estuaries and Ecosystems
 Transport processes and plankton distributions

B. Graduate Students Supervised as Major Advisor

Yuren Chen, Ph.D, Physical Oceanography, MEES, coastal ocean dynamics and red tide on West Florida shelf, defended in summer of 2025 (current).

Renjian Li, Ph.D., Physical Oceanography, MEES, Internal waves, defended in summer of 2023.

Yijun Guo, M.Sc., Physical Oceanography, MEES, Ocean acidification, defended in spring of 2022.

Wenfei Ni, Ph.D., Physical Oceanography, MEES, Estuarine hypoxia, defended Ph.D thesis in December 2019.

Fan Zhang, Ph.D., Physical Oceanography, MEES, Oceanic response to hurricanes and storm surges, defended thesis in spring of 2018.

Wei Liu, Ph.D., Physical Oceanography, MEES, Dye dispersion in the James River estuary, defended thesis in Spring 2017.

Yun Li, Ph.D, Physical Oceanography, MEES, Impact of climate change and extreme weather events on hypoxia in Chesapeake Bay, defended in Summer 2012.

Peng Jia, M.Sc, Physical Oceanography, MEES, Circulation dynamics and salt balance in a lagoonal estuary, Defended in Summer 2011.

C. Graduate Student Committee Memberships

Michael Zickel	M.Sc	MEES	UMCP
David Miller	Ph.D.	MEES	UMCP
Monica Salerno	M.Sc	MEES	UMCP
Shih-Nan Chen	Ph.D.	MEES	UMCP
Ed Davis	M.Sc.	MEES	UMCP
Yonghui Gao	Ph.D	MEES	UMCP
Ji Li	Ph.D	MEES	UMCP
Jeremy Testa	Ph.D	MEES	UMCP
Alex Fisher	Ph.D	MEES	UMCP
Justin Schulte	Ph.D	Meteorology	Penn State
Andrew Ross	Ph.D	Meteorology	Penn State
Michelle Lin	Ph.D	MEES	UMCP
Emily Russ	Ph.D	MEES	UMCP
Samantha Gleich	Ph.D	MEES	UMCP/UMCES
Nicole Basenback	M.Sc	MEES	UMCP/UMCES
Caroline Wienicki	M.Sc	MEES	UMCP/UMCES
Sophia Ahn	Ph.D	MEES	UMCP/UMCES
Katie Lankowicz	Ph.D	MEES	UMCP/UMCES
Bruna Sobrinho	Ph.D	MEES	UMCP/UMCES
Allison Dreiss	Ph.D	MEES	UMCP/UMCES
Jake Shaner	Ph.D	MEES	UMCP/UMCES

D. Postdoctoral Fellows Supervised

Le Zhang, modelling hypoxia on the West Florida Shelf. 2025-now.

Ziyu Chen, hydrodynamic modelling of Chesapeake Bay and tributaries, 2024-2025.

Deshuai Wang, modelling of Chesapeake Bay river plume, 2022-2023.

Fan Zhang, modeling of harmful algal blooms, 2018-2019.

Xiaohui Xie, estuarine response to winds, sediment modeling and effects of physical processes on ocean acidification, 2013-2018.

Serena Lee, inundation modelling, 2013-2015.

Younjoo Lee, hypoxia research, 2009-2013.

Peng Cheng, estuarine modeling, 2011-2013.

Liejun Zhong, ROMS modelling of Chesapeake Bay, 2003-2008.

E. Undergraduate Students Supervised

Vincent Pham, Salisbury University, 2025.

William Lamuth, Salisbury University, 2024.

Spencer Presley, Salisbury University, 2024.

Nocholas Gammel, Salisbury University, 2024.

Samantha Roth, Leigh University, 2018.

Samuel Barnes, Salisbury University, 2018.

Cale Bowen, Salisbury University, 2013.

Wan Ren, Salisbury University, 2013.

Jeff Dandoy, John Hopkins University, 2011.

Andrea Abler, University of Maryland, Baltimore County, 2006.

Sergejs Melderis, Salisbury University, 2005.

Mitch Buck, John Hopkins University, 2004.

VIII. Service

A. Reviews

I review 5 papers and proposals per year for various journals and funding agencies including

National Science Foundation
National Academy of Sciences

National Oceanic and Atmospheric Administration
Department of Energy
Deep-Sea Research
Journal of Marine Research
Geophysical Research Letters
Journal of Physical Oceanography
Journal of Fluid Mechanics
Journal of Geophysical Research
Limnology and Oceanography
Estuarine, Coastal and Shelf Research
Marine Ecology Progress Series
Ocean Modelling
Physics of Fluids
Continental Shelf Research
Journal of Hydrology
Journal of Marine Systems
Estuaries and Coasts

B. UMCES and Horn Point Laboratory

Tenure and Promotion Review Committee (2019, 2020, 2021, 2022, 2023)
 Emeritus Professor Review Committee (2019)
 Panelist on Coastal Resiliency, UMCES Environmental Summit (2018).
 Chair of Physical Oceanography Faculty Search Committee (2016-2018)
 HPL IT Committee (2018-2019)
 UMCES MSCHE Self-Study 2020 – Working Group 6 (2019)
 HPL Director Review Committee (2016)
 Emeritus Professors Review Committee (2016, 2019)
 Graduate Council (2013-2014)
 UMCES Accreditation Readiness Working Group Member and Team Leader (2013)
 HPL Education Committee Chair (2012-2014)
 Faculty Senate (2003-2007)
 HPL Computer Service Committee Chair (2008-2009, 2022-)

C. University System of Maryland

MEES Curriculum Committee (2013-2015)
 Co-Chair, MEES Oceanography AOS (2004-2016)
 Admission Committee, MEES Oceanography AOS (2003-2004)
 Meeting with MEES Program Review Committee (2008)

D. Public Service

- Served on the advisory committee on Resilience Network with Maryland Department of Emergency Management (2022- present)
- Organized webinar series on salt contamination of water supplies in tidal rivers (2023-present)

- Served on the FEMA Flood Mitigation Steering Committee for the City of Cambridge, MD (2021- present).
- Served on Middle Branch Technical Advisory Committee, City of Baltimore (2020- present).
- Served on the Actionable Science Team for the Baltimore Urban Water Partnerships (2020-present).
- Featured research on salt contamination of water supplies in tidal rivers at Eurekalert, MSN news, Yahoo news, phys.org, whoi news, etc. (2025)
- Advised US Embassy in Portugal and met with scientific/economic officers on bilateral collaborations in ocean and climate change (2024).
- Interviewed with Diario de Noticias (National Newspaper in Portugal) on issues related to ocean and climate change including salt contamination of water supplies (2024)
- Served on the State of Maryland’s sea-level rise expert group – member and co-chair (2023)
- Gave an invited presentation on coastal inundation and coastline management strategies to Maryland Commission on Climate Change Science and Technical Group (2022).
- Interviews on sea level rise, storm surge, hypoxia and red tides with a number of newspapers, journals and TVs (2019-).
- Interview for a feature article on Texas Coastal Protection in Undark and Wire Magazine (2021).
<https://undark.org/2021/06/14/texas-sized-effort-to-fend-off-rising-seas/> and <https://www.wired.com/story/a-dollar26-billion-plan-to-save-the-houston-area-from-rising-seas/>
- Interview for a feature article on San Francisco Bay coastline management in Scientific America (2021).
<https://www.scientificamerican.com/article/walling-off-one-coastal-area-can-flood-another/>
- Interview for Maryland Matters on chronic flooding threatening Maryland’s rural Eastern Shore (2021).
<https://www.marylandmatters.org/2021/10/11/chronic-flooding-threatens-sites-along-harriet-tubman-underground-railroad-byway/>
- Interview for E&E news on flood-hit city heading to Supreme Court over climate change
[Flood-hit city heads to Supreme Court over climate damage \(E&E News\)](#)
- Invited participant at the Lower Eastern Shore Climate Adaptation Network meeting (2019).
- Featured scientist in the article on “defending the shoreline” by Stormwater, the journal for surface water quality professionals (2019).
- Featured researcher in the Maryland Sea Grant film on “A Diminishing Smithville” (2018).
- Panelist on NOAA National Sea Grant Office four-year review of the Maryland Sea Grant program (2018).

- Invited speaker at the workshop of Maryland Chapter of the American Planning Association (2018).
- Developed a website on coastal inundation projections for Chesapeake Bay, Eastern Shore of Maryland and City of Baltimore (2018): <http://geronimo.hpl.umces.edu/mingli/>.
- Presented an outreach seminar on sea level rise, storm surge and coastal inundation at Chesapeake Biology Lab (2018).
- Advised Chesapeake Bay Foundation on sea level rise and infrastructure decisions (2017).
- Featured researcher in the film on “High Tide in Dorchester” by Tom Horton, Sandy Cannon-Brown and Dave Harp (2017).
- Featured researcher at the Washington Post, Claims Journal, the Republic (Indiana), the Cumberland Times-News, Daily Journal (IN), CBS Baltimore, My Eastern Shore, the Star Democrat, WBOC, Daily Times What is Up Magazine (2013-2020).
- Featured researcher in Baltimore Sun (2011) and Gazette Journal (2012).
- Appearance in Documentary on “Mega Disasters – GLACIER MELTDOWN” produced by History Channel (2007).
- Invited lectures for the NSF COSEE program for teachers (2003, 2005).

E. Local/National /International

- Co-Chair of International Science Council - Scientific Committee on Oceanic Research (SCOR) Working Group 172 on oceanic salt intrusion into tidal freshwater rivers (SALTWATER) (2024-2028)
- Member of UNESCO-Intergovernmental Oceanographic Commission Global Ocean Oxygen Network (GO₂NE) Working Group (2024-2027)
- Co-convenor of 2026 Ocean Science Meeting Session on marine and hydrological processes impacting on estuarine saltwater intrusions (2026)
- Lead organizer of NSF-sponsored workshop on the salinity squeeze on tidal fresh rivers – effects of saltwater intrusion and freshwater salinization (2025)
- Invited speaker at TropEcS Symposium at Leibniz Center for Tropical Marine Research, Bremen, Germany (2025)
- Discussion leader of Coastal Extremes Session at Gordon Research Conference on Coastal Ocean Dynamics (2025)
- Expert panel member of Global Ocean Oxygen Network (GO₂NE) workshop on ocean reoxygenation techniques by UNESCO-IOC (2024)
- AGU Fall Meeting Session Convenor on “Processes driving the salination of coastal freshwater supplies” – Co-convenor (2023)
- CERF Session Convenor on “Exploring the hydrodynamics, biogeochemistry and ecology of inshore-offshore coastal plumes: new knowledge and developing techniques” – Co-convenor (2023)
- Expert group member and Co-Leads on report on “sea-level rise projections for Maryland 2023” (2023)

- Invited keynote speaker at the China-Portugal Forum on coastal environmental and innovative technology for sustainable development. Macau (2023)
- Convenor of ASLO session on “disentangling complex long-term pH and O₂ trends in coastal and estuarine systems from global and regional drivers” (2023)
- Invited participant at Coastlines and People (CoPe) Awardees Conference, Alexandria, VA (2023).
- CERF Session Convenor on “Impact of climate change on harmful algal blooms” – Convener (2021)
- CERF Session Convenor on “Innovation in nature-based systems for coastal protection” –Co-convener (2021)
- IAHR panel on Climate Change and Coastal Resilience (2020).
- Department of Energy – proposal review panel (2020, 2022).
- National Science Foundation – proposal review panel (2019).
- CERF Session Convenor on “Impact of weather and extreme events: observations, analysis, and modeling” – Co-convener (2019).
- Invited participant and speaker at NASA workshop on Chesapeake Bay water quality modelling workshop (2019).
- Invited participant and speaker at the workshop on “use of dredged material to protect low-lying areas of the Chesapeake Bay” sponsored by Maryland Department of Transport and Maryland Port Administration (2019).
- American Geophysical Union Fall Meeting, Session Convenor on “Biogeochemical cycling in estuaries, coastal waters, and their watersheds: natural variability, response to land use and climate change, and management implications” (2018).
- Expert group member for updating sea level projections for the state of Maryland (2018).
- Invited participant at the STAC (Scientific and Technical Advisory Committee) meeting of Chesapeake Bay Program on climate change effects (2018).
- Invited participant and speaker at NSF workshop on the future in estuarine and coastal modelling (2018).
- National Academy of Sciences – proposal review panel (2018).
- CERF Session Convenor on “Impact of extreme weather on estuaries: innovative methods and modeling” – Co-convener (2017).
- Invited participant on coastal resiliency symposium on “Universities and Coastal Resilience: A Strategic Discussion” at Old Dominion University (2017).
- Expert group member for updating sea level projections for Maryland (2013).
- Annual MABPOM Meeting – Co-convener (2011).
- National Oceanic and Atmospheric Administration – proposal evaluation panel (2010).
- Office of Naval Research – Invited participant and speaker at ONR workshop to draft a white paper for a new Departmental Research Initiative (DRI) on the

effects of surface waves on air-sea interaction, Scripps Institution of Oceanography (2010).

- Ocean Science Meeting, Session Convenor on “Impacts of eutrophication and climate change on marginal seas”, Portland, Oregon (2010).
- American Geophysical Union Fall Meeting, Session Convenor on “Impact of climate variability and change on estuaries and coastal ocean”, San Francisco (2008).
- American Geophysical Union Fall Meeting, Session Convenor on “Tidal processes in coastal oceans and estuaries”, San Francisco (2008).
- International Symposium on “From millimetres to megametres: the interacting scales of ocean dynamics”, Victoria, B.C., Canada, organizing committee (2008).
- Ocean Science Meeting, Session Convenor on “Dynamics of estuarine circulations and river plumes: from process studies to predictive models”, Orlando, Florida (2008).
- Served on the National Science Foundation (NSF) proposal review panel in the Division of Ocean Sciences (2003, 2007).
- Invited participant in EPA STAC workshop, Annapolis, MD (2006).
- Invited participant in U.S. Army Corps of Engineer’s workshop on storm surge and floodplain models, MD (2006).
- Invited participant in Maryland Sea Grant Research Planning workshop, College Park, MD (2005)
- Invited participant in EPA workshop on Ecological Forecasting, Annapolis, MD (2005).
- Invited participant at ONR Northeast Site Review workshop, New Brunswick, New Jersey (2005).

IX. Leadership Positions

- Co-Chair of International Science Council - Scientific Committee on Oceanic Research (SCOR) Working Group 172 on oceanic salt intrusion into tidal freshwater rivers (SALTWATER) (2024-2028)
- Member of UNESCO-Intergovernmental Oceanographic Commission Global Ocean Oxygen Network (GO₂NE) Working Group (2024-2027)
- Associate Editor, Continental Shelf Research (2019-2026)
- Associate Editor, Frontiers in Marine Science (2020-2022)
- Speciality Chief Editor, Frontiers in Marine Science (2022-)
- Academic Editor, PLOS Climate (2021-)
- Guest Editor, Environmental Research Letters (2025-)
- Editor, Journal of Geophysical Research – Oceans (2026-)
- Principal Investigator, NSF funded Research Coordination Network (RCN) (2020-)

- Co-convenor of Ocean Science Meeting session on “marine and hydrological processes impacting on estuarine saltwater intrusions” (2026)
- Convenor of ASLO session on “disentangling complex long-term pH and O₂ trends in coastal and estuarine systems from global and regional drivers” (2023)
- Convenor of CERF Session on “Impact of climate change on harmful algal blooms” (2021)
- Co-convenor of CERF Session on “Innovation in nature-based systems for coastal protection” (2021)
- Co-convenor of CERF Session on “Impact of weather and extreme events: observations, analysis, and modeling” (2019).
- Convenor of AGU Fall Meeting Session on “Biogeochemical cycling in estuaries, coastal waters, and their watersheds: natural variability, response to land use and climate change, and management implications” (2018).
- Co-convenor of CERF Session on “Impact of extreme weather on estuaries: innovative methods and modeling” (2017).
- Expert panel member of Global Ocean Oxygen Network (GO₂NE) workshop on ocean reoxygenation techniques by UNESCO-IOC (2024)
- Panelist on the IAHR panel on Climate Change and Coastal Resilience (2020).
- Panelist on the Department of Energy’s proposal review panel (2020, 2022).
- Panelist on the National Science Foundation’s proposal review panel (2019).
- Panelist on the National Academy of Sciences’ proposal review panel (2018).
- Panelist on the NOAA National Sea Grant Office four-year review of the Maryland Sea Grant program (2018).
- Expert group member on updating sea level projections for the state of Maryland (2018).
- Featured scientist in an article on Texas Coastal Protection in Undark and Wire Magazine (2021).
- Featured scientist in an article on San Francisco Bay coastline management in Scientific America (2021).
- Featured scientist in an article on “defending the shoreline” by Stormwater, the journal for surface water quality professionals (2019).
- Featured researcher in the Maryland Sea Grant film on “A Diminishing Smithville” (2018).
- Featured researcher in the film on “High Tide in Dorchester” by Tom Horton, Sandy Cannon-Brown and Dave Harp (2017).

X. Selected Invited Talks and Contributed Presentations

Li, M., Y. Chen, V. Pham, M. Stefank, R. Woodland, J. Testa. 2026. Chesapeake Bay plume and its effect on the transport and fate of particulate organic matter on the inner continental shelf. Presentation at 2026 Ocean Science Meeting. Glasgow, UK.

- Lee, S. B., K. Nederhoff, S. Lann, M. Li, S. A. Talke. 2026. How far inland does the sea rise? Investigating estuary-river transitions under sea level rise. Presentation at 2026 Ocean Science Meeting. Glasgow, UK.
- Li, M. 2025. A three-dimension mechanistic model for predicting *Karenia brevis* blooms on the West Florida Shelf. Talk at International Conference on Harmful Algae. Punta Arenas, Chile.
- Zhang, L. and M. Li. 2025. Connection between *Karenia brevis* blooms and hypoxia over the West Florida Shelf: A case study of 2005. Oral Presentation at AGU Fall Meeting, New Orleans, USA.
- Testa, J.M., Z. Ji, Y. Chen, R. Doyle, M. Li, W-J Cai, C. Bott, A. Gagnon, W. Burt, C. Hodgkins, R. Izett, S. Van Pelt. 2025. Quantifying the effects of wastewater alkalinity enhancement on marine CO₂ removal and carbon emission reductions through field trials and modelling. Presentation at 2023 CERF biennial conference.
- Li, M., Y. Chen, V. Pham, and J. Verduzco. 2025. Saltwater intrusion into tidal tributaries of Chesapeake Bay. Talk at NSF workshop on salinity squeeze on tidal fresh rivers – effects of saltwater intrusion and freshwater salinization. Philadelphia, USA.
- Li, M. 2025. Impacts of Tropical Cyclones on Harmful Algal Blooms in Coastal Oceans. Invited talk at TropEcS Symposium. Bremen, Germany.
- Li, M., M. Hummel, S. A. Talke, S. B. Lee, P. M. Orton, K. Rose, A. Mejia, and A. Sutton-Grier. 2024. Regional teleconnection in flood risks in bays, estuaries and rivers warrants regional approach to climate change adaptation. Presentation at American Geophysical Union 2024 Fall Meeting.
- Li, M., Y. Chen, R. Doyle, C. Bott, J. Testa and W-J. Cai. 2024. Integrating waster and ocean biogeochemical models to evaluate the potential of alkalinity addition in reducing carbon emission from wastewater treatment plants and enhancing marine CO₂ capture. Presentation at American Geophysical Union 2024 Fall Meeting.
- Cai, W-J., M. Li, R. He, E. Liao and J. Testa. 2024. Evaluating ideas and efficacy of adding alkalinity to wastewater treatment plants and estuarine systems for marine carbon dioxide removal. Invited talk at American Geophysical Union 2024 Fall Meeting.

- Talke, S. A., P. M. Talke, S. B. Lee, M. Hummel, and M. Li. 2024. Teleconnections in estuaries: insights from an analytical model. Presentation at American Geophysical Union 2024 Fall Meeting.
- Najjar, R. G., D. Tillman, A. Mejia, A. Izabayo, V. Pham, and M. Li, 2024. Identification and characterization of surface water intakes on the Chesapeake Bay. American Geophysical Union Annual Meeting, Washington, DC, December 9–13, 2024.
- Ji, Z., W.-J. Cai, J. Testa, W. Burt, C. Bott and M. Li. 2024. Chesapeake Bay wastewater alkalinity injection – Ocean Alkalinity Enhancement (OAE) based marine Carbon Dioxide Removal (mCDR). Presentation at American Geophysical Union 2024 Fall Meeting.
- Li, M., Z. Chen, A. Mejia, R. Chant, R. Najjar, A. Hadjimichael, S. S. Kaushal, S. Keitzer, A. Lassiter, S. Puckett, A. N. Rohith, A. Spangler, S. Wang and X. Wang. 2024. Coupled hydrological-hydrodynamic modeling of watershed, tidal rivers and estuaries: Assessing the impacts of drought, sea-level rise and human-accelerated chemical weathering on salt intrusion and freshwater salinization. Presentation at PECS conference, Bordeaux, France.
- Li, M. 2024. Drinking water, waste water and climate change. Invited talk at the 6th Conference of the Fulbrighters Portugal 2024 Conference Cycle.
- Li, M. 2024. Coastal water quality decline at the nexus of eutrophication and climate change. A case study of Chesapeake Bay, the largest estuary in the U.S. Invited seminar at Portuguese Institute for Sea and Atmosphere (IPMA).
- Li, M. 2024. Coastal water quality decline due to eutrophication and climate change. Invited seminar at University of Algarve, Portugal.
- Li, M. 2024. Mechanistic mathematical models of harmful algal species. Invited seminar at Nova University, Portugal.
- Najjar, R. G., M. Li, S. Kaushal, A. Lassiter, and A. Mejia. 2024. Prototyping decision support and monitoring tools for equitable management of salt contamination of water supplies in tidal rivers. Quarterly Meeting of the Chesapeake Bay Program Climate Resiliency Workgroup, August 15, 2024.
- Najjar, R. G., D. Tillman, A. Mejia, A. Izabayo, V. Pham, and M. Li, 2024. Identification and characterization of surface water intakes on the Chesapeake Bay. Chesapeake Bay Program Modeling Workgroup Quarterly Meeting, October 9, 2024.
- Li, M., R. Li, Y. Chen, J. M. Testa, W.-J. Cai, C. Shen. 2024. A modelling evaluation of the efficacy of wastewater alkalinity enhancement on mCDR and acidification mitigation in a large estuary. Presentation at 2024 Ocean Science Meeting. New Orleans.

- Li, R., M. Li, M. Scaboo, J.M. Testa, W-J. Cai, T. DeVries. 2024. Short-term variability and ventilation of bottom pH in a stratified estuary. Presentation at 2024 Ocean Science Meeting. New Orleans.
- Chen, Y., M. Li, P. M. Glibert and C. Heil. 2024. Plankton response to Hurricane Ian (2022) on the West Florida Shelf. Presentation at 2024 Ocean Science Meeting. New Orleans.
- Stefanak, M., M. Li, T.E. Murphy, J.M. Testa, R.J. Woodland. 2023. The Chesapeake Bay plume as a driver of coastal benthic productivity and community structure. Presentation at 2023 CERF biennial conference.
- Li, M. 2023. Impacts of climate change on coastal flooding in the Dorchester County, Maryland. Summer Talks with the Horn Point Lab – a public seminar series at High Spot, Cambridge, MD.
- Li, M., Y. Guo, R. Li, J.M. Testa, W-J. Cai, C. Shen, S. Kaushal. 2023. River alkalization counters ocean acidification in driving estuarine pH trends. Talk at 2023 ASLO Aquatic Sciences Meeting, Palma de Mallorca, Spain.
- Li, M. 2023. Coastal water quality decline at the nexus of climate change and eutrophication. Invited keynote speech at the China-Portugal Forum on Coastal Environment and Innovative Technology for Sustainable Develop (CPCET 2023). Macau University of Science and Technology, Macau.
- Li, M., Y. Guo, J.M. Testa, W-J. Cai, R. Li and C. Shen. 2023 Discerning the roles of ocean acidification, eutrophication and river alkalization in driving long-term pH trends in Chesapeake Bay. Talk at NOAA Ocean Acidification Community Meeting and Mini Symposium. Scripps Seaside Forum, La Jolla, C.A.
- Li, M. 2022. Climate change, coastal inundation and coastline management strategies. Invited talk at Maryland Commission on Climate Change Science and Technical Group Meeting.
- Chen, Y., M. Li, P.M. Glibert and C. Heil. 2022. A coupled hydrodynamic-biogeochemical model for *Karenia brevis* blooms on the West Florida Shelf. Talk at US HAB 11th Symposium.
- Li, M., Y. Chen, F. Zhang, Y. Song, P.M. Glibert and D. Stoecker. 2022. A three-dimensional mixotrophic model of *Karlodinium veneficum* blooms in a eutrophic estuary. Talk at 2022 Ocean Science Meeting.
- Li., R. and M. Li. 2022. Non-hydrostatic simulation of internal solitary waves in an idealized coastal plain estuary. Talk at Ocean Science Meeting 2022.

- Li, M., P.M. Glibert. 2021. A mixotrophic model for toxigenic *Karlodinium veneficum* Blooms in Chesapeake Bay. Invited seminar at the NOAA Seminar Series.
- Li, M., Y. Chen, F. Zhang, Y. Song, P.M. Glibert. 2021. Development of a three-dimensional mixotrophic model for *Karlodinium veneficum* in Chesapeake Bay. Talk at 2021 CERF biennial conference.
- Glibert, P.M., C. Heil, B. Sobrinho, M. Li, C.J. Madden. 2021. Oceanic climate variability and algal blooms in Florida. Talk at 2021 CERF biennial conference.
- Heil, C.A., S. Amin, P.M. Glibert, K. Hubbard, M. Li, J. Martinez, R. Weisberg. 2021. Examination of the factors driving *Karenia brevis* bloom expansion and termination: The ECOHAB: Life and Death of K. brevis Blooms Program. Talk at 2021 ICHA (19th International Conference on Harmful Algae).
- Sobrinho, B., P.M. Glibert, V. Lyubchich, C.A. Heil, M. Li. 2021. Time series analysis of the *Karenia brevis* blooms on the West Florida Shelf: relationships with El Niño – Southern Oscillation (ENSO) and its rate of change. Presentation at 2021 ICHA.
- Li, M. 2021. Impacts of sea level rise and storm surge on Maryland – Opportunities for nature based solutions for coastal protection. Invited talk at Cecil County Green Infrastructure Planning Nature Based Solutions Workshop.
- Hall, N.A., J.M. Testa, M. Li and H.W. Paerl. 2021. Assessing global versus local drivers of estuarine pH using long term records from U.S.A. two largest estuaries. ASLO summer Aquatic Sciences Meeting.
- Li, M. 2020. Opportunities and challenges in building coastal resiliency in estuaries and bays under a changing climate. Invited talk at IAHR (International Association for Hydro-Environment Engineering and Research) 85th Anniversary Summit.
- Li, M. 2020. Fighting surging seas in a changing climate: defending coastlines at all costs or strategic retreat to high ground? Talk at the virtual seminar series on Assessing Coastal Risks and Enhancing Resilience, HPL.
- Li, M. 2020. Impacts of climate change on coastal inundation, hypoxia, acidification and harmful algal blooms in Chesapeake Bay. Invited seminar at IMET.
- Li, M. 2020. Impacts of climate change and coastline management on inundation in Baltimore and Chesapeake Bay. Invited talk at Baltimore Urban Waters Flood Workshop: Bridging the gaps between science and regulation.
- Li, M., Y. Guo, W-J Cai, J. Testa, C. Shen, W. Ni and G.G. Waldbusser. 2020. Climate downscaling projections of estuarine acidification and hypoxia in Chesapeake Bay in the 21st century. Oral presentation at 2020 Ocean Science Meeting, San Diego.

- Li, R. and M. Li. 2020. Modeling the generation of internal waves by lateral circulation in an idealized estuary with channel-shoal bathymetry. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- Ni, W., M. Li and J. Testa. 2020. Discerning effects of warming, sea level rise and nutrient reduction on long-term hypoxia trend in Chesapeake Bay. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- St-Laurent, P., M.A.M. Friedrichs, M. Li and W. Ni. 2020. Effects of sea level rise on the seasonal hypoxia of Chesapeake Bay. Oral presentation at 2020 Ocean Science Meeting, San Diego.
- Glibert, P.M., M. Li, F. Zhang, Y. Song and M. Lin. 2020. Modeling mixotrophic *Karlodinium veneficum* in Chesapeake Bay. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- Zhang, F., M. Li, P.M. Glibert, S-H. Ahn. 2020. A mechanistic model to predict seasonal timing and spatial distribution of *Prorocentrum* minimum blooms in Chesapeake Bay. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- Gimenez Calvo, I., G.G. Waldbusser, J.M. Testa, M. Li, W-J. Cai, W.M. Kemp, J. Cornwell. 2020. Alkalinity fluxes on a Chesapeake Bay restored oyster reef: Results from intact core incubations under normal and moderately acidified experimental conditions. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- Ross, A., C.A. Stock, K.W. Dixon, M.A.M. Friedrichs, R.R. Hood, M. Li. L. Pegion, V.S. Saba, G.A. Vecchi. 2020. Estuarine forecasts at weather to subseasonal scales. Poster presentation at 2020 Ocean Science Meeting, San Diego.
- Li, M. 2019. Coastline management in low-lying areas affect tidal range and storm surge throughout Chesapeake Bay. Invited talk at the workshop on Use of dredged material to protect low-lying areas of the Chesapeake Bay.
- Li, M. 2019. Predicting seasonal timing and spatial distribution of *Prorocentrum minimum* and *Karlodinium veneficum* blooms in Chesapeake Bay. Invited talk at NASA Chesapeake Bay water quality modelling workshop.
- Zhao, J. and M. Li. 2019. The atmospheric and oceanic patterns linked to the recent sea level changes along Mid-Atlantic Bight and northeast coast. Poster presentation at CLIVAR workshop on sea level hotspots from Florida to Maine: drivers, impacts, and adaptation.
- Glibert, P.M., M. Li, F. Zhang, W. Ni and C-H Lin. 2019. Climate-induced interannual variability and long-term change in several common HABs of Chesapeake Bay. Talk at 2019 CERF biennial conference.

- Testa, J.M., C. Shen, W.J. Cai, M. Li and M. Kemp. 2019. Ecosystem metabolism and carbon balance in Chesapeake Bay: a 20-year modelling study. Talk at 2019 CERF biennial conference.
- Ross, A., C. Stock, K. Dixon, M. Friedrichs, R. Hood, M. Li, K. Pegion, G. Vecchi, V. Saba. 2019. Drivers and predictability of subseasonal variations of dissolved oxygen in Chesapeake Bay. Talk at 2019 CERF biennial conference.
- St. Laurent, P., M. Friedrichs, M. Li, W. Ni. 2019. Impacts of sea level rise on Chesapeake Bay and its seasonal hypoxia. Talk at 2019 CERF biennial conference.
- Glibert, P.M., M. Li, F. Zhang, W. Ni and C-H Lin. 2019. Climate-induced interannual variability and long-term change in several common HABs of Chesapeake Bay. Talk at the 10th US Symposium on harmful algae.
- Rose, K.A., M. Li, J. Zhao, E. Curchitser and J. Fiechter. 2019. Predicting climate change effects on marine and coastal fish using coupled bio-physical models: challenges and opportunities. Invited talk at 2019 ASLO meeting.
- Li, M., F. Zhang, S. Barnes and X. Wang. 2018. Impacts of sea level rise and ocean warming on storm surge and coastal inundation in the mid and late 21st century. Presentation at 2018 American Geophysical Union Fall Meeting.
- Ni, W. and M. Li. 2018. Modeling study of the physical and biogeochemical controls on long-term change of Chesapeake Bay hypoxia during 1985-2016. Presentation at 2018 American Geophysical Union Fall Meeting.
- Li, M. 2018. Climate downscaling projections for estuarine hypoxia and acidification using coupled hydrodynamic-biogeochemical models. Invited talk at NSF workshop on the future of coastal and estuarine modeling.
- Li, M., X. Xie, C. Shen, B. Chen, W. Ni, W-J Cai, and J. Testa. 2018. Physically driven temporal and spatial variabilities in carbonate chemistry dynamics. 2018 Chesapeake Research and Modeling Symposium.
- Ni, W., M. Li, A. Ross, R. Najjar, M. Wagena, and Z. Easton. 2018. Climate downscaling projections of Chesapeake Bay hypoxia in the 21st century. 2018 Chesapeake Research and Modeling Symposium.
- Li, M. and X. Xie. 2018. Generation of internal solitary waves in a coastal plain estuary. 2018 Ocean Science Meeting.
- Zhang, F. and M. Li. 2018. Surface cooling on the continental shelf induced by near-inertial currents during Hurricane Arthur (2014). 2018 Ocean Science Meeting.

- Ross, A., R. Najjar, M. Li, S. Lee, F. Zhang and W. Liu. 2018. Evidence of changing tides in response to sea-level rise in Chesapeake and Delaware Bays. 2018 Ocean Science Meeting.
- Palinkas, C., J. Cornwall, L. Sanford, M. Li and J. Testa. 2018. Processes and management of altered estuaries in the era of Anthropocene. 2018 Ocean Science Meeting.
- Ni, W., M. Li, A. Ross and R. Najjar. 2018. Projections of Chesapeake Bay hypoxia under regional climate change in the twenty-first century. 2018 Ocean Science Meeting.
- Glibert, P.M., M. Li, M.C. Lin and W. Ni. 2017. Development of a Mechanistic ROMS-RCA-HAB Model for Predicting *Prorocentrum minimum* and *Karlodinium veneticum* Blooms in Chesapeake Bay. 9th U.S. symposium on harmful algal blooms.
- Li, M., F. Zhang and X. Wang. 2017. Development of a regional atmosphere-ocean modeling system for predicting and visualizing storm surge and coastal inundation in a changing climate. 24th Biennial Conference of Coastal and Estuarine Research Foundation.
- Ni, W., Li, M., A. Ross and R. Najjar. 2017. Downscaling climate projections for Chesapeake Bay hypoxia in the mid-21st century. 24th Biennial Conference of Coastal and Estuarine Research Foundation.
- Boesch, D., Z. Johnson and M. Li. 2017. Scientific Guidance for Rehabilitation of the Chesapeake Bay Ecosystem under the Changing Climate. AGU Fall Meeting.
- Li, M., W. Liu, R. Chant and A. Valle-Levinson. 2016. Flood-ebb and spring-neap variations of lateral circulation in the James River estuary. 2016 Ocean Science Meeting.
- Lee, S.B., M. Li and F. Zhang. 2016. The effect of sea level rise on tidal dynamics in Chesapeake and Delaware Bays. 2016 Ocean Science Meeting.
- Zhang, F., T. Miles, M. Li and X. Xie. 2016 Near inertial waves generated by Hurricane Arthur on the Mid-Atlantic-Bight shelf. 2016 Ocean Science Meeting.
- Xie, X., T. Miles, M. Li and X. Xie. 2016 Near inertial waves generated by Hurricane Arthur on the Mid-Atlantic-Bight shelf. 2016 Ocean Science Meeting.
- Huguenard, K., A. Valle-Levinson, M. Li, R. Chant, A. Souza. 2015. Influence of tidal mixing asymmetries on residual exchange flow in the James River estuary. Presentation at CERF Biennial Conference, Portland, Oregon.
- Liu, W., M. Li and A. Ross. 2015. Study of climatic impacts on Chesapeake Bay and Delaware Bay by the approach of numerical models and statistical methods.

Presentation at the Gordon Research Conference on Coastal Ocean Modeling, Biddeford, ME.

- Zhang, F., M. Li, S. Lee and Andrew Ross. 2015. Numerical simulation of storm surge generated by Hurricane Arthur with an air-sea coupled model. American Meteorological Society Annual Meeting, 13th Symposium on the Coastal Environment, Phoenix, AZ.
- Xie, X., M., Li, and W. C. Boicourt. 2014. Observations and simulations of wind-driven lateral circulation in Chesapeake Bay. Presentation at American Geophysical Union Fall Meeting, San Francisco, California.
- Li, M., J. Testa, Y. Lee, Y. Li and W.M. Kemp. 2014. Impacts of climate variability and extreme weather events on hypoxia in Chesapeake Bay. Talk at Symposium on Low Oxygen Environments in Marine, Estuarine and Fresh Waters, Liege, Belgium.
- Testa, J., Y. Lee, M. Li and W.M. Kemp. 2014. Quantifying biological and physical controls on dissolved oxygen in Chesapeake Bay using a coupled hydrodynamic-biogeochemical model. Talk at Symposium on Low Oxygen Environments in Marine, Estuarine and Fresh Waters, Liege, Belgium.
- Li, M. 2014. Impacts of climate change and extreme weather events on Mid-Atlantic Estuaries. Invited seminar at Department of Atmospheric and Oceanic Science, University of Maryland, College Park.
- Cheng, P., M. Li, A. Ross and R. Najjar. 2014. Modeling Chesapeake and Delaware Bays by downscaling from Mid-Atlantic Ocean into estuaries. Ocean Science Meeting, Honolulu, Hawaii.
- Ross, A., M. Li, R. Najjar and M. Herrmann. 2014. High-resolution simulations of Chesapeake and Delaware Bays under past and future climates. Ocean Science Meeting, Honolulu, Hawaii.
- Li, M. 2014. Impacts of extreme weather events on plankton productivity and hypoxia in Chesapeake Bay. Ocean Science Meeting, Honolulu, Hawaii.
- Li, M. 2013. Impacts of climate change and extreme weather events on coastal oceans. Invited seminar at Department of Atmospheric Science, University of California, Los Angeles.
- Li, M. 2013. Issues in inundation modeling. Invited talk at CINAR workshop. Woods Hole Oceanographic Institution.
- Cheng, P., M. Li, and R. Chant. 2012. The role of lateral advection in residual dynamics of tidal estuaries. 2012 PECS (Physics of Estuaries and Coastal Seas) Symposium, New York City, New York.

- Li, M., Y. Li, P. Cheng, W. Liu, R. Chant, and A. Valle-Levinson. 2012. Vorticity dynamics of secondary circulations in idealized and realistic estuaries. 2012 PECS (Physics of Estuaries and Coastal Seas) Symposium, New York City, New York.
- Li, Y. and M. Li. 2012. Dynamics of wind-induced lateral circulation and its effects on estuarine exchange flow and stratification. Presentation at 2012 Ocean Science Meeting, Salt Lake City, Utah.
- Cheng, P., M. Li and R. Najjar. 2012. Estuarine response to sea-level rise: a numerical study of Chesapeake and Delaware Bays. Presentation at 2012 Ocean Science Meeting, Salt Lake City, Utah.
- Li, M. 2011. Dynamics of Changjiang River plume in the East China and Yellow Seas. Talk at 2011 MABPOM meeting, Cambridge, Maryland.
- Li, M., Y. Li and R. Najjar. 2010. Response of Chesapeake Bay to climatic forcing. Invited Talk at Ocean Science Meeting, Portland, Oregon.
- Valle-Levinson, A., R. Chant and M. Li. 2010. Relative role of Coriolis and advective accelerations on the dynamics of a coastal plain estuary. Invited talk at Ocean Science Meeting, Portland, Oregon.
- Li, Y. and M. Li. 2010. Modeling hypoxia response to river flow and wind forcing in Chesapeake Bay. Talk at Ocean Science Meeting, Portland, Oregon.
- Peng, J. and M. Li. 2010. Effects of wind on a shallow lagoonal estuary. Talk at Ocean Science Meeting, Portland, Oregon.
- Wang, D. and M. Li. 2010. Dynamics of seasonal circulation pattern off Vietnam coast in South China Sea. Talk at Ocean Science Meeting, Portland, Oregon.
- Li, M. 2009. Impact of climate change and extreme weather events on estuaries and coastal oceans - The Chesapeake Bay example. Invited Talk at Second NSF-NSFC US-China Exchange to Explore Research Cooperation on Climate Change, Baltimore.
- Harding, L.W. Jr., M. Li and H. Paerl. 2008. Climatic perturbations of phytoplankton dynamics in Mid-Atlantic estuaries. Invited Talk at American Geophysical Union Fall Meeting, San Francisco.
- Li, M., Y. Li and R. Najjar. 2008. How does sea-level rise affect stratification and circulation in Chesapeake Bay? Talk at American Geophysical Union Fall Meeting, San Francisco.
- Li, M., L. Zhong, Senthil Radhakrishnan, Ugo Piomelli and Rocky Geyer. 2008. Large Eddy Simulations of estuarine mixing processes. Talk at Ocean Science Meeting,

Orlando, Florida.

Rong, Z., M. Li and Y. Liu. 2008. How Does Changjiang River Plume Spread in East China and Yellow Sea? Presentation at Ocean Science Meeting, Orlando, Florida.

Li, M. 2008. How will climate change and extreme weather events affect Chesapeake Bay? Invited talk at Chesapeake Bay Modeling Symposium, Annapolis, Maryland.

Piomelli, U., S. Radhakrishnan, L. Zhong and M. Li . 2007. Wall-layer models for large-eddy simulations of high-Reynolds number non-equilibrium flows. Invited talk at the 11th European Turbulence Conference, Porto, Portugal.

Li, M. 2007. How does turbulent mixing affect circulation in Chesapeake Bay? Invited seminar at Johns Hopkins University.

Li, M. 2007. Large Eddy Simulations of turbulent oceanic flows. Invited seminar at Fluid Dynamics Reviews Seminars of the Burgers Program, University of Maryland at College Park.

Li, M. 2006. How do surface waves affect dynamics of the ocean surface mixed layer? Invited seminar at University of Delaware, Newark, Delaware.

Li, M. 2006. Hurricane-induced storm surges, destratification and restratification in Chesapeake Bay. Invited seminar at University of Delaware, Newark, Delaware.

Li, M. 2006. Which is more important in driving/mixing Chesapeake Bay? Tide or wind? Invited seminar at Woods Hole Oceanographic Institution.

Li, M. 2005. Development of a coupled hydrodynamic-biogeochemical model for Chesapeake Bay. Invited seminar at University of Maryland, College Park, Maryland.

Li, M. 2005. Modeling turbulent large eddies in the upper ocean. Invited talk at ONR Northeast Site Review workshop, New Brunswick, New Jersey.

Li, M. 2005. Development of a new coupled hydrodynamic-biogeochemical model for ecological forecasting in Chesapeake Bay. Invited talk at EPA workshop on Ecological forecasting for Chesapeake Bay, Annapolis, Maryland.

XI. Awards and Honours

Fulbright U.S. Scholar (2024)

President's Award for Excellence in Application of Science (2023)

UMCES Nominee for the University System of Maryland Board of Regents Faculty Award (2021, 2026)

Honorable mention for R.E. FOERSTER Award for the Best Paper in the Department of Fisheries and Oceans of Canada (2000)

Scholarship Award from K.C. Wong Education Foundation (1987-1990)

XII. Professional memberships

American Geophysical Union

American Meteorological Society

Oceanographic Society

American Association for the Advancement of Science

Association for the Sciences of Limnology and Oceanography

Coastal and Estuarine Research Federation