HILARY G. CLOSE

Associate Professor • University of Miami
Department of Ocean Sciences • Rosenstiel School of Marine, Atmospheric, and Earth Science
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EDUCATION

Ph.D., Harvard University, MA	Earth and Planetary Sciences, *Advisor: Ann Pearson*	2012
B.A., Oberlin College, OH	Geology (High Honors), *Minor in Latin*	2006

PROFESSIONAL EXPERIENCE

2022-present	Associate Professor, Dept. of Ocean Sciences, Rosenstiel School, University of Miami
2016-2022	Assistant Professor, Dept. of Ocean Sciences, Rosenstiel School, University of Miami
2015-2016	Associate Project Scientist, University of California Santa Cruz
2015-2016	Affiliate, U.S. Geological Survey Pacific Coastal and Marine Science Center
2014-2015	Assistant Researcher, University of Hawaiʻi
2012-2014	SOEST Young Investigator and NOAA Postdoctoral Fellow, Univ. of Hawaiʻi
2012	Postdoctoral Researcher, Harvard University
2006-2012	Graduate Research Fellow and Teaching Fellow, Harvard University
2005-2006	NSF RUI Research Assistant, Oberlin College

RESEARCH FUNDING AWARDS

2025-28 NSF-OCE 2446715. *Collab: 2446714, Sessions, Caltech*. "Collaborative Research: Amino acid D/H as a novel tracer of microbial processes in marine particles"

2024-29 Partner PI, Ocean Biogeochemistry Virtual Institute, Schmidt Sciences. Projects: "Subtropical Underwater Biogeochemistry and Subsurface Export Alliance (SUBSEA)"; "Animals as living bioreactors: The role of animal gut microbiomes in shaping oceanic carbon cycling and export"

2022-25 CLIMESEAFOOD, Norwegian Research Council

2021-25 NSF-OCE 2124415. *Collab: 2124416, Popp & Seraphin, Hawaii.*
"Collaborative Research: Isotopic Indicators for Mechanisms of Organic Matter Degradation under High Productivity and High Carbon Flux Conditions (EXPORTS)"

2020-25 BIOS-SCOPE II Investigator, Simons Foundation International

2020-21 University of Miami Provost's Research Award

"Distinction of in situ and advective sources of particulate organic carbon in Florida regional waters"

2018-23 NSF-OCE 1830016. *Collab: 1829425, Popp & Seraphin, Hawaii.*
"Collaborative Research: Isotopic Indicators for Mechanisms of Organic Matter Degradation in the Northeast Pacific (EXPORTS)"

2018-19 BIOS-SCOPE Visiting Scholar, Summer 2018, 2019

2016-21 U.S. Geological Survey Collaborative Agreement
"Determining the Provenance of Organic Matter in Marine Sediment"

2014-16 NSF-OCE 1333734: J Drazen, H Close, C Hannides, B Popp, K Seraphin
"Evaluating the relative importance of suspended and sinking particles to the meso and bathypelagic food web in the central North Pacific"

2014 Chief Scientist Training Program, NSF/UNOLS

2012-14 SOEST Young Investigator Award, University of Hawai'i

2012-14 NOAA Climate and Global Change Postdoctoral Fellowship

2011 Harvard University Graduate School of Arts and Sciences Merit Fellowship

2009 ExxonMobil Geoscience Grant

HONORS

2022 Alfred P. Sloan Research Fellow in Earth System Science

2015 Raymond L. Lindeman Award, Association for the Sciences of Limnology and Oceanography. "Outstanding paper written by a young aquatic scientist" (Ref. #3). Award citation: https://doi.org/10.1002/lob.10013

2015 NOPP Excellence in Partnering Award (USGS team)

2012 Selected participant, Dissertations in Chemical Oceanography Symposium, DISCO XXIII

2011 Shaler Teaching Award, Harvard University Dept. of Earth and Planetary Sciences

2011 Harvard University Certificate of Distinction in Teaching

2006 James Mills Peirce Fellowship, Harvard University

2005-06 Oberlin College: Phi Beta Kappa, Sigma Xi, Wharton Prize (Geology), Classics Alumni Prize

PUBLICATIONS (*Advisee author; *Undergraduate advisee author*)

39. ***Doherty SC**, Choy CA, ***Paul NL***, **Close HG** (2025) Microbial and metazoan activity in Monterey Bay, CA recorded in amino acid nitrogen isotope ratios of sinking and suspended particles. *Journal of Geophysical Research: Oceans*, DOI: 10.1029/2025JC022372.

38. Miller LC, **Close HG**, Grabb KC, Huffard CL, Li F, Karl DM, Smith KL, DeLong EF, Benitez-Nelson CR, Drazen JC, Popp BN (2025) Transformations of particulate organic matter from the surface to the abyssal plain in the North Pacific as inferred from compound-specific stable isotope and microbial community analyses. *Deep-Sea Research I*, DOI: 10.1016/j.dsr.2025.104597.

37. Chavarry JM, Hetherington ED, **Close HG**, Choy CA (2025) Using stable isotopes to describe the trophic structure of gelatinous zooplankton across the deep pelagic. *Limnology and Oceanography*, DOI: 10.1002/lno.70237.

36. ***Henderson LC**, English CJ, ***Jeng DL***, Popendorf KJ, Carlson CA, **Close HG** (2025) Carbohydrate content controls vertical variations in carbon to nitrogen ratios of organic particles within the euphotic zone in the northwest Sargasso Sea. *Communications Earth and Environment*. DOI: 10.1038/s43247-025-02524-6.

35. Short M, **Close HG**, Gilliam D, Figueiredo J (2025) A reproductive and trophic analysis of corals in a degraded environment. *Coral Reefs*, DOI: 10.1007/s00338-025-02655-4.

34. Shipley ON and 37 others (2024) Design, development, and implementation of IsoBank: a centralized repository for isotopic data. *PLoS ONE*, DOI: 10.1371/journal.pone.0295662.

33. Comstock J, ***Henderson LC**, **Close HG**, Liu S, Vergin K, Worden AZ, Wittmers F, Halewood E, Giovannoni S, Carlson CA (2024) Marine particle size-fractionation indicates organic matter is processed by differing microbial communities on depth-specific particles. *ISME Communications*, **4**(1), ycae090.

32. Umhau BP, Motta LC, Blum JD, **Close HG**, Drazen JC, Popp BN, Benitez-Nelson CR (2024) Particulate mercury export in the Central Pacific Ocean using ^{234}Th-^{238}U disequilibria. *Marine Chemistry*, **255-256**, 104433.

31. ***Henderson LC**, Wittmers F, Carlson CA, Worden A, **Close HG** (2024) Variable carbon isotope fractionation of photosynthetic communities over depth in an open-ocean euphotic zone. *Proceedings of the National Academy of Sciences of the USA*, **121**(10), e2304613121.

30. Hetherington ED, **Close HG**, Haddock SHD, Damian-Serrano A, Dunn CW, Wallsgrove NJ, ***Doherty SC**, Choy CA (2024) Nitrogen isotope values reveal niche partitioning among siphonophores and vertical gradients in deep pelagic trophic structure. *Limnology and Oceanography*, **62**, 902-919.

29. Graff JR, Nelson NB, Roca-Martí M, Romanelli E, Kramer SJ, Erickson Z, Cetiníc I, Buesseler KO, Passow U, Zhang X, Benitez-Nelson CR, Bisson K, **Close HG**, Crockford T, Fox J, Halewood S, Lam PJ, Roesler C, Sweet J, VerWey B, Xiong Y, Siegel DA (2023) Reconciliation of total particulate organic carbon and nitrogen measurements determined using contrasting methods in the North Pacific Ocean as part of the NASA EXPORTS field campaign. *Elementa, Science of the Anthropocene*, **11**(1), 00112.

28. ***Wojtal PK**, ***Doherty SC**, Shea CH, Popp BN, Benitez-Nelson CR, Buesseler KO, Estapa ML, Roca-Martí M, **Close HG**. (2023) Deconvolving mechanisms of particle flux attenuation using nitrogen isotopes of amino acids. *Limnology and Oceanography*, **68**(9), 1965-1981.

27. Shea CH, ***Wojtal PK**, **Close HG**, Stamieszkin K, Cope JS, Steinberg DJ, Maas AE, Wallsgrove N, Popp BN. (2023) Small particles and heterotrophic protists support the

mesopelagic zooplankton food web at Ocean Station Papa. *Limnology and Oceanography*, **68**(8), 1949-1963.

26. Motta LC, Blum JD, Popp BN, Umhau BP, Benitez-Nelson CR, **Close HG**, Washburn SJ, Drazen JC (2022) Mercury isotopic evidence shows that marine particles are an important source of mercury to marine organisms. *Proceedings of the National Academy of Sciences of the USA*, **119**(44), 2208183119.

25. ***Lohroff TJ***, Gillette PR, **Close HG**, Benetti DD, Stieglitz JD (2021) Evaluating the potential bioextractive capacity of South Florida native macroalgae *Agardhiella subulata* for use in integrated multitrophic aquaculture (IMTA). *Aquaculture*, **544**, 737091.

24. Vokhshoori NL, McCarthy MD, **Close HG**, Demopoulos AWJ, Prouty NG (2021) New geochemical tools for investigating resource and energy functions in deep-sea methane seeps using amino-acid $\delta^{15}N$ in chemosymbiotic mussels (*Bathymodiolus childressi*). *Geobiology*, **19**, 601-617.

23. Siegel DA and 70 others (2021) An Operational Overview of the EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Northeast Pacific Field Deployment. *Elementa, Science of the Anthropocene*, **9** (1), 00107.

22. *Doherty SC, Maas AE, Steinberg DK, Popp BN, Close HG (2021) Distinguishing fecal pellets as a component of the biological pump using compound-specific isotope analysis of amino acids. *Limnology and Oceanography*, 66, 2827-2841.

21. **Close HG**, PJ Lam, BN Popp (2021) Marine Particle Chemistry: Influence on Biogeochemical Cycles and Particle Export. *ACS Earth and Space Chemistry*, **5** (5), 1210-1211. [Editorial] DOI: 10.1021/acsearthspacechem.1c00091

20. **Close HG**, ***Henderson LC** (2020) Open-ocean minima in $\delta^{13}C$ values of particulate organic carbon in the lower euphotic zone. *Frontiers in Marine Science*, **7**, 540165. DOI: 10.3389/fmars.2020.540165.

19. Kharbush JJ, **Close HG**, Van Mooy BAS, Arnosti C, Smittenberg RH, Le Moigne FAC, Mollenhauer G, Scholz-Bottcher B, Obreht I, Koch BP, Becker K, Iversen MH, Mohr W (2020) Particulate organic carbon deconstructed: Molecular and chemical composition of particulate organic carbon in the ocean. *Frontiers in Marine Science*, **7**, 518. DOI: 10.3389/fmars.2020.00518.

18. Romero-Romero S, Ka`apu-Lyons CK, Umhau BP, Benitez-Nelson CR, Hannides CCS, **Close HG**, Drazen JC, Popp BN (2020) Deep zooplankton rely on small particles when particle fluxes are low. *Limnology and Oceanography Letters*, **5**, 410-416. DOI: 10.1002/lol2.10163.

17. Wang K, **Close HG**, Tuller-Ross B, Chen H (2020) Global average potassium isotope composition of modern seawater. *ACS Earth and Space Chemistry*, **4**(7), 1010-1017.

16. Prouty NG, Campbell-Swarzenski PL, **Close HG**, Biddle JF, Beckmann S (2020) Molecular indicators of methane metabolisms at cold seeps along the United States Atlantic Margin. *Chemical Geology*, **543**, 119603.

15. Motta LC, Blum JD, Popp BN, Drazen JC, **Close HG** (2020) Mercury stable isotopes in flying fish as a monitor of photochemical degradation of methylmercury in the Atlantic and Pacific

Oceans. *Marine Chemistry*, **223**, 103790. DOI: 10.1016/j.marchem.2020.103790.

14. Hannides CCSH, Popp BN, **Close HG**, Benitez-Nelson CR, Kaʻapu-Lyons CA, Gloeckler K, Wallsgrove N, Umhau B, Drazen JC (2020) Seasonal dynamics of midwater zooplankton and relation to particle cycling in the North Pacific Subtropical Gyre. *Progress in Oceanography*, **182**, 102266.

13. Umhau BP, Benitez-Nelson CR, **Close HG**, Hannides CCS, Motta L, Popp BN, Blum JD, Drazen JC (2019) Seasonal and spatial changes in carbon and nitrogen fluxes estimated using ^{234}Th:^{238}U disequilibria in the North Pacific Subtropical Gyre. *Marine Chemistry*, **217**, 103705, 14 pp.

12. Hurley SJ, **Close HG**, Elling FJ, Jasper CE, Gospodinova K, McNichol AP, Pearson A (2019) CO_2-dependent carbon isotope fractionation in Archaea, Part II: The marine water column. *Geochimica et Cosmochimica Acta*, **261**, 383-395.

11. Motta LC, Blum JD, Johnson MW, Umhau BP, Popp BN, Washburn SJ, Drazen JC, Benitez-Nelson CR, Hannides CCS, **Close HG**, Lamborg CH (2019) Mercury cycling in the North Pacific Subtropical Gyre as revealed by mercury stable isotope ratios. *Global Biogeochemical Cycles*, **33**, 777-794.

10. **Close HG** (2019) Compound-specific isotope geochemistry in the ocean. *Annual Review of Marine Science*, **11**, 27-56. [Invited contribution]

9. Gloeckler K, Choy CA, Hannides CCS, **Close HG**, Goetze E, Popp BN, Drazen JC (2018) Stable isotope analysis of micronekton around Hawaii reveals suspended particles are an important nutritional source in the lower mesopelagic and upper bathypelagic zones. *Limnology and Oceanography*, **63**, 1168-1180.

8. Hurley SJ, Lipp JS, **Close HG**, Hinrichs K-U, Pearson A (2018) Distribution and export of isoprenoid tetraether lipids in suspended particulate matter from the water column of the Western Atlantic Ocean. *Organic Geochemistry*, **116**, 90-102.

7. Ohkouchi N, Chikaraishi Y, **Close HG**, Fry B, Larsen T, Madigan DJ, McCarthy MD, McMahon KW, Nagata T, Naito YI, Ogawa NO, Popp BN, Steffan S, Takano Y, Tayasu I, Wyatt ASJ, Yamaguchi YT, Yokoyama Y (2017) Advances in the application of amino acid nitrogen isotopic analysis in ecological and biogeochemical studies. *Organic Geochemistry*, **113**, 150-174.

6. Fassbender AJ & 73 others (2017) Perspectives on Chemical Oceanography in a changing environment: Participants of the COME ABOARD Meeting examine the field in the context of 40 years of DISCO. *Marine Chemistry*, **196**, 181-190.

5. Jarman CL, Larsen T, Hunt T, Lipo C, Solsvik R, Wallsgrove N, Ka'apu-Lyons C, **Close HG**, Popp BN (2017) Diet of the prehistoric population of Rapa Nui (Easter Island, Chile) shows environmental adaptation and resilience. *American Journal of Physical Anthropology*, **164**, 343-361.

4. **Close HG**, Wakeham SG, Pearson A (2014) Lipid and ^{13}C signatures of submicron and suspended particulate organic matter in the Eastern Tropical North Pacific: Implications for the contribution of Bacteria. *Deep-Sea Research Part 1*, **85**, 15-34.

3. **Close HG**, Shah SR, Ingalls AE, Diefendorf AF, Brodie EL, Hansman RL, Freeman KH,

Aluwihare LI, Pearson A (2013) Export of submicron particulate organic matter to mesopelagic depth in an oligotrophic gyre. *Proceedings of the National Academy of Sciences of the USA*, **110**, 12565-12570.

2. **Close HG**, Bovee R, Pearson A (2011) Inverse carbon isotope patterns of lipids and kerogen record heterogeneous primary biomass. *Geobiology*, **9**, 250-265.

1. Pearson A, Leavitt WD, Saenz JP, Summons RE, Tam MC-M, **Close HG** (2009) Diversity of hopanoids and squalene-hopene cyclases across a tropical land-sea gradient. *Environmental Microbiology*, **11**, 1208-1223.

PUBLICATIONS UNDER REVIEW:

Close HG, McCarthy MD, Prouty NG. Organic and isotopic indicators for sorting of sedimentary organic matter along a marginal submarine canyon. *In Review*.

***García-Seoane R**, Viana IG, Bode A, **Close HG**. Unraveling the trophic ecology of small pelagic fishes in the North Iberian shelf by using stable isotopes and fatty acids. *In Revision*.

Lasco HL, **Close HG**, Hoenig R, Gillette PR, Benetti DD, Stieglitz JD. Evaluating native macroalgae species of the Southeast U.S. and Caribbean regions for use in integrated multi-trophic aquaculture (IMTA). *In Review.*

OTHER WORKS:

Aronson EL, Bristol S, Burgess AB, Chandrasekar V, **Close H**, van Eyken T, Ferrini V, Gomez B, Kinkade D, Kelbert A, Martin RL (2015) Geoscience 2020: Cyberinfrastructure to reveal the past, comprehend the present, and envision the future. EarthCube Working Paper, ECWP-2015-1, 19 p. DOI: 10.7269/P3MG7MDZ.

Close HG (2012) Size-related isotopic heterogeneity in lipids from the marine water column. Dissertation, Harvard University. http://nrs.harvard.edu/urn-3:HUL.InstRepos:9789420

SELECTED ORAL PRESENTATIONS (*Invited)

April 2025 ***Earth, Environmental, and Marine Sciences Seminar, University of North Carolina at Chapel Hill.** *Isotopic approaches for distinguishing origins and degradation pathways of particulate organic matter in marine water columns.*

March 2025 ***2025 Aquatic Sciences Meeting**, Charlotte, NC. *Relationships between the organic composition of particulate and dissolved organic matter in an oligotrophic water column.*

Nov. 2024 ***Environmental Geology and Geochemistry Seminar, Princeton University**, Princeton, NJ. *Unveiling the distinct organic matter dynamics of the upper and lower euphotic zones.*

Nov. 2024 ***2024 Korean Society of Oceanography Fall Conference**, virtual presentation. *Contrasting degradation pathways of particulate organic matter at Pacific and Atlantic sites of the EXPORTS program.*

Aug. 2024 ***Goldschmidt 2024**, Chicago, IL. *Developing a global context for alteration of amino*

acid-specific stable isotope patterns in oceanic particulate matter.

May 2024 ***Marine Chemistry and Geochemistry Seminar, Woods Hole Oceanographic Institution**, Woods Hole, MA. *Isotopic techniques for disentangling sources and degradation pathways of marine organic matter.*

June 2023 ***ASLO 2023 Aquatic Sciences Meeting**, Palma de Mallorca, Spain. *Progress and frontiers in ocean applications of compound-specific isotope geochemistry.*

Oct. 2022 ***Ocean Floor Symposium, MARUM, University of Bremen**, Bremen, Germany. *Distinguishing microbial and zooplankton degradation of exported particles in marine water columns.*

Aug. 2022 ***Organic Geochemistry 2022 Gordon Research Conference**, Holderness, NH. *Deconstructing bulk stable isotopes of marine particulate organic matter: Recent insights from compound-specific isotope analysis.*

Oct. 2021 **COMPASS Seminar**, University of Miami, Miami, FL. *Marine metabolisms recorded in natural stable isotopes: From microbes to the global carbon cycle.*

July 2021 **Goldschmidt 2021**, virtual meeting. *Carbon isotope ratios of particulate organic carbon in the lower euphotic zone.*

Dec. 2020 ***Geotopics Seminar**, Department of Marine Geosciences, University of Miami, Miami, FL. *Digging through the organic toolbox.*

Oct. 2020 ***University of Southern Mississippi Marine Science Seminar**, conducted remotely. *Microbial and metazoan pathways of organic matter degradation recorded in natural stable isotopes of marine particles.*

March 2020 ***UC Santa Barbara IGPMS Seminar**, Santa Barbara, CA**.** *Mechanisms of organic matter degradation recorded in natural stable isotopes of marine particles.*

Aug. 2019 **Goldschmidt 2019,** Barcelona, Spain. *Dynamics of particulate organic composition, microbial community, and zooplankton contributions in an oligotrophic water column.*

April 2019 ***Hanse-Wissenschaftskolleg Workshop on Marine Organic Biogeochemistry,** Delmenhorst, Germany. *Persistent questions about microbial particle origins and dynamics: Directions and challenges from the world of isotopes.*

April 2019 ***EAOS Seminar, Florida State University**, Tallahassee, FL. *Distinguishing the roles of microbial and metazoan heterotrophy in the ocean carbon cycle.*

Feb. 2019 **ASLO 2019 Aquatic Sciences Meeting**, San Juan, PR. *Novel compound-specific isotopic fingerprints of methane metabolism and dietary relationships in Bathymodiolus at seafloor cold seeps.*

Aug. 2018 **Goldschmidt 2018**, Boston, MA. *Microbial roles in marine carbon export: Insights from compound-specific isotope analysis.*

July 2018 ***BIOS Seminar, Bermuda Institute of Ocean Sciences**, Bermuda. *Roles of microbes and zooplankton in marine carbon export: Insights from compound-specific isotope analysis.*

Aug. 2017 ***MBARI Seminar**, Moss Landing, CA. *Detritus, degradation, and diet: using isotopes to trace the fate of ocean biomass.*

Feb. 2017 **ASLO 2017 Aquatic Sciences Meeting**, Honolulu, HI. *Heterotrophic influence on*

organic matter at epipelagic vs. mesopelagic depths reflected in compound-specific stable isotope patterns.

Jan. 2017 ***The Third Xiamen Symposium on Marine Environmental Sciences (XMAS-III)**, Xiamen, China. *Degradative status, microbial influence, and export potential of small size classes of particulate organic matter in open ocean water columns.*

Sept. 2016 ***University of South Carolina MSCI Seminar**, Columbia, SC. *Trophic processing, extracellular degradation, and particle dynamics: which components of the biological pump can we divine from stable isotope ratios of marine organic matter?*

June 2016 **USGS Pacific Coastal and Marine Science Center Seminar**, Santa Cruz, CA. *Digging through the organic toolbox: a multifaceted exploration of organic sources contributing to submarine canyon sediments.*

Feb. 2016 **2016 Ocean Sciences Meeting**, New Orleans, LA. *Sorting of terrestrial and marine organic matter along a marginal submarine canyon: Radiocarbon and biomarker signatures of surface sediments.*

Jan. 2016 ***CAMS Seminar, Lawrence Livermore National Laboratory**, Livermore, CA. *Degradative transformations of organic compounds and stable isotope ratios in the marine water column: role of microbial biomass vs. metabolic activity.*

Oct. 2015 ***Ocean Sciences Department Seminar**, University of California, Santa Cruz, CA. *Degradative transformations of organic compounds and stable isotope ratios in the marine water column: role of microbial biomass vs. metabolic activity.*

July 2015 ***Chemical Oceanography 2015 Gordon Research Conference**, Holderness, NH. *Degradative transformations of organic compounds and stable isotope ratios in the marine water column: role of microbial biomass vs. metabolic activity.*

Mar. 2015 ***Ocean Sciences Department Seminar**, University of Miami, Miami, FL. *Records of marine biosynthesis and degradation: Stable isotope approaches for revealing the hidden world of microbial carbon cycling.*

Feb. 2015 ***ASLO 2015 Aquatic Sciences Meeting Award Acceptance**, Granada, Spain. *Submicron particulate organic matter: Export and updates.*

Feb. 2015 **ASLO 2015 Aquatic Sciences Meeting**, Granada, Spain. *Degradative transformations of stable isotope ratios in sinking and suspended organic matter, from surface to upper bathypelagic depths, Station ALOHA.*

Feb. 2014 **2014 Ocean Sciences Meeting**, Honolulu, HI. *Compound-specific $\delta^{13}C$ values as indicators of biosynthesis and degradation in marine particles, from submicron to sinking, Station ALOHA.*

Feb. 2013 **ASLO 2013 Aquatic Sciences Meeting**, New Orleans, LA. *Lipid and isotopic signatures of a plankton community gradient in the Northeast Pacific Ocean.*

Dec. 2011 **AGU Fall Meeting**, San Francisco, CA. *Lipid and ^{13}C signatures of picoplankton in marine organic matter export.*

May 2010 ***Harvard-MIT Geobiology Symposium**, Cambridge, MA. *^{13}C-enriched bacterial lipids in the modern ocean: an analogue to the Proterozoic record.*

June 2009 **Goldschmidt 2009**, Davos, Switzerland. *C-13-enriched bacterial lipids in the modern ocean: an analogue to the Proterozoic record.*

TEACHING (*Semesters taught §New course designed whole or in part by HGC)

2017-present	*5 §Marine Organic Geochemistry, OCE 612, graduate-level, 2-5 students
2018-present	*8 Chemical Oceanography, MSC 215, undergraduate, 15-50 students
2019-present	*3 §Microbial Geochemistry of the Ocean, MSC 419, undergraduate, 4-10 students
2019	*1 Chemical Oceanography Laboratory, MSC 216, undergraduate, 7 students
2020-2022	*3 §Seminar in Marine Science, MSC 180, 1st semester undergraduate, 8-9 students
2019-present	*9 Undergraduate Research/Thesis, MSC 411/412, 1-3 students per semester
2014-2022	Guest lectures, Scripps Inst. of Oceanography, Univ. of Hawaii, UC Santa Cruz, Univ. of Miami: geology, oceanography, geochemistry, isotope geochemistry, marine chemistry, mass spectrometry
2007-2011	Teaching Fellow, Harvard University: History of the Earth; Introduction to Geological Sciences; How to Build a Habitable Planet
2005	Elementary Latin, Oberlin College Winter Term

MENTORSHIP & ADVISING

Postdoctoral supervisor		
	Sydney Wilkinson, Ph.D.	beginning Dec 2025
	Liz Loutrage, Ph.D.	2025-present (UCSD, co-advised)
Ph.D. advisor		
	Jason Freisen	2025-present (Ocean Sciences)
	Elizabeth Yanuskiewicz, Ph.D.	2021-2025 (Ocean Sciences)
	Lillian Henderson, Ph.D.	2019-2024 (Ocean Sciences)
	Paul Wojtal, Ph.D.	2019-2024 (Ocean Sciences)
	Shannon Doherty, Ph.D.	2016-2021 (Ocean Sciences)
M.S. advisor		
	Dailen Jeng	2024-present (Ocean Sciences)
Ph.D. committee member		
	Noah Germolus, Ph.D.	2022-2024 (Marine Chemistry, WHOI)
	Jeffrey White, Ph.D.	2020-2024 (Biology, U. Miami)
	Evan Moore, PhD.	2020-2022 (Marine Geosciences)
	Kaycie Lanpher, Ph.D.	2018-2021 (Ocean Sciences)
Ph.D. external examiner		
	Shaomin Chen, Ph.D.	2024 (Dalhousie University)
M.S. committee member		
	Haley Lasco	2022-2023 (Marine Biology & Ecology)
	Morgan Short	2020-2021 (Marine Science, Nova Southeastern)
Undergraduate thesis advisor		
	Mia White	2024-present (Marine Science, U. Miami)
	Justin Jenkins	2023-2024 (Marine Science, U. Miami)
	Taylor Jagolinzer	2023-2024 (Marine Science, U. Miami)

Grace Coyne	2022-2024 (Marine Science, U. Miami)
Dailen Jeng	2022-2024 (Marine Science, U. Miami)
Chase Glatz	2021-2022 (Marine Science, U. Miami)
Suzanne Stremler	2018-2021 (Marine Science, U. Miami)
Isabella Horstmann	2019-2020 (Marine Science, U. Miami)

Other undergraduate research supervision

Allie Cook	2024-present (Oceanography, U. Miami)
Brayden King	2024-present (Marine Science, U. Miami)
Gaelle Duchatellier	2020-2021 (Marine Science, U. Miami)
Sophia Schiaroli	summer 2019 (Visiting from Franklin & Marshall)
Nicola Paul	2017-2018 (Honors Program, U. Miami)
Shannon Doherty	summer 2015 (USGS intern)
Laura Fontanills	2011-2012 (Harvard College)

Undergraduate thesis committee member

Toni Lohroff	2020 (Marine Science, U. Miami)

Visiting graduate student & postdoctoral fellow supervision

Julia Chavarry	2023 (Ph.D. student, Scripps Inst. of Oceanography)
Rita García Seoane, Ph.D.	2022 (IEO, CSIC, José Castillejo program)
Sarah Wenger	2020-2022 (M.A., Anthropology, U. Miami)
Michael Gualtieri	2018-2020 (M.A., Anthropology, U. Miami)

Undergraduate Academic Advisor

4 students	2022-present (Marine Science double-major program)

SYNERGISTIC ACTIVITIES

Reviewing & Editorship

- Ad hoc reviewer, >90 reviews: ACS Petroleum Research Fund; *Analytical Chemistry*; *Biogeochemistry; Deep-Sea Research Part 1*; *The Depositional Record*; *Earth and Planetary Science Letters*; *Earth System Science Data*; *Estuaries and Coasts*; *Estuarine, Coastal and Shelf Science*; *Frontiers in Marine Science*; *Geobiology*; *Geochemistry, Geophysics, and Geosystems*; *Geochimica et Cosmochimica Acta*; *Global Change Biology*; *JGR Biogeosciences*; *Limnology and Oceanography*; *Limnology and Oceanography Letters*; *Limnology and Oceanography: Methods*; *Marine Chemistry*; *Nature Geoscience*; *Organic Geochemistry*; *Palaeogeography, Palaeoclimatology, Palaeoecology*; *Paleoceanography*; *PNAS*; *Progress in Oceanography*; *Rapid Communications in Mass Spectrometry*; U.S. National Science Foundation (NSF) programs: CAREER; FRES; MG&G; MRI; OCE; OCE-PRF
- Panel reviewer: NSF-OCE; New York SeaGrant, U. Miami Provost's Research Awards; graduate scholarship and fellowship programs
- Guest editor: *ACS Earth and Space Chemistry*

University Service

- University of Miami Innovation, Technology, and Design Faculty Advisory Committee, 2022-present

- Chair, OCE faculty search committee, 2023-2024
- Rosenstiel School Council, Ocean Sciences department representative, 2023-2024
- University of Miami Faculty Senate, alternate representative, 2022-2024
- Academic Integrity Committee (2020-2021)
- Chemistry rotation leader, UM undergraduate research cruises, R/V *F.G. Walton Smith* (2019-2022)
- University of Miami President's Academic Innovation Fellow, 2022
- Chair (2018-2020), member (2017-2022), Diversity, Equity and Inclusion Committee
- Selection Committee, 2017 Rosenstiel Award

Other Leadership & Groups

- Chief Scientist, 9-day research cruise, May 2015. Leader, *in situ* pumping/particle sampling team, 14 cruises, 3-46 days. Total 26 cruises, 191 days at sea (2008-2025).
- Discussion Leader, 2019 Chemical Oceanography Gordon Research Conference
- Session Co-convener, 2022 Ocean Sciences Meeting
- IsoBank, Environmental Isotope Committee, 2019-present
- NSF EarthCube Science Standing Committee & working group member, 2014-2018

Short Courses & Workshops

- BioGeoSCAPES planning meeting, Woods Hole Oceanographic Institution, Nov. 2023
- NAGT *On the Cutting Edge* Early-Career Geoscience Faculty workshop, U. Maryland, 2018
- Proposal-writing workshop by Dallas Murphy, Rosenstiel School, Jan. 2018
- COME ABOARD: The Chemical Oceanography MEeting: A BOttom-up Approach to Research Directions, University of Hawaii, Oct. 2016
- UNOLS Chief Scientist Training, Moss Landing Marine Laboratories, CA, Oct. 2014
- NSF EarthCube End-User Workshop: Ocean Ecosystem Dynamics Community, WHOI, 2013
- Radiocarbon in Ecology and Earth System Sci., UC Irvine/Keck AMS Facility, 2007

Outreach

- Developer and presenter of chemistry activity for middle-school girls, Exploring Marine Science Day, annually since 2017 (conducted remotely in fall 2020).
- Contributor/interviewee, 10 TV episodes, Voice of the Sea (Hawaii KFVE), 2015-24
- Panelist, Rosenstiel School Career Panel for graduate students and postdocs, 2019, 2020
- At-sea blog contributions, judge of student posters/presentations, talks and demonstrations to 2nd and 4th graders at public schools in Ohio & Massachusetts, city "NerdNite" events.

Memberships

- American Geophysical Union
- Association for the Sciences of Limnology and Oceanography
- Geochemical Society

FIELD WORK – DETAILS

Research cruises, at sea

#	UNOLS ID	Project	Ship	Location	Year	Sea days	Main responsibilities
26	KM2508	HOT 360	R/V Kilo Moana	Station ALOHA	2025	6	McLane pumps/particle sampling
25	WS25264	FLOTSUM 31	R/V F.G. Walton Smith	Florida Straits	2025	1	Undergraduate training
24	SR2323	Deep Food Web	R/V Sally Ride	S. CA Bight	2023	15	McLane pumps/particle sampling
23	WS22309	FLOTSUM 18	R/V F.G. Walton Smith	Florida Straits	2022	1	Undergraduate training
22	AE2213	BIOS-SCOPE	R/V Atlantic Explorer	BATS site	2022	4	McLane pumps/particle sampling
21	AE2123	BIOS-SCOPE	R/V Atlantic Explorer	Hydrostation S	2021	4	McLane pumps/particle sampling
20	WS21276	FLOTSUM 8	R/V F.G. Walton Smith	Florida Straits	2021	1	Undergraduate training
19	AE2114	BIOS-SCOPE	R/V Atlantic Explorer	BATS site	2021	4	McLane pumps/particle sampling
18	WS19286	FLOTSUM 4	R/V F.G. Walton Smith	Florida Straits	2019	1	Undergraduate training
17	AE1916	BIOS-SCOPE	R/V Atlantic Explorer	BATS site	2019	4	McLane pumps/particle sampling
16	WS19110	FLOTSUM 3	R/V F.G. Walton Smith	Florida Straits	2019	1	Undergraduate training
15	WS19062	FLOTSUM 2	R/V F.G. Walton Smith	Florida Straits	2019	1	**Co-chief Scientist**/UG training
14	WS19061	FLOTSUM 1	R/V F.G. Walton Smith	Florida Straits	2019	1	Undergraduate training
13	AE1819	BIOS-SCOPE	R/V Atlantic Explorer	BATS site	2018	4	McLane pumps/particle sampling
12	n/a	HAP4	R/V Paragon	Monterey Bay	2017	3	McLane pumps/particle sampling
11	KM1506	Deep water food web	R/V Kilo Moana	Station ALOHA	2015	9	**Chief Scientist**/McLane pumps
10	PS1415	Chief Scientist Training	R/V Point Sur	Monterey Bay	2014	4	CTD/particle sampling
9	KM1418	Deep water food web	R/V Kilo Moana	Station ALOHA	2014	13	McLane pumps/particle sampling
8	KM1407	Deep water food web	R/V Kilo Moana	Station ALOHA	2014	9	McLane pumps/particle sampling
7	KM1309	C-MORE HOE PhoR I	R/V Kilo Moana	Station ALOHA	2013	14	McLane pumps/particle sampling
6	KN210-04	DEEP DOM	R/V Knorr	Western Atlantic	2013	46	McLane pumps/particle sampling
5	KM1222	C-MORE HOE-DYLAN XI	R/V Kilo Moana	Station ALOHA	2012	3	CTD/particle sampling
4	KM1220	HOT 246	R/V Kilo Moana	Station ALOHA	2012	4	CTD/particle sampling
3	TN280	GeoMICS	R/V Thomas G. Thompson	Line P	2012	7	McLane pumps/particle sampling
2	KN195-02	Oxycline	R/V Knorr	ETNP	2008-09	30	McLane pumps/particle sampling
1	n/a	Methane seeps	R/V Point Lobos	Monterey Bay	2008	1	ROV sampling/methane seeps

Research cruises, MOB/DEMOB logistical support

RB1903	DEEP SEARCH	R/V Ronald H. Brown	Atlantic Canyons	2019		Setup/training- McLane pumps, CTD particle sampling
OC1808C	DOM/Gels cruise	R/V Oceanus	Newport Line	2018		Filtering setup
RR1813, SR1812	EXPORTS	R/Vs Roger Revelle and Sally Ride	Station Papa	2018		Gear setup, sample transport, outreach filming

Land-based sampling

2007: San Salvador, Bahamas. Microbial mat, water, and soil sampling. 1 week.
2005: Tepee Buttes, Colorado. Paleontological/sedimentological sampling and descriptive surveys. 3 weeks.