

MARGARET L. ESTAPA

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RESEARCH INTERESTS

Oceanic biogeochemical processes mediated by organic and inorganic particles in open ocean, coastal, near-bottom, and extraterrestrial environments; validation and application of novel observational methods for marine organic matter; autonomous platforms for ocean observations; ocean color remote sensing; interactions of emerging contaminants and marine carbon dioxide removal approaches with ocean biogeochemical systems.

EDUCATION

Ph.D., Oceanography, 2011. University of Maine, Orono, ME.
B.A., Chemistry, *Magna cum laude*, 2001. Carleton College, Northfield, MN.

PROFESSIONAL APPOINTMENTS (last 5 years)

Associate Professor of Chemical Oceanography, School of Marine Sciences, University of Maine, 2024-present.
Libra Assistant Professor of Chemical Oceanography, School of Marine Sciences, University of Maine, 2020-2024.
Assistant Professor, Department of Geosciences, Skidmore College, 2016-2020.

SELECTED FELLOWSHIPS AND AWARDS

Hypothesis Fund awardee, 2024.
Robert H. Goddard Group Honor Award for Science, EXPORTS Project Science Team, 2021.
NASA New Investigator Program in Earth Sciences awardee, 2014.

SIGNIFICANT PUBLICATIONS (* = my student, ** = collaborators' students)

For full list, please see [website](#) or [Google Scholar profile](#)

Siegel D.A., A.B. Burd, **M. Estapa**, E. Fields, L. Johnson, E. Romanelli, M.A. Brzezinski, K.O. Buesseler, S. Clevenger, I. Cetinić, L. Drago, C.A. Durkin, R. Kiko, S.J. Kramer, A. Maas, M. Omand, U. Passow, D.K. Steinberg. 2025. Assessing Marine Snow Dynamics During the Demise of the North Atlantic Spring Bloom Using In Situ Particle Imagery. *Global Biogeochemical Cycles* 39: e2025GB008676.
<https://doi.org/10.1029/2025GB008676>

Estapa, M. L., C. A. Durkin, W. H. Slade, C. L. Huffard, S. P. O'Neill, and M. M. Omand. 2024. A new, global optical sediment trap calibration. *Limnology & Oceanography: Methods* lom3.10592. doi:[10.1002/lom3.10592](https://doi.org/10.1002/lom3.10592)

Durkin CA, Buesseler KO, Cetinić I, **Estapa ML**, Kelly RP, Omand M. 2021. A Visual Tour of Carbon Export by Sinking Particles. *Global Biogeochem Cycles* **35**(10). doi:
[10.1029/2021GB006985](https://doi.org/10.1029/2021GB006985)

- Estapa M.L.**, Buesseler KO, Durkin CA, Omand MM, Benitez-Nelson CR, Breves E, Kelly RP, Pike SM, Roca-Martí M. 2021. Biogenic sinking particle fluxes and sediment trap collection efficiency at Ocean Station Papa. *Elementa: Science of the Anthropocene* 9(1). doi: 10.1525/elementa.2020.20.00122
- Estapa, M.**, J. Valdes, K. Tradd, J. Sugar, M. Omand, and K. Buesseler. 2020. The Neutrally Buoyant Sediment Trap: Two Decades of Progress. *Journal of Atmospheric and Oceanic Technology*. 37: 957–973. doi:10.1175/JTECH-D-19-0118.1
- Estapa, M.L.**, M. Feen*, and E. Breves, 2019. Direct observations of biological carbon export from profiling floats in the subtropical North Atlantic. *Global Biogeochemical Cycles*, 282–300.
- Estapa, M.L.**, Siegel, D.A., Buesseler, K.O., Stanley, R.H.R., Lomas, M.R., Nelson, N.B., 2015. Decoupling of net community production and export production at submesoscale fronts in the Sargasso Sea. *Global Biogeochemical Cycles*, 29, doi:10.1002/2014GB004913.
- Estapa, M.L.**, Breier, J.A., German, C.R., 2015. Particle dynamics in the rising plume at Piccard Hydrothermal Field, Mid-Cayman Rise: new applications of optical sensors. *Geochemistry, Geophysics, Geosystems*, 16, doi:10.1002/2015GC005831.
- Estapa, M.L.**, Buesseler, K.O., Boss, E., Gerbi, G.P., 2013. Autonomous, high-resolution observations of particle flux in the oligotrophic ocean. *Biogeosciences*, 10: 5517-5531.
- Estapa, M.L.**, Boss E., Mayer L.M., Roesler C.R., 2012. Role of iron and organic carbon in mass-specific light absorption by particulate matter from Louisiana coastal waters, *Limnology and Oceanography*, 57(1): 97-112.
- Estapa, M. L.**, Mayer, L.M., 2010. Photooxidation of particulate organic matter. *Marine Chemistry*, 122: 138-147.

COURSES TAUGHT (last five years, UMaine only)

For full list of 16 courses please inquire by email

Semester-by-the-Sea: Marine Environmental Change (undergraduate)

Chemical Oceanography (graduate)

Calibration and Validation for Ocean Color Remote Sensing (graduate; with colleagues from University of Maine and 8 other institutions)

Marine Carbon Dioxide Removal (graduate)

Marine Environmental Contaminants (graduate)

KEY SERVICE CONTRIBUTIONS

Associate Editor, *Global Biogeochemical Cycles*, 2026-present

Member, University of Maine School of Marine Sciences Peer Committee, Sept 2024-present.

Member, Biogeochemical Argo Technology Task Team, 2023-present

Member, Exploring Ocean Iron Solutions (ExOIS), 2022-present.

Member, EXPORTS Science Definition Team, NASA Ocean Biology and Biogeochemistry, 2015-2016.

Reviewer of manuscripts and proposals for journals, NSF, NASA, and NERC.