

DR. BETHANIE RACHELE EDWARDS

Assistant Professor
Earth and Planetary Science Department
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Education

Massachusetts Institution of Technology/ Woods Hole Oceanographic Institution Joint Program, PhD. in Chemical Oceanography, January 2016
Thesis: *The Biogeochemistry of Lipid Derived Infochemical Signals in the Ocean*

Hendrix College, B.A. in Biochemistry & Molecular Biology, May 2009.

Summa Cum Laude

Thesis: *Expression of nifH in Trichodesmium erythraeum.*

Professional Experience

Assistant Professor, University of California-Berkeley, Department of Earth and Planetary Science. July 2018-present.

Postdoctoral Fellow, Center for Microbial Oceanography: Research and Education, University of Hawaii-Manoa, March 2016-June 2018.

Advisor: Ed DeLong

Postdoctoral Research Associate, Woods Hole Oceanographic Institution, Department of Marine Chemistry and Geochemistry, January 2016-March 2016.

Advisor: Ben Van Mooy

Publications

10. Jiao N, Liu J, Edwards B, Lv Z, Cai R, Liu Y, Xiao X, Wang J, Jiao F, Wang R, Huang X, Guo B, Sun J, Zhang R, Zhang Y, Tang K, Zheng Q, Azam F, Batt J, Cai WJ, He C, Herndl GJ, Hill P, Hutchins D, LaRoche J, Lewis M, MacIntyre H, Polimene L, Robinson C, Shi Q, Suttle CA, Thomas H, Wallace D, Legendre L. (2021) Correcting a major error in assessing organic carbon pollution in natural waters. *Science Advances*. Apr 14;7(16):eabc7318. doi: 10.1126/sciadv.abc7318.
9. Johnson M, **Edwards BR**, Beaudoin D, Van Mooy BAS, Vardi A. (2020) Nitric oxide mediates oxylipin production and cellular defense in diatoms. *Environmental Microbiology* DOI: 10.1111/1462-2920.14879
8. Boeuf D¹, **Edwards BR**¹, Eppley JM¹, Hu SK, Poff KE, Romano AE, Caron DA, Karl DM, and DeLong EF. (2019) Biological composition and microbial dynamics of sinking particulate organic matter at abyssal depths in the oligotrophic open ocean. *Proceedings of the National Academy of Sciences* 116 (24) 11824-11832

¹ Co-first authors

7. Kranzler CF, Krause JW, Brzezinski MA, **Edwards BR**, Biggs WP, Maniscalco M, McCrow JP, Van Mooy BAS, Bidle KD, Allen AA, and Thamatrakoln K. (2019) Silicon limitation facilitates virus infection and mortality of marine diatoms. *Nature Microbiology*. doi: 10.1038/s41564-019-0502-x.
6. Collins JR, **Edwards BR**, Fredricks HF, and Van Mooy BAS. (2016) LOBSTAHS: An Adduct-Based Lipidomics Strategy for Discovery and Identification of Oxidative Stress Biomarkers. *Analytical Chemistry* 88 (14) 7154–7162.
5. **Edwards BR**, Bidle KD, and BAS Van Mooy. (2015) Dose dependent regulation of microbial activity on sinking particles by polyunsaturated aldehydes: Implications for the carbon cycle. *Proceedings of the National Academy of Sciences* 112 (19) 5909-5914.
4. Collins JR, **Edwards BR**, Thamatrakoln K, Ossolinski JE, DiTullio GR, Bidle KD, Doney SC, and BAS Van Mooy (2015) The multiple fates of sinking particles in the North Atlantic Ocean, *Global Biogeochemical Cycles* 29:1471-1494.
3. **Edwards BR**, Reddy CM, Camilli R, Carmichael CA, Longnecker K, and Van Mooy BAS (2011) Rapid microbial respiration of oil from the Deepwater Horizon spill in offshore surface waters of the Gulf of Mexico. *Environmental Research Letters* 6. doi:10.1088/1748-9326/6/3/035301
2. Sohm JA, **Edwards BR**, Wilson BG, Webb EA (2011) Constitutive Extracellular Polysaccharide (EPS) Production by Specific Isolates of *Crocospaera watsonii*. *Frontiers in Aquatic Microbiology* Vol. 2.
1. Grote J, Bayindirli C, Bergauer K., Carpintero de Moraes P., Chen H., D'Ambrosio L., **Edwards B.**, Fernandez-Gomez B., Hamisi M., Logares R., Nguyen D., Rii Y., Saeck E., Schutte C., Widner B., Church M., Steward G., Karl D., Delong E., Eppley J., Schuster S., Kyrpides N., Rappee M. (2011) Draft genome sequence of strain HIMB100, a cultured representative of the SAR116 clade of marine Alphaproteobacteria. *Standards in Genomic Sciences* North America, 5.

Invited Talks

18. Popolo Project: Black August. "Healing Waters: Militarization, Marine Science, & Reclaiming Our knowledge of the Ocean." August 2021.
17. **Goldschmidt Keynote Session 10g: Integrative Approached to explore the molecular ecology and biogeochemistry of aquatic environments. July 2021.**
16. Bigelow Laboratory for Ocean Science- Seminar. June 2021.
15. Ocean Carbon Biogeochemistry (OCB) Summer Workshop session "Bridging the divide between ocean biology and biogeochemistry" keynote and panel discussion. June 2021.
14. UC Santa Barbara Interdepartmental Graduate Program in Marine Science. March 2021.
13. Physical science Opportunities for Women in Education and Research (POWER)- Bay Area Role models Q&A. February 2021.
12. NAS Science and Entertainment Exchange TED@NAS: On Stage/Back Stage Virtual Event. February 2021.
11. University of Rhode Island- Graduate School of Oceanography Biological Oceanography Seminar. December 2020.

-cont. Invited Talks-

10. Climate Consequences. UC Berkeley Development Office October 2020.
9. San Francisco State University. Estuary and Ocean Science Center. October 2020.
8. University of Southern California. Marine and Environmental Biology Department Seminar. October 2020.
7. Sea Education Association. Ocean Odyssey Lecture Series. September 2020.
6. Panel Discussion: Ocean Sustainability and Health. Night of Ideas hosted at the Natural History Museum of Los Angeles by the French Consulate. January 2020.
5. Panel Discussion and lightning talks at Science Speed Dating hosted by NAS Science & Entertainment Exchange, the Afrofuturist Podcast, Fathomers, and UCLA Art Sci Center + Lab. November 2019.
- 4. “How chemical language is conserved across millennia”. TED @ National Academy of Sciences. Washington D.C. November 2019.**
3. UC Santa Cruz. Ocean Sciences Department Seminar. October 2019.
2. “The Emergence of Lipidomics as a Tool for Studying Microbial Dynamics in the Modern Ocean”. Microbial Ecology Workshop. Xiamen University. Nov. 2018.
1. “From viruses to microzooplankton: how marine microbes shape ocean biogeochemistry”. University of California-Museum of Paleontology Short Course on Geomicrobiology. February 2018.

Academic Service

5. Board Member. Society for Women in Marine Science. January 2020- present.
4. Undergraduate Advisor for Marine Science Majors. EPS Dept. January 2020- present.
3. Ethics Committee. The Oceanography Society. February 2019- present.
2. Co-chair of 2018 Gordon Research Symposium on Ocean Biogeochemistry. Hong Kong. September 2016-July 2018.
1. Steering Committee for Society for Women in Marine Science. June 2014-Feb 2016.

Teaching Experience

- EPS 80. Environmental Earth Science. Spring 2019.
- EPS 82. Oceans. Fall 2020. Fall 2021
- EPS c82. Oceans. Fall 2019. co-taught with J. Bishop
- EPS 113. Biological Oceanography and Biogeochemistry. Spring 2020.
- EPS 260. Research in Earth Science. Fall 2019. Fall 2020.
- EPS 290. Classic Papers in Biological Oceanography. Spring 2020.

Mentorship

13. Jiwoon Hwang. Graduate student. Fall 2019-present.
13. Madison Alcalay. 5th year Master’s student. Fall 2021-present.
12. Scarlett Schroeder. Undergraduate Honors Thesis. Fall 2021-present.
11. Tatiana Gamez. Master’s student. Fall 2019-Summer 2021.
10. Sky Poindexter. 5th year Master’s student. Fall 2020-Spring 2021.
9. Alex Starr. URAP student. Fall 2018-Spring 2019. Honors Thesis. Fall 2019-Spring 2020.
8. Annie Leal. URAP student. Fall 2018-Spring 2019. Honors Thesis. Fall 2019-Spring 2020.
7. Natalie Coy. URAP student. Fall 2018-Spring 2019.
6. Hannah Krohn. URAP student. Fall 2018- Spring 2019. 3. Jack Dickinson. URAP student. Fall 2018- Spring 2019.
5. Lauren Irie. URAP student. Fall 2018-Spring 2019. 2. Daniel Beards. URAP student. Fall 2018- Spring 2019.
4. Giselle Lopez. URAP student. Fall 2018- Spring 2019. 1. Will Kumler. Rose Hills SURF Fellow. Summer 2018.