HILARY G. CLOSE

Assistant Professor • University of Miami
Department of Ocean Sciences • Rosenstiel School of Marine and Atmospheric Science
4600 Rickenbacker Causeway • Miami, FL 33149 • hclose@rsmas.miami.edu • 305-421-4306

EDUCATION

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

PROFESSIONAL EXPERIENCE

Assistant Professor, Department of Ocean Sciences, RSMAS, University of Miami	8/2016-present
Associate Project Scientist, University of California, Santa Cruz	2015-2016
Affiliate, U.S. Geological Survey Pacific Coastal and Marine Science Center	2015-2016
Assistant Researcher, University of Hawaiʻi	2014-2015
SOEST Young Investigator and NOAA Postdoctoral Fellow, University of Hawaiʻi	2012-2014
Postdoctoral Researcher, Harvard University	2012
Graduate Research Fellow and Teaching Fellow, Harvard University	2006-2012
NSF RUI Research Assistant, Oberlin College	2005-2006

FUNDING AWARDS

2014-16	NSF-OCE 1333734: JC Drazen, HG Close, CCS Hannides, BN Popp, KD Seraphin
2015	EarthCube Science Committee Early Career AGU Travel Grant
2014	Chief Scientist Training Program, NSF/UNOLS
2012-14	SOEST Young Investigator Award, University of Hawaiʻi
2012-14	NOAA Climate and Global Change Postdoctoral Fellowship
2011	Harvard University Graduate School of Arts and Sciences Merit Fellowship
2011	Harvard University Graduate Student Council Conference Grant
2009	ExxonMobil Geoscience Grant

HONORS

2015	Raymond L. Lindeman Award, Association for the Sciences of Limnology and Oceanography. For an "outstanding paper written by a young aquatic scientist".
2015	National Oceanographic Partnership Program 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

Close HG. Compound-specific isotope geochemistry in the ocean: what have we learned? Invited contribution, submitted to *Annual Review of Marine Science*.

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*, doi: 10.1002/lno.10762.

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.

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.

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.

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.

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.

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. ***Cited for ASLO 2015 Lindeman Award***

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

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

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.

In Preparation:

Close HG, Grabb KC, Kaʻapu-Lyons CA, Wallsgrove N, Hannides CCS, JC Drazen, BN Popp. Trophic history of sinking and suspended particles recorded in nitrogen isotopes of amino acids.

Close HG, Doherty SC, Demopoulos AWJ, McCarthy MD, Prouty NG. Compound-specific isotopic fingerprints of methane metabolism and dietary chemosymbiosis in *Bathymodiolus* at seafloor cold seeps.

SELECTED ORAL PRESENTATIONS (*Invited)

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__, RSMAS, University of Miami, Miami, FL
Records of marine biosynthesis and degradation: Stable isotope approaches for revealing the hidden world of microbial carbon cycling.

Mar. 2015 __Oceanography Seminar__, UH Mānoa, Honolulu, HI
Microbial community stratification and degradative processes at Station ALOHA: Variations over season and size class as revealed by natural stable isotopes.

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.

May 2014 __Geology and Geophysics TGIF Seminar__, UH Mānoa, Honolulu, HI
Records of marine biosynthesis and degradation: Simultaneous compound-specific stable isotope approaches using C and N.

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.

Oct. 2012 __Oceanography Seminar__, UH Mānoa, Honolulu, HI
Rethinking the roles of particulate organic matter in the era of microbial oceanography: lessons from stable isotopes and sampling methodology.

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

Spring 2018	Chemical Oceanography (MSC 215, undergraduate)
Fall 2017	Marine Organic Geochemistry (OCE 612, graduate)
2014-2016	Guest lectures, Univ. of Hawaii, UC Santa Cruz, Univ. of Miami: geology, oceanography, geochemistry, marine chemistry
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

RESEARCH/LABORATORY MENTORSHIP

2017-present	Nicola Paul: undergraduate Honors student (University of Miami)
2015-present	Shannon Doherty: Ph.D. student (RSMAS), undergraduate intern (USGS)
2012-2013	Elise Wilkes: Ph.D. student (Harvard University)
2011-2012	Laura Fontanills: senior thesis student (Harvard College)

SYNERGISTIC ACTIVITIES

Ad Hoc Reviewer	*Biogeochemistry; Deep-Sea Research Part 1*; *Earth and Planetary Science Letters*; *Estuarine, Coastal and Shelf Science; Geochimica et Cosmochimica Acta*; *Limnology and Oceanography; Marine Chemistry*; NSF-CAREER; NSF-OCE; *Organic Geochemistry*; *Palaeogeography, Palaeoclimatology, Palaeoecology; Proceedings of the National Academy of Sciences of the USA*
Leadership & Groups	Chief Scientist, 9-day research cruise, May 2015. Leader, *in situ* pumping/particle sampling team, 8 cruises, 3-47 days. Total 12 cruises, 143 days at sea (2008-2017). NSF EarthCube Science Standing Committee & working group member, 2014-present GeoMICS: collaborative cruise, data-sharing, 31 lab groups (EV Armbrust, U Washington)
Short Courses & Workshops	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, 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
Service & Outreach	RSMAS: Diversity, Equity, and Inclusion Committee; Selection Committee, 2017 Rosenstiel Award Developer and presenter of chemistry activity for middle-school girls, RSMAS Women in Science Day, Nov. 2017. Contributor/interviewee, 7 TV episodes, Voice of the Sea (Hawaii KFVE), 2015-16 At-sea blog contributions: WHOI, "Deep DOM", 2013; UNOLS, Chief Scientist Training, 2014 UH Mānoa: Judge, Fall Forum and Proposal Conference; SOEST Open House 2013 Public talks: Upper Sandusky Exempted Village Schools (OH), 2012-2013; Cambridge Sci. Fest. NerdNite 2011, "Epitaph for the plankton: how tiny dead things quietly built the world as we know it"
Memberships	American Geophysical Union; Association for the Sciences of Limnology and Oceanography; Geochemical Society