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RELEVANT EXPERIENCE

I have extensive experience in the analysis and application of satellite and airborne observations, in-situ data, and model simulations to study synoptic to decadal changes in the marine environment, with specific focus on biophysical interactions, ecosystem dynamics, and carbon fluxes. My current research ranges in scale from the open ocean, investigating the influence of submesoscale ocean dynamics on upper ocean biology, to coastal and inland waters, assessing variability in water quality and the current condition of coral reefs.

EDUCATION

Ph.D., Marine Science, University of South Carolina, 2009
M.S., Meteorology, Florida State University, 2006
B.S., Meteorology, Florida State University, 2004

PROFESSIONAL EXPERIENCE

Group Supervisor, Biosphere, JPL, 2025 – present
Principal Scientist, Earth Science Section, JPL, 2023 – present
Earth Science and Technology Associate Directorate Scientist, 2023 – 2025
Deputy Mission Scientist, NASA Surface Biology and Geology mission, 2022 – 2024
Carbon Cycle and Ecosystems Discipline Program Manager, 2022 – 2023
Co-Lead, NASA Surface Biology and Geology Pathfinder study, 2020 – 2024
Project Manager, NASA EVS-2 CORAL Reef Airborne Laboratory (CORAL) mission, 2018 – 2019
Project Scientist, NASA EVS-2 CORAL Reef Airborne Laboratory (CORAL) mission, 2015 – 2019
Project Scientist, NASA Physical Oceanography Data Center (PO.DAAC), 2011 – 2021
Scientist, Earth Science Section, JPL, 2011 – 2023
Postdoctoral Associate, Applied Marine Physics, RSMAS, University of Miami, 2009 – 2011

CURRENT FUNDED PROJECTS

PI JPL Topical Research & Technology Development (MIT Co-I), *Quantifying the Value of Remote Sensing for Multi-Stressor Decision Making*
PI NASA Earth Action, *Coastal Water Quality Activity*
Co-I NASA Multi-source Integrated Observatory (MIO), *Agricultural Pilot Prototype*
PI NASA Carbon Cycle Science, *A Land to Sea Paradigm: Impact of Spatially and Temporally Varying Nutrient and Freshwater Fluxes on Coastal Carbon Dynamics in the northern Gulf of Mexico*
PI NASA Ocean Biology and Biogeochemistry, *Impact of Spatially and Temporally Varying Thermal Stress on Reef Functional Diversity*

PAST FUNDED PROJECTS

PI JPL Strategic Research & Technology Development, *An Architecture for Science and Applications Needs at the Coastal Interface – The Fulcrum of Lateral Exchanges between Land and Sea*
PI JPL Strategic University Research Partnership with University of California, Los Angeles, *Automated Mapping of Kelp Forest Productivity for Carbon Storage Estimation*
Co-I NASA Interdisciplinary Research in Earth Science, *Impacts of Changing Sea Ice Regimes on Arctic Ocean Biology*
Co-I NASA Earth Venture Suborbital-3, *S-MODE: Sub-Mesoscale Ocean Dynamics Experiment*

- PI** JPL Strategic University Research Partnership with Carnegie Mellon University, *Automated mapping and planning to improve assessment of coral reef health*
- Co-I** NASA Sustaining Living Systems in a Time of Climate Variability and Change, *Identifying coral refugia from observationally weighted climate model ensembles*
- Co-I** NASA Science Team for the OCO Missions, *Observing and validating carbon-climate feedbacks with OCO-2*
- Co-I** NASA Applied Sciences – Water Resources, *Maximizing utility of remote sensing data for water quality monitoring and resources management in California’s water systems*
- Co-I** NASA Biodiversity, *Scoping study for biodiversity airborne campaigns*
- Co-I** NASA Earth Venture Suborbital-2, *CORAL: Coral Reef Airborne Laboratory*
- PI** NASA Rapid Response, *Rapid Response to the ORCAS Campaign*
- Co-I** NASA OCO-2 Science Team, *Operations and data products for carbon-climate feedbacks using OCO-2*
- Co-I** JPL Strategic Research & Technology Development, *Under Ice-Shelf Ocean Exploration*
- Co-I** JPL Strategic Research & Technology Development, *Adaptive AUV In-Situ Sensing and Analysis System*
- Co-I** NASA Physical Oceanography, *Seasonal evolution of the coastal thermal front and small eddies in the Great Lakes as characterized by satellite SST and SAR imagery and numerical modeling*
- PI** NASA Ocean Biology and Biogeochemistry, *Variation in phytoplankton composition associated with ENSO diversity in the Equatorial Pacific Ocean*
- PI** NASA New (Early Career) Investigator Program in Earth Science, *Impact of ENSO diversity on biophysical processes in the Tropical and North Pacific Ocean*
- PI** NASA South Carolina Space Grant Consortium Graduate Student Research Program Fellowship, *Hurricane contribution to air-sea fluxes of CO₂*

AWARDS

- NASA Exceptional Public Achievement Medal, 2024
- JPL Team Award, Surface Biology and Geology (SBG) Pre-Formulation Team, 2023
- JPL Voyager Award, SBG SISTER, 2022
- JPL Team Award, SHIFT campaign, 2022
- NASA Group Achievement Award, CORAL Mission Team, 2020
- NASA Group Achievement Award, OCO-2 Science Team, 2018
- NASA Exceptional Public Achievement Medal, 2018
- Florida State University Reubin O’D. Askew Young Alumni Award, 2016
- Florida State University Notable Noles, 2016
- JPL Lew Allen Award for Excellence, 2015
- NASA Early Career Achievement Medal, 2013
- Dean's Award for Excellence in Graduate Study, 2009

REFEREED PUBLICATIONS

In Preparation

1. Espinoza, V., I. Galdamez, C. Blackwood, A. Lopez, B. Holt, **M.M. Gierach**, L. Hart, A. Chan, and C.M. Lee, 2026: Satellites are critical national assets for monitoring post-fire hazard impacts in coastal waters following early 2025 Palisades Fire, in prep.

Submitted/In Revision

2. Jiang, R., **M.M. Gierach**, K. Luis, R. Shah, E. Urquhart, 2026: Bridging scales and stakeholders: Support for an Integrated Systems approach to national coastal resource management, *Earths Future*, submitted.
3. Miner, K.M., J. Rolla, **M.M. Gierach**, J. Rolla, S. Schollaert Uz, R. Peters, D. Limonadi, and N. Sadoff, 2025: An impact readiness scale to assess the benefits of Earth science data for society, *AGU Advances*, in revision.
4. Schimel, D., A. Baresch, A. Chlus, P. Townsend, F. Schneider, L. Vagio, **M.M. Gierach**, B. Poulter, 2025: A pan-tropical baseline for functional diversity from space, *PNAS*, in revision.

5. Oubanas, H., C.H. David, E. Collins, J. Wade, C. Emery, G.H. Allen, A. Cerbelaud, Z.-L. Yang, and **M.M. Gierach**, 2025: Enhancing Continental-Scale River Discharge Estimates with Wide-Swath Satellite Data Assimilation, *Water Resources Research*, submitted.
6. Lopez, A.M., C.M. Lee, E.L. Hestir, L.A. Berberian, C. Blackwood, and **M.M. Gierach**, 2024: Coastal resilience in the face of increasing wildfires: a land-sea perspective, *Nature Water*, submitted.

Published

7. LaHaye, N., K. Luis, and **M.M. Gierach**, 2026: Fusing multi- and hyperspectral satellite data for harmful algal bloom monitoring with self-supervised and hierarchical deep learning, *Earth and Space Science*, accepted.
8. Bohn, N., E. Greenberg, P. Brodrick, J. Chapman, R. Eckert, **M.M. Gierach**, R.O. Green, M. Konig, J. Kravitz, K. Luis, J. Susiluoto, and D.R. Thompson, 2025: Simultaneous modeling of water leaving reflectance and sun and sky glint contributions from imaging spectroscopy measurements, *Applied Optics*, 64(30), 9094-9105.
9. Estrela, R., D.R. Thompson, P. Brodrick, D. Chadwick, **M.M. Gierach**, K. Luis, R. Green, and M. Swain, 2025: Global-scale detection of plastic from space with the EMIT imaging spectrometer, *Geophysical Research Letters*, doi:10.1029/2024GL112416.
10. Pan, B., **M.M. Gierach**, S. Stammerjohn, O. Schofield, M.P. Meredith, R.A. Reynolds, M. Vernet, A. Haumann, A.J. Orona, and C.E. Miller, 2025: Impact of Glacial Meltwater on Phytoplankton Biomass along the Western Antarctic Peninsula, *Nature Communications Earth and Environment*, doi:10.1038/s43247-025-02435-6.
11. Chadwick, K., et al., 2025: Unlocking ecological insights from subseasonal visible to shortwave infrared imaging spectroscopy: The SHIFT campaign, *Ecosphere*, 16(3), doi:10.1002/ecs2.70194.
12. Wade, J., C. David, E. Collins, M. Denbina, A. Cerbelaud, M. Tom, J. Reager, J. Famiglietti, T. Lee, and **M.M. Gierach**, 2025: Intrinsic spatial scales of river stores and fluxes and their relative contributions to the global water cycle, *Geophysical Research Letters*, doi:10.1029/2024GL113052.
13. Dierssen, H., **M.M. Gierach**, L. Guild, A. Mannino, J. Salisbury, S. Schollaert Uz, J. Scott, P. Townsend, K. Turpie, M. Tzortziou, E. Urquhart, R. Vandermeulen, and J. Werdell, 2023: Synergies between NASA's Hyperspectral Aquatic Missions PACE, GLIMR, and SBG: Opportunities for new science and applications, *Geophysical Research - Biogeosciences*, doi:10.1029/2023JG007574.
14. Pan, B., **M.M. Gierach**, M.P. Meredith, R.A. Reynolds, O. Schofield, and A.J. Orona, 2023: Remote Sensing of Sea Surface Glacial Meltwater on the Antarctic Peninsula Shelf, *Frontiers in Marine Science*, doi:10.3389/fmars.2023.1209159.
15. Luis, K., P. Köhler, C. Frankenberg, and **M.M. Gierach**, 2023: First light demonstration of red solar induced fluorescence for harmful algal bloom monitoring, *Geophysical Research Letters*, doi:10.1029/2022GL101715.
16. Raiho, A., K. Cawse-Nicholson, A. Chlus, J. Dozier, **M.M. Gierach**, K. Miner, S. Serbin, D. Schimel, F. Schneider, A. Shiklomanov, S. Skiles, D. Thompson, P. Townsend, S.-K. Zareh, and B. Poulter, 2023: Exploring mission design for imaging spectroscopy retrievals for land and aquatic ecosystems, *Journal of Geophysical Research: Biogeosciences*, doi:10.1029/2022JG006833.
17. Kalmus, P., A. Ekanayaka, E. Kang, M. Baird, and **M.M. Gierach**, 2022: Past the precipice? Projected coral habitability under global heating, *Earth's Future*, doi:10.1029/2021EF002608.
18. Carroll, D., D. Menemenlis, S. Dutkiewicz, J. Lauderdale, J.F. Adkins, K.W. Bowman, H. Brix, I. Fenty, **M.M. Gierach**, et al., 2022: Attribution of space-time variability in global-ocean dissolved inorganic carbon, *Global Biogeochemical Cycles*, doi:10.1029/2021GB007162.
19. Hochberg, E.J., and **M.M. Gierach**, 2021: Missing the reef for the corals: Unexpected trends between coral reef condition and the environment at the ecosystem scale, *Frontiers in Marine Science*, 8, doi:10.3389/fmars.2021.727038.

20. Candela, A., K. Edelson, **M.M. Gierach**, D.R. Thompson, G. Woodward, and D. Wettergreen, 2021: Using remote sensing and in situ measurements for efficient mapping and optimal sampling of coral reefs, *Frontiers in Marine Science*, 8, doi:10.3389/fmars.2021.689489.
21. Harringmeyer, J.P., K. Kaiser, D.R. Thompson, **M.M. Gierach**, C.L. Cash, and C.G. Fichot, 2021: Detection and sourcing of CDOM in urban coastal waters with UV-visible imaging spectroscopy, *Frontiers in Environmental Science*, doi:10.3389/fenvs.2021.647966.
22. Hausman, J., D. Moroni, M. Gangl, V. Zlotnicki, J. Vazquez-Cuervo, E.M. Armstrong, C. Oaida, **M.M. Gierach**, C. Finch, C. Schroeder, 2021: The evolution of the PO.DAAC: Seasat to SWOT, *Advances in Space Research*, 68, doi:10.1016/j.asr.2019.11.030.
23. Cawse-Nicholson, K., et al., 2021: NASA's Surface Biology and Geology Designated Observable: A Perspective on Surface Imaging Algorithms, *Remote Sensing of Environment*, 257, doi:10.1016/j.rse.2021.112349.
24. Sikder, M.D., M. Bonnema, C. Emery, C. David, P. Lin, M. Pan, S. Biancamaria, **M.M. Gierach**, 2021: A synthetic dataset inspired by satellite altimetry and impacts of sampling on global spaceborne discharge characterization, *Water Resources Research*, 57, doi:10.1029/2020WR029035.
25. Carroll, D., D. Menemenlis, **M. M. Gierach**, et al., 2020: The ECCO-Darwin data-assimilative global ocean biogeochemistry model: Estimates of seasonal to multi-decadal surface ocean pCO₂ and Air-sea CO₂ flux, *Journal of Advances in Modeling Earth Systems*, 12, doi:10.1029/2019MS001888.
26. Stavros, N.E., C. Oaida, J. Hausman, M. Srinivasan, H. Hua, M. Gangl, and **M.M. Gierach**, 2020: A Quantitative Framework to Inform Cloud Data System Architecture and Services Requirements Based on User Needs and Expected Demand, *IEEE Access*, 8, doi:10.1109/ACCESS.2020.3012054.
27. Fichot, G.G., K. Matsumoto, B. Holt, **M.M. Gierach**, K.S. Tokos, 2019: Assessing change in the overturning behavior of the Laurentian Great Lakes using remotely sensed lake surface water temperatures, *Remote Sensing of Environment*, 235, <https://doi.org/10.1016/j.rse.2019.111427>.
28. Thompson, D., K. Cawse-Nicholson, Z. Erickson, C.G. Fichot, C. Frankenberg, B.-C. Gao, **M.M. Gierach**, R. Green, D. Jensen, V. Natraj, A. Thompson, 2019: A unified approach to estimate land and water reflectances with uncertainties for coastal imaging spectroscopy, *Remote Sensing of Environment*, 231, doi:10.1016/j.rse.2019.05.017.
29. Erickson, Z., C. Frankenberg, D. Thompson, A. Thompson, **M.M. Gierach**, 2019: Remote sensing of chlorophyll fluorescence in the ocean using imaging spectrometry: Towards a vertical profile of fluorescence, *Geophysical Research Letters*, doi:10.1029/2018GL081273.
30. Liu, J., K. Bowman, D. Schimel, N. Parazoo, Z. Jiang, M. Lee, A. Bloom, D. Wunch, K. Gurney, D. Menemenlis, **M. M. Gierach**, D. Crisp, and A. Eldering, 2018: Response to Comment on "Contrasting carbon cycle responses of the tropical continents to the 2015-2016 El Nino", *Science*, 362, doi:10.1126/science.aat1211.
31. Stephens, B., et al., 2018: The O₂/N₂ Ratio and CO₂ Airborne Southern Ocean (ORCAS) Study, *Bulletin of American Meteorological Society*, doi:10.1175/BAMS-D-16-0206.1.
32. Fournier, S., J. Vialard, M. Lengaigne, T. Lee, **M.M. Gierach**, and A.V.S. Chaitanya, 2017: Modulation of the Ganges-Brahmaputra river plume by the Indian Ocean Dipole and eddies inferred from satellite observations, *Journal of Geophysical Research*, doi:10.1002/2017JC013333.
33. Fournier, S., D. Vandemark, L. Gaultier, T. Lee, B. Jonsson, and **M.M. Gierach**, 2017: Interannual variation in offshore advection of Amazon-Orinoco plume waters: observations, forcing mechanisms, and impacts, *Journal of Geophysical Research*, 122, 8966-8982, doi:10.1002/2017JC013103.
34. Chatterjee, A., **M. M. Gierach**, D. Crisp, A. Eldering, M. Gunson, C. O'Dell, B. Stephens, A. Sutton, and D. Schimel, 2017: Influence of El Niño on atmospheric CO₂ over the tropical Pacific Ocean: Findings from NASA's OCO-2 mission, *Science*, doi:10.1126/science.aam5776.
35. Liu, J., K. Bowman, D. Schimel, N. Parazoo, Z. Jiang, M. Lee, A. Bloom, D. Wunch, K. Gurney, D. Menemenlis, **M. M. Gierach**, D. Crisp, and A. Eldering, 2017: Contrasting carbon cycle responses of tropical continents to the 2015-16 El Niño, *Science*, doi:10.1126/science.aam5690.

36. Trinh, R. C., C. G. Fichot, **M. M. Gierach**, B. Holt, N. K. Malakar, G. Hulley, and J. Smith, 2017: Application of Landsat 8 for monitoring impacts of wastewater discharge on coastal water quality, *Frontiers in Marine Science*, doi:10.3389/fmars.2017.00329.
37. Bowman, K., J. Liu, A. Bloom, N. Parazoo, M. Lee, Z. Jiang, D. Menemenlis, **M. M. Gierach**, G.J. Collatz, and K. Gurney, 2017: Global and Brazilian carbon response to El Niño Modoki 2011-2010, *Earth and Space Science*, 4, 637-660, doi:10.1002/2016EA000204.
38. Thompson, D. M., E. Hochberg, G. P. Asner, R. O. Green, D. Knapp, B. C. Gao, R. Garcia, **M. M. Gierach**, Z. Lee, and S. Maritorena, 2017: Airborne Mapping of Benthic Reflectance Spectra with Bayesian Linear Mixtures, *Remote Sensing Environment*, 200, 18-30, doi:10.1016/j.rse.2017.07.030.
39. Holt, B., R. C. Trinh, and **M. M. Gierach**, 2017: Stormwater Runoff Plumes in the Southern California Bight: A Comparison Study with SAR and MODIS Imagery, *Marine Pollution Bulletin*, 118, 141-154, doi:10.1016/j.marpolbul.2017.02.040.
40. **Gierach, M. M.**, B. Holt, R. Trinh, B. Pan, and C. Rains, 2017: Satellite detection of wastewater diversion plumes in southern California. *Estuarine, Coastal and Shelf Science*, 186, 171-182, doi:10.1016/j.ecss.2016.10.012.
41. Basnayake, R., E. Bollt, N. Tuffiaro, J. Sun, and **M. M. Gierach**, 2017: Regularization destriping of remote sensing imagery. *Nonlinear Processes in Geophysics*, doi:10.5194/npg-2016-74.
42. Fournier, S., J. T. Reager, T. Lee, J. Vazquez-Cuervo, C. H. David, and **M. M. Gierach**, 2016: SMAP observes flooding from land to sea: The Texas event of 2015, *Geophysical Research Letters*, doi:10.1002/2016GL070821.
43. Fournier, S., T. Lee, and **M. M. Gierach**, 2016: Seasonal and interannual variations of sea surface salinity associated with the Mississippi River plume observed by SMOS and Aquarius, *Remote Sens. Environ.*, 180, 431-439, doi:10.1016/j.rse.2016.02.050.
44. Fichot, C. G., B. Downing, B. Bergamaschi, L. Windham-Myers, M. Marvin-DiPasquale, D. R. Thompson, and **M. M. Gierach**, 2016: High-resolution remote sensing of water quality in the San Francisco Bay-Delta Estuary, *Environmental Science and Technology*, 50(2), 573–583, doi:10.1021/acs.est.5b03518.
45. Thompson, D. R., F. C. Seidel, B. C. Gao, **M. M. Gierach**, R. O. Green, R. M. Kudela, and P. Mouroulis, 2015: Optimizing irradiance estimates for coastal and inland water imaging spectroscopy. *Geophys. Res. Lett.*, 42, doi:10.1002/2015GL063287.
46. Lee, T., G. Lagerloef, H.-Y. Kao, M. J. McPhaden, J. Willis, **M. M. Gierach**, 2014: The influence of salinity on Tropical Atlantic instability waves and eddies. *J. Geophys. Res.*, 119(12), 8375-8394, doi:10.1002/2014JC010100.
47. **Gierach, M. M.**, M. Messié, T. Lee, K. B. Karnauskas, and M.-H. Radenac, 2013: Biophysical Responses near Equatorial Islands in the Western Equatorial Pacific Ocean during El Niño/La Niña Transitions. *Geophys. Res. Lett.*, 40(20), 5473-5479, doi:10.1002/2013GL057828.
48. **Gierach, M. M.**, J. Vazquez, T. Lee, V. Tsontos, 2013: Aquarius and SMOS detect effects on an extreme Mississippi River flooding event in the Gulf of Mexico, *Geophys. Res. Lett.*, 40(19), 5188-5193, doi:10.1002/grl.50995.
49. Lee, T., D. E. Waliser, J. F. Li; F. W. Landerer, and **M. M. Gierach**, 2013: Evaluation of CMIP3 and CMIP5 Wind Stress Climatology Using Satellite Measurements and Atmospheric Reanalysis Products. *J. Clim.*, 26(16), 5810-5826, doi:http://dx.doi.org/10.1175/JCLI-D-12-00591.1.
50. Lee, T., G. Lagerloef, **M. M. Gierach**, H.-Y. Kao, S. Yueh, and K. Dohan, 2012: Aquarius reveals salinity signature of tropical instability waves. *Geophys. Res. Lett.*, 39, L12610, doi:10.1029/2012GL052232.
51. **Gierach, M. M.**, T. Lee, D. Turk, and M.J. McPhaden, 2012: Biological response to the 1997-98 and 2009-10 El Niño events in the equatorial Pacific Ocean. *Geophys. Res. Lett.*, 39, L10602, doi:10.1029/2012GL051103.
52. **Gierach, M. M.**, H. C. Graber, and M. J. Caruso, 2012: SAR-derived gap jet characteristics in the lee of the Philippine Archipelago. *J. Remote Sens. Environ.*, 117, 289-300.
53. **Gierach, M. M.**, B. Subrahmanyam, and P. G. Thoppil, 2009: Physical and biological responses to Hurricane

Katrina (2005) in a 1/25° nested Gulf of Mexico HYCOM. *J. Mar. Syst.*, 78, 168-179.

54. **Gierach, M. M.**, B. Subrahmanyam, A. Samuelsen, and K. Ueyoshi, 2009: Hurricane-driven alteration in plankton community size structure in the Gulf of Mexico: A modeling study. *Geophys. Res. Lett.*, 36, L07604, doi:10.1029/2009GL037414.
55. **Gierach, M. M.**, and B. Subrahmanyam, 2008: Biophysical responses of the upper ocean to major Gulf of Mexico hurricanes in 2005. *J. Geophys. Res. Oceans*, 113, C04029, doi:10.1029/2007JC004419.
56. **Gierach, M. M.**, and B. Subrahmanyam, 2007: “Global ocean color and phytoplankton”, State of the Climate in 2006. *Bull. Amer. Meteor. Soc.*, 88, S43-S45.
57. **Gierach, M. M.**, and B. Subrahmanyam, 2007: Satellite data analysis of the upper ocean response to Hurricanes Katrina and Rita (2005) in the Gulf of Mexico. *IEEE Geosci. Remote Sens. Lett.*, 4, 132-136.
58. **Gierach, M. M.**, M. A. Bourassa, P. Cunningham, J. J. O’Brien, and P. D. Reasor, 2007: Vorticity-based detection of tropical cyclogenesis. *J. Appl. Meteor. Climatol.*, 46, 1214-1229.

OTHER PUBLICATIONS

1. RTI Report, 2026: Understanding Coastal Water Quality User Communities. 52pp., [available online](#).
2. Capotondi, A., V.J. Coles, S. Clayton, M. Friedrichs, **M.M. Gierach**, A.J. Miller, and C. Stock, 2024: Daily to Decadal Ecological Forecasting Along North American Coastlines Workshop Report. 54pp. <https://doi.org/10.1575/1912/70991>.
3. National Academies of Sciences, Engineering, and Medicine. 2021. *Reckoning with the U.S. Role in Global Ocean Plastic Waste*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26132>.
4. Pavelsky, T. M., C. H. David, J. D. Bales, **M.M. Gierach**, L. Giosan, M. P. Lamb, C. J. Legleiter, J. M. Melack, F. E. Muller-Karger, J. E. Richey, E. Rodriguez, M. Simard, and L. C. Smith, 2015: From the Mountains to the Sea: Interdisciplinary Science and Applications Driven by the Flow of Water, Sediment, and Carbon, 2017-2017 *Decadal Survey for Earth Science and Applications from Space of the National Academies of Sciences, Engineering and Medicine*, Request for Information, submitted on 2015-11-02, [available online](#).
5. Pavelsky, T. M., C. H. David, R. O. Green, S. Fournier, C. I. Michailovsky, S. Calmant, J. –F. Cretaux, J. D. Bales, S. Biancamaria, T. S. Bianchi, C. Dupouy, **M.M. Gierach**, C. B. Jones, B. Laignel, M. P. Lamb, C. J. Legleiter, J. –M. Martinez, J. M. Melack, F. E. Muller-Karger, J. E. Richey, E. Rodriguez, M. Simard, and L. C. Smith, 2016: From the Mountains to the Sea: Interdisciplinary Science and Applications Driven by the Flow of Water, Sediment, and Carbon II, 2017-2027 *Decadal Survey for Earth Science and Applications from Space of the National Academies of Sciences, Engineering and Medicine*, 2nd Request for Information, submitted on 2016-05-17, [available online](#).

PROFESSIONAL ACTIVITIES

2026-present	Steering Committee Member for Keck Institute for Space Studies
2026	CEOS-COAST Virtual Constellation, Products and Algorithms Coastal Gap Analysis Co-Lead
2024-2025	Interagency Ocean Observation Committee Coastal Climate Signal Task Team Member
2023-2025	International Ocean Colour Coordinating Group (IOCCG) Hyperspectral Remote Sensing Task Force
2022-2025	USGCRP Coasts Interagency Working Group
2022-2024	Steering Committee Member on NASA’s Network for Ocean Worlds (NOW)
2021-2024	International Ocean Colour Coordinating Group (IOCCG) Remote Sensing of Marine Litter and Debris Task Force, Technologies Core Topic
2021-2022	Scientific Organizing Committee Member for OCB-US CLIVAR Ecological Forecasting Workshop (April 2022)
2021-2023	US CLIVAR Phenomena, Observations, and Synthesis (POS) Panel co-chair, SSC member
2020-2022	Member of the National Academies of Sciences Engineering and Medicine “Committee on U.S. Contributions to Global Ocean Plastic Waste” Study
2020-2021	Topic Editor of “Remote Sensing for Applied Coral Reef Science and Management” Special Issue in <i>Frontiers in Marine Science</i>

2018-2022 Technical Advisory Committee (TAC) Alliance for Coastal Technologies for Hyperspectral Imaging

2018-2023 US CLIVAR Phenomena, Observations, and Synthesis (POS) Panel member

2015 NASA representative at the U.N. Climate Change Conference (COP-21)

2015 NASA representative for the 2016 National Earth Observation Assessment

2014-2016 NASA Early Career Scientist/Engineer Working Group (ECSEWG) member

2014 NASA representative at the U.N. Climate Change Conference (COP-20)

2013 USGCRP Oceans and Coasts Indicator team member

2013 NASA ESD Decadal Survey System Trade Study: Data Latency Needs and Requirements steering committee member

2012-2014 NASA representative for the IOOS Data Management And Communications steering team

2009-present Journal Reviewer for several articles (e.g., Geophysical Research Letters, Journal of Geophysical Research, Journal of Applied Meteorology and Climatology, Remote Sensing of Environment, Estuaries and Coasts, Marine Environmental Research, Marine Ecology Progress Series), Subject Matter Editor for Ecological Applications Journal.

MENTORING

Postdocs

2026-present **Advisor** to Stephanie Lim, NASA Postdoctoral Program (NPP) Associate

2024-present **Advisor** to Jessica Zaiiss-Bowman, NASA Postdoctoral Program (NPP) Associate

2023-2024 **Co-Advisor** to Christiana Ade, JPL Postdoctoral Associate (*now Assistant Researcher, UCLA Joint Institute for Regional Earth System Science & Engineering*)

2021-2024 **Advisor** to Boyang “Jack” Pan, NASA Postdoctoral Program (NPP) Associate (*now CEO Ocean Motion Technologies Inc*)

2021-2024 **Advisor** to Kelly Luis, NASA Postdoctoral Program (NPP) Associate (*now JPL Scientist*)

2021-2023 **Advisor** to Adam Chlus, JPL, Postdoctoral Associate (*now JPL technologist*)

2017-2019 **Co-Advisor** to Dustin Carroll, Caltech Postdoctoral Associate (*now Research Associate at Moss Landing Marine Laboratories*)

2015-2018 **Advisor** to Severine Fournier, NPP Postdoctoral Associate (*now JPL scientist*)

2015-2016 **Advisor** to Yang (Cathy) Feng, Caltech Postdoctoral Associate

2014-2016 **Advisor** to Cedric Fichot, Caltech Postdoctoral Associate (*now Assistant Professor at Boston University*)

Interns

2026 **Advisor**, NASA Earthrise Developers Academy project (5 interns)

2026 **Advisor** to Ofelia Garcia Prado, JPL Summer Intern

2025-2026 **Advisor** to Rachel Jiang, JPL Intern

2021 **Advisor** to Ashley Kleinman, JPL Summer Intern

2021 **Co-Advisor** to Graham Trolley, JPL Summer Intern

2018-2021 **Senior mentor**, Mentoring Physical Oceanography Women to Increase Retention (MPOWIR)

2017 **Co-Advisor**, NASA DEVELOP San Francisco Bay-Delta Water Resources I & II project

2016 **Co-Advisor**, NASA DEVELOP Los Angeles Oceans & Water Resources III project

2015 **Co-Advisor**, NASA DEVELOP Los Angeles Oceans & Water Resources II project

2014 **Co-Advisor**, NASA DEVELOP Los Angeles Oceans & Water Resources I project

PhD Committees

2023-present **Thesis Advisory Committee** for Madeleine Dawson, RSMAS

2021-2024 **Thesis Advisory Committee** for Kate Cavanaugh, UCLA

2020-2023 **Thesis Advisory Committee** for Lily Dove, Caltech

2016-2019 **Thesis Advisory Committee** for Zachary Erickson, Caltech

2014

Thesis Jury for Severine Fournier, IFREMER