NATALIE R. COHEN

Marine Chemistry & Geochemistry ⋄ Woods Hole Oceanographic Insitution
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RESEARCH INTERESTS

Biological oceanography · microbial ecology · phytoplankton physiology · environmental bioinformatics · trace metal geochemistry · biogeochemical cycling

EDUCATION

University of North Carolina at Chapel Hill, Chapel Hill NC *2011-2017*
Ph. D. Marine Sciences
Dissertation:*Iron-related molecular physiology of marine diatoms: Individual genes to community transcriptomes*

Pennsylvania State University, University Park PA *2006-2010*
B.S in Biology, Minor in Marine Science

ACADEMIC APPOINTMENTS

Assistant Professor in Biological Oceanography *Begins December 2020*
Skidaway Institute of Oceanography & University of Georgia Department of Marine Sciences

Postdoctoral Fellow, Laboratory of Mak Saito *2017 - present*
Marine Chemistry & Geochemistry, Woods Hole Oceanographic Institution

Graduate Research Assistant, Laboratory of Adrian Marchetti *2011 - 2017*
Department of Marine Sciences, University of North Carolina at Chapel Hill, Chapel Hill NC

Research Specialist, Laboratory of Sangwon Kim *2010 - 2011*
Department of Psychiatry, University of Pennsylvania, Philadelphia PA

FELLOWSHIPS & GRANTS

Simons Postdoctoral Fellowship in Marine Microbial Ecology ($256,000) *2017 - 2020*
Dissertation Completion Fellowship, UNC Chapel Hill ($20,000) *2016 - 2017*

AWARDS & HONORS

ASLO Early Career Travel Grant *2019*
J. Charles Morrow Award for Graduate Research Excellence, UNC Chapel Hill *2018*
COACh Career Launch & Acceleration Travel Award, Boston MAl *2018*
NSF OCB Early Career Registration Award, Woods Hole MA *2018*
Sigma Xi Full Member *2017*
Initiative for Minority Excellence Travel Award, UNC Chapel Hilll *2017*
J. Charles Morrow Travel Grant, UNC Chapel Hill *2017*
NSF ECOGEO Travel Award, University of Hawaii at Manoa *2016*
Graduate & Professional Student Senator, UNC Chapel Hill *2013-2016*
Graduate Action Group President, UNC Chapel Hill *2015-2016*
C-MORE Summer Program, University of Hawaii at Manoa (declined) *2015*
Marine Technology Society Scholarship, UNC Chapel Hill *2015*
NSF OCB Travel Award, Bigelow Laboratory for Ocean Science *2014*
J. Charles Morrow Travel Grant, UNC Chapel Hill *2013*
University Research Day Best Poster, UNC Chapel Hill *2013*
PA Commonwealth Education Abroad Scholarship, Pennsylvania State University *2010*

PUBLICATIONS

XX. **Cohen NR**, Noble AE, Moran DM, McIlvin MR, Geoptfert T, Hawco NJ, German CR, McCrow JP, Allen AE, Saito MA. Hydrothermal metal release and microbial metabolism in the tropical Pacific Ocean. *(In preparation)*

XX. Kranzler CF, Brzezinksi MA, **Cohen NR**, Lampe RH, Maniscalco M, Till CP, Mack J, Latham JR, Bruland KW, Twining BS, Marchetti A, Thamatrakoln K. Impaired viral infection of diatoms in iron-limited regimes *(Submitted)*

XX.Twining BS, Antipova O, Chappell PD, **Cohen NR**, Jacquot JE, Mann EL, Marchetti A, Ohnemus DC, Rauschenberg S, Tagliabue A. Taxonomic and nutrient controls on phytoplankton iron quotas in the ocean. *(Submitted)*

XX. Held NA, Sutherland KM, Webb EA, McIlvin MR, **Cohen NR**, Devaux AJ, Hutchins DA, Waterbury J, Hansel CM, Saito MA. Multiple molecular responses to mineral particles in natural colonies of the cyanobacterium *Trichodesmium (Submitted)*

14. **Cohen NR**, McIlvin MR, Moran DM, Hawco NJ, Held NA, Saunders JK, Brosnahan M, DiTullio G, Lamborg C, McCrow J, Dupont C, Allen A, Saito MA. Dinoflagellates alter their carbon and nutrient metabolic strategies across environmental gradients in the central Pacific Ocean (2020) *(Accepted at Nature Microbiology)*

13. Held NA, Webb EA, McIlvin MR, Hutchins DA, **Cohen NR**, Moran DM, Kunde K, Loham MC, Mahaddey C, Woodward M, Saito MA. Co-occurrence of Fe and P stress in natural populations of the marine diazotroph *Trichodesmium* (2020) *Biogeosciences* www.bg.copernicus.org/articles/17/2537/2020/

12. Moreno C, Gong W, **Cohen NR**, DeLong K, Marchetti A. Interactive effects of iron and light limitation on the molecular physiology of the Southern Ocean diatom *Fragilariopsis kerguelensis* (2020) *Limnology & Oceanography* aslopubs.onlinelibrary.wiley.com/doi/abs/10.1002/lno.11404

11. Gorsky G, Bourdin G, Lombard F, Luiza Pedrotti M, Audrain S, Bin N, Boss E, Bowler C, Cassar N, Caudan L, Chabot G, **Cohen NR**, Cron D, de Vargas C, Dolan J, Douville E, Elineau A, Flores M, Jean-Francois G, Haëntjens N, Hertau M, John S, Kelly R, Koren I, Lin Y, Marie D, Moulin C, Moucherie Y, Pesant S, Picheral M, Poulain J, Pujo-Pay M, Reverdin G, Romac S, Sullivan MB, Trainic M, Tressol M, Troublé R, Vardi A, Voolstra C, Wincker P, Agostini S, Banaigs B, Boissin E, Forcioli D, Furla P, Galand PE, Gilson E, Reynaud S, Sunagawa S, Thomas OP, Lisette Vega Thurber R, Zoccola D, Planes S, Allemand D, Karsenti E. Expanding Tara Oceans protocols for underway, ecosystemic sampling of the ocean-atmosphere interface during Tara Pacific expedition (2016-18). (2019) *Frontiers in Marine Science* www.frontiersin.org/articles/10.3389/fmars.2019.00750/full

10. Lampe RH, Mann E, **Cohen NR**, Till CP, Thamatrakoln K, Brzezinksi MA, Bruland KW, Twining BS, Marchetti A. Different iron storage strategies among bloom-forming diatoms (2018) *Proceedings of the National Academy of Sciences USA* www.pnas.org/content/115/52/E12275

9. Till CP, Solomon JR, **Cohen NR**, Lampe RH, Marchetti A, Coale TH, Bruland KW. The Iron Limitation Mosaic in the California Current System: factors governing Fe availability in the shelf/near-shelf region (2018) *Limnology & Oceanography* aslopubs.onlinelibrary.wiley.com/doi/abs/10.1002/lno.11022

8. **Cohen NR**, Gong W, Moran DM, McIlvin MR, Saito MA, Marchetti A. Transcriptomic and proteomic responses of the oceanic diatom *Pseudo-nitzschia granii* to iron limitation. (2018) *Environmental Microbiology* www.sfamjournals.onlinelibrary.wiley.com/doi/10.1111/1462-2920.14386

7. Lampe RH, **Cohen NR**, Ellis KA, Bruland KW, Maldonado MT, Peterson TD, Parker CE, Bargu S, Brzezinski MA, Kuzminov FI, Thamatrakoln K, Twining BS, Marchetti A. Divergent gene

expression among phytoplankton taxa in response to upwelling. (2018) *Environmental Microbiology* www.sfamjournals.onlinelibrary.wiley.com/doi/abs/10.1111/1462-2920.14361

6. **Cohen NR**, Mann, E, Stemple B, Raushenberg S, Jacquot J, Moreno C, Sunda W.G, Twining B.S, Marchetti A. Iron storage capacities and associated ferritin gene expression among marine diatoms. (2018) *Limnology & Oceanography* aslopubs.onlinelibrary.wiley.com/doi/abs/10.1002/lno.10800

5. **Cohen NR**, Ellis KA, Lampe RH, McNair H, Twining BS, Maldonado MT, Brzezinksi MA, Kuzminov FI, Thamatrakoln K, Till CP, Bruland KW, Sunda WG, Bargu S, Marchetti A. Diatom transcriptional and physiological responses to changes in iron bioavailability across ocean provinces (2017) *Frontiers in Marine Science* www.frontiersin.org/articles/10.3389/fmars.2017.00360/full

4. **Cohen NR**, Ellis KA, Burns W, Lampe RH, Schuback N, Johnson Z, Sañudo-Wilhelmy S, Marchetti A. Iron and vitamin interactions in marine diatom isolates and natural assemblages of the Northeast Pacific Ocean (2017) *Limnology & Oceanography* aslopubs.onlinelibrary.wiley.com/doi/abs/10.1002/lno.10552

3. Marchetti A, Moreno C, **Cohen NR**, DeLong K, Twining BS, Armbrust EV, Lampe RH. Development of a molecular-based iron-limitation index for bloom-forming pennate diatoms (2017) *Journal of Phycology* www.onlinelibrary.wiley.com/doi/abs/10.1111/jpy.12539

2. Ellis KA, **Cohen NR**, Moreno C, Marchetti A. Cobalamin-independent Methionine synthase distribution and Influence on Vitamin B12 Growth Requirements in Marine Diatoms (2017) *Protist* www.sciencedirect.com/science/article/abs/pii/S1434461016300682

1. Yong C, Patel V, Bang S, **Cohen N**, Millar J, Kim SK. Maturation and Activity of Sterol Regulatory Element Binding Protein 1 is Inhibited by Acyl-CoA Binding Domain Containing 3 (2012) *PLoS ONE* www.journals.plos.org/plosone/article?id=10.1371/journal.pone.0049906

CONFERENCE PRESENTATIONS

Cohen NR, Moran DM, McIlvin MR, Noble AE, McCrow J, Allen AE, Saito MA. The influence of hydrothermal metal inputs on protistan and particle-associated bacterial metabolism in the Lau Basin of the tropical South Pacific Ocean. Ocean Sciences Meeting (OSM). San Diego, CA. February 2020. *Poster presentation*

Cohen NR, Saito MA (and many others). Linking trace metal distributions and metal metabolism in microbial eukaryotes. First Annual Meeting of the Early Career Investigators in Marine Microbial Ecology and Evolution and Fellows in Marine Microbial Ecology. New York City, New York. October 2019. *Poster presentation.*

Cohen NR, Moran DM, McIlvin MR, Noble A, Hawco NJ, Saito MA. Investigating hydrothermal metal inputs and metaproteomes on the Tongan Ridge of the South Pacific Ocean. Gordon Research Conference in Chemical Oceanography. Holderness, NH. July 2019. *Poster presentation.*

Cohen NR, McIlvin MR, Moran DM, Hawco NJ, Held NA, Saunders JK, Brosnahan M, DiTullio G, Lamborg C, McCrow J, Dupont C, Allen A, Saito MA. Dinoflagellates alter functional metabolism along geochemical gradients in the central Pacific Ocean. Aquatic Sciences Meeting (ASLO). San Juan, PR. February 2019. *Oral presentation*

Cohen NR, McIlvin MR, Moran DM, Hawco NJ, DiTullio GR, McCrow JP, Dupont CL, Allen AE, Saito MA. Nitrate, iron and B12 stress in eukaryotic phytoplankton of the central Pacific Ocean. Ocean Carbon & Biogeochemistry Workshop. Woods Hole, MA. June 2018. *Poster presentation.*

Cohen NR, Lampe RH, McNair H, Ellis KA, Kuzminov FI, Brzezinksi MA, Thamatrakoln K, Maldonado MT, Till CP, Bruland KW, Twining BS, Marchetti A. Variations in diatom transcriptional

response to changes in iron availability across ocean provinces. Aquatic Sciences Meeting (ASLO). Honolulu, HI. February 2017. *Oral presentation*

Cohen NR, Jacquot JE, Stemple BS, Sunda WG, Twining BS, Marchetti A. Ferritin gene response to iron stress suggests distinct functional roles in marine diatoms. Ocean Sciences Meeting (OSM). New Orleans, LA. February 2016. *Poster presentation*

Cohen NR, Burns W, Benjamin J, Schuback N, Sañudo-Wilhelmy S, Marchetti A. Iron and vitamin in diatoms: an enrichment experiment. ASLO. Grenada, Spain. February 2015. *Oral presentation by W Burns*

Cohen NR, Benjamin J, Burns W, Schuback N, Marchetti A. Influences of iron and biotin on biotin metabolism in a marine organism. Ocean Sciences Meeting (OSM). Honolulu HI. February 2014. *Poster presentation.*

COAUTHORED CONFERENCE ABSTRACTS

Twining BS, Mann E, **Cohen NR**, Marchetti A. Controls on phytoplankton iron quotas in natural systems. Ocean Sciences Meeting (OSM). San Diego, CA. February 2020. *Oral presentation*

Kelly RL, **Cohen NR**, Gonzalez-Pinedo P, Hawco NJ, Lombard F, Bourdin G, John S. The effects of trace metals on global microbial communities: trace metal analyses from the TARA Pacific Expedition. Ocean Sciences Meeting (OSM). San Diego, CA. February 2020. *Poster presentation*

Thamatrakoln K, Kranzler C, Brzezinski MA, Maniscalo MA, **Cohen NR**, Lampe RH, Mack J, Latham JR, Talmy D, Twining BS, Marchetti A. Synergistic impacts of viral infection and iron limitation on diatom-mediated biogeochemical cycling. Ocean Sciences Meeting (OSM). San Diego, CA. February 2020. *Poster presentation*

Saito MA, McIlvin MR, Chan EW, Moran DM, Searle B, **Cohen NR**, Kellogg MM, Chmiel R, Lopez P, Pacheco F, Anderson , Johnson RJ, Jakuba M, Breier JA. Gradients in functional capabilities in the Sargasso Sea as determined by metaproteomes collected by the biogeochemical AUV Clio. Ocean Sciences Meeting (OSM). San Diego, CA. February 2020. *Oral presentation*

Marchetti A, Neave E, Seim H, Gifford S, Walsh S, Mena C, Paez-Rosas D, Pablo Munoz, J, Espinoza E, **Cohen NR**, Moreno C, Haines S, Guevera N, Torano O. Factors influencing plankton community structure in the Galapagos Archipelago. Galapagos Research Symposium. San Cristobal Island, Ecuador. June 2019. *Oral presentation*

Mann E, **Cohen NR**, Raushenberg S, Lampe RH, Jacquot J, Marchetti A, Twining BS. Metal Quotas in Diatoms from the California Current Iron Mosaic. Ocean Sciences Meeting (OSM). Portland, OR. February 2018. *Poster presentation*

Lampe RH, Mann E, **Cohen NR**, Till CP, Thamatrakoln K, Kuzminov FI, Brzezinksi MA, Bruland KW, Twining BS, Marchetti A. Different iron storage strategies among bloom-forming diatoms. Ocean Sciences Meeting (OSM). Portland, OR. February 2018. *Oral presentation*

Maniscalco MA, McNair H, Lampe RH, **Cohen NR**, Ellis KA, Marchetti A, Twining BS, Kuzminov FI, Till CP, Brown M, Coale T, Bruland KW, Brzezinksi MA, Thamatrakoln K. Molecular drivers behind increased Si:N uptake in an iron stressed diatom assemblage. Ocean Sciences Meeting (OSM). Portland, OR. February 2018. *Oral presentation*

Marchetti A, Gifford SM, Seim H, **Cohen NR**, Moreno CM, Haines S, Neave E, Walsh SJ, Paez-Rosas D, Mena C. Impacts of the 2015/16 El Niño Event on Microbial Community Dynamics in the Galapagos Archipelago. Ocean Sciences Meeting (OSM). Portland, OR. February 2018. *Oral presentation*

Lampe RH, **Cohen NR**, Ellis KA, Bruland KW, Maldonado MT, Brzezinksi MA, Thamathrakoln K, Twining BS, Marchetti A. Divergent gene expression among phytoplankton taxa in response to upwelling. Aquatic Sciences Meeting (ASLO). Honolulu, HI. February 2017. *Oral presentation*

Ellis K, **Cohen NR**, Moreno C, Marchetti A. Cobalamin-independent methionine synthase distribution and its influence on vitamin B12 growth requirements in marine diatoms. Ocean Sciences Meeting (OSM). New Orleans, LA. February 2016. *Oral presentation*

Marchetti A, Robert M, **Cohen NR**, Twining BS, Harrison PJ. Altered phytoplankton dynamics associated with the North Pacific Blob provides a glimpse of future warming oceans. Ocean Sciences Meeting (OSM). New Orleans, LA. February 2016. *Oral presentation*

Twining BS, Jacquot JE, Rauschenberg S, Enright J, Marchetti A, **Cohen NR**, Brown M, Parker C, Bruland KW. Response of phytoplankton iron contents to gradients in iron availability in the California Current System. (OSM) New Orleans, LA. February 2016. *Oral presentation*

INVITED SEMINAR TALKS

Cohen NR, McIlvin MR, Moran DM, Hawco NJ, Held NA, Saunders JK, Brosnahan M, DiTullio G, Lamborg C, McCrow J, Dupont C, Allen A, Saito MA. Dinoflagellates alter functional metabolism along geochemical gradients in the central Pacific Ocean. Biology Department Seminar, Woods Hole Oceanographic Institution. Woods Hole, MA. March 2019.

Cohen NR, McIlvin MR, Moran DM, Held N, Saunders J, Hawco NJ, Brosnahan M, DiTullio GR, Lamborg C, McCrow JP, Dupont CL, Allen AE, Saito MA. Contrasting functional metabolic signatures in marine dinoflagellates across a geochemical gradient in the central Pacific Ocean. Paleo/Environmental Seminar, University of Southern California. Los Angeles, CA. January 2019.

Cohen NR, McIlvin MR, Moran DM, Hawco NJ, DiTullio GR, Lamborg C, McCrow JP, Dupont CL, Allen AE, Saito MA. Contrasting functional metabolic signatures in marine dinoflagellates across a geochemical gradient in the central Pacific Ocean. Annual Meeting of the Center for Marine Robotics. Woods Hole, MA. September 2018.

Cohen NR, Mann E, McCrow JP, Allen AE, Twining BS, Marchetti A, Saito MA (and many others). Iron-related molecular physiology of marine protists: Individual genes to community transcriptomes and proteomes. Marine Chemistry and Geochemistry Departmental Seminar, Woods Hole Oceanographic Institution. Woods Hole, MA. April 2018.

Cohen NR, Jacquot JE, Stemple BS, Sunda WG, Twining BS, Marchetti A. Ferritin gene expression patterns among centric and pennate diatoms. Marine Productivity Group. Duke University, Durham NC. 2015.

WORKSHOPS & TECHNICAL TRAINING

Carpentries Instuctor, training in best practice techniques for teaching data science and computantional skills in Carpentries workshops that can be used broadly across disiplines, with an emphasis on creating inclusive and positive learning environments. *Certified September 2020*

Writing a Better Science Proposal Workshop, guidance and practical training in writing federal, state or private research grants. Instructed by Dr. Rebecca Gast. *Woods Hole Oceanographic Institution, Woods Hole MA*. Summer 2020.

Machine Learning Bootcamp, training in machine learning approaches (supervised, unsupervised, reinforcement) implemented in Python. *Woods Hole Oceanographic Institution, Woods Hole MA*. October 2019.

Nextprof Science 2019, future faculty preparation program with an emphasis on diversifying academic STEM fields. *University of Michigan, Ann Arbor MI.* May 2019.

May Institute's Targeted Proteomics with Skyline Workshop, technical course on targeted proteomic approaches achieved through selected reaction monitoring (SRM), parallel reaction monitor-

ing (PRM) and data dependent acquisition (DDA)-based mass spectrometry. *Northeastern University, Boston MA.* April 2019.

Trace metal preconcentration, training in seawater preconcentration using the seaFAST automated system and trace metal quantification via inductively coupled plasma mass spectrometry.*Laboratory of Seth John, University of Southern California, Los Angeles, CA.* January 2019.

Biogeoscapes Workshop, planning meeting for launching an international, intercalibrated new program linking bioactive elements with ocean metabolism. *Woods Hole, MA.* November 2018.

Tara Pacific Science Meeting, presented updates on trace metal analyses (Pb, Fe, Zn, Mn, Cu, Ni, Cd, Co) along the Tara Pacific cruise track conducted in the laboratory of Seth John (USC) while discussing synergies and data sharing plans. *Lorient, France.* October 2018.

NSF OCB Summer Workshop, discussions centered on experimental evolution using marine microbes, incorporating stoichiometry and physiology into biogeochemical models, the influence of microzooplankton on carbon export, polar response to global change, and coastal/offshore long-term ecological research program insights – *Woods Hole MA.* June 2018.

EGOGEO Workshop, amplicon sequencing and metagenomics training. *University of Hawai'i at Monoa.* July 2016.

NSF OCB Workshop, discussed project progress and collaborations regarding data obtained from California Current System research cruise in July 2014 (IRNBRU). *UNC Chapel Hill.* May 2015.

Next Generation Sequencing Workshop, hands-on de novo assembly practice and raw sequence prep. *UNC Chapel Hill.* August 2014.

NSF OCB Workshop, discussion-based meeting focused on bridging the gaps between marine plankton physiology, genetic diversity, and global biogeochemical processes. *Bigelow Laboratory for Ocean Science, East Boothbay ME.* May 2014.

Solid phase extraction technique, training in seawater vitamin preconcentration used in preparation for vitamin quantification via liquid chromatography/mass spectrometry. *Laboratory of Sergio Sanudo-Wilhelmy, University of Southern California, Los Angeles, CA.* August 2013.

COMMUNITY SERVICE

Everyday Ethics Workshop Co-organizer, facilitated discussions and a Q&A panel regarding best practices in publishing, authorship, data sharing and reproducibility in the ocean science community – *Woods Hole Oceanographic, Woods Hole MA.* August 2020

Facilitator, ethics guidelines and case studies with Summer Student Fellows and Partnership Education Program undergraduates – *Woods Hole Oceanographic, Woods Hole MA.* July 2020

Panelist, Q&A with Summer Student Fellows and Partnership Education Program undergraduates navigating the graduate school admission process – *Woods Hole Oceanographic, Woods Hole MA.* July 2019

Sisters in STEM mentor, 6-8th grade students – *Cape Cod Community College, West Barnstable MA.* October 2018

Science Mentor, middle & high student science projects – *Lawrence School, Falmouth MA & Bourne High School, Bourne MA.* January 2018

Guest instructor, introduced the concept of coastal upwelling to middle school students – *Afterschool program at the Morehead Planetarium, Chapel Hill NC.* December 2015

Guest instructor, led a series of presentations to groups of 6th, 7th and 8th graders concerning the roles of phytoplankton in the surface ocean and their mechanisms for acquiring iron. Presented findings

in relation to a research cruise that took place in July 2014, of which their science teacher, Miriam Sutton, participated on – *Harker's Island Elementary school, Harker's Island, NC.* May & November 2014

Outreach coordinator, orchestrated departmental involvement in a large outreach event in which interactive booths and oral talks showcasing research to K-12 students and families – *North Carolina's Museum of Natural Sciences, Raleigh NC.* April 2012

Guest instructor, introduced molecular biology as a guest scientist to K-12 children and teenagers by explaining the importance of phytoplankton in the ocean through live demonstrations – *Afterschool program at the Morehead Planetarium, Chapel Hill NC.* March 2011

Reviewer, *BMC Molecular Biology, Coral Reefs, Ecology Letters, Journal of Phycology, Journal of Plankton Research, Journal of Proteome Research, Limnology & Oceanography, Marine Genomics, mSystems, Science Advances, U.S National Science Foundation*

SCIENCE COMMUNICATION

Clio Autonomous Underwater Vehicle (AUV) media coverage during 2019 BATS-WHOI cruise:
instagram.com/explore/tags/ClioAUV/

Maintains blog with teaching resources and coding/graphics tutorials:
nataliercohen.wordpress.com/blog

Coordinator of the Marchetti Lab Facebook blog (2016-2017):
facebook.com/Marchetti-Lab-The-University-of-North-Carolina-at-Chapel-Hill-1662111674006291

Contributing writer of the UNC Marchetti Lab website: marchettilab.web.unc.edu/natalies-page

Guest blogger on the El Nino Research Cruise News Blog: galapagosscience.wordpress.com

TEACHING EXPERIENCE

Partnership Education Program (PEP) Co-Instructor, introduced biological oceanography (biological carbon pump, coastal eutrophication, plankton identification and phytoplankton ecology) to undergraduate students through lectures, microscopy, graphing and statistics with R, coastal field work and a weekend research cruise onboard a sailing research vessel. The PEP program seeks to promote diversity in Woods Hole science by recruiting students with backgrounds traditionally underrepresented in STEM. – *Sea Education Association*, Falmouth MA. June 2018

Duke TIP Instructor, taught core coastal biological and oceanographic concepts to rising 9th graders through interactive classroom activities and field expeditions in the course "Marine Biology: Near Shores and Oceans" – *Duke University Marine Laboratory, Beaufort NC.* June-July 2017

Guest instructor, designed and led five classes (1 module) within the undergraduate course "Marine Phytoplankton" – *UNC Chapel Hill.* November 2016

Graduate Research Consultant for the graduate course Biological Oceanography, instructed undergraduate and graduate students with field work design and execution in exploring the physical, chemical and biological parameters of the dynamic Neuse River Estuary in North Carolina – *UNC Chapel Hill.* 2013-2016

Assistant Grader for the graduate course "Chemical Oceanography" – *UNC Chapel Hill.* 2013

Teaching Assistant for the undergraduate courses "Oceanography" and "Intro to the Marine Environment" – *UNC Chapel Hill.* 2011-2012.

MENTORING EXPERIENCE

Postdoc mentor to two MIT graduate students via the EAPS Student Advisory Committee – *Woods Hole Oceanographic Institution.* Summer 2020 - present

Second Semester Check-in coordinator, organized event designed to provide support and mentoring to first year graduate students – *UNC Chapel Hill.* February 2016

Graduate student mentor to eight undergraduate and graduate students – *UNC Chapel Hill*:

• Nathalie Eegholm (2016-2017): Cultured phytoplankton for methanol productio quantification.

• Brooke Stemple (2014-2015): Taxonomically identified diatoms isolated from upwelled Coastal California water via 18S Sanger sequencing, andi nvestigated ferritin gene expression as a part of an Honor's Thesis. PhD student at Notre Dame.

• Wilton Burns (2013-2014): Performed diatom and bacterial cell counts from microcosm iron and vitamin enrichment experiments performed at sea. MS graduate from University of New Hampshire (2017). PhD student at University of Vermont.

• Harry Masters (2012-2013): Performed RNA extractions of coral tissue for metatranscriptomic sequencing.

• Kelsey Ellis (2012): Determined the effects of external B12 supplies on gene expression of the B12-dependent and B12-independent methionine synthase enzymes in diatoms. MS graduate from UNC Chapel Hill (2015). Science Communications and Outreach specialist at Albemarle-Pamlico National Estuary Partnership (APNEP).

• Michael Clear (2012): Assisted in quantifying biotin synthase gene expression as a function of iron and/or biotin status in the coastal diatom Pseudo-nitzschia multiseries.

• Jaime Frungillo (2012): Determined the effects of dissolved macro- and micro-nutrients on nitrogen fixation rates of the cyanobacteria Trichodesmium.

• Kimberly DeLong (2011): Developed a molecular indicator of iron status in the diatom *Fragilariopsis kerguelensis.* MS graduate from University of New Hampshire (2015). PhD student at University of California at Santa Cruz

OCEANOGRAPHIC RESEARCH CRUISES

R/V Atlantic Explorer, BATS to WHOI – June 16th - June 28th 2019
SSV Corwith Cramer, Vineyard Sound & Buzzard's Bay – June 8th – June 11th 2018
R/V Atlantis, tropical & equatorial Atlantic – February 8th – March 14 th 2018
CCGS John P. Tully, Coastal Ocean & Ocean Station Papa – June 7th –23th 2015
Guadalupe River (Galapagos National Park), Galapagos Islands – October 9th–24th 2014
R/V Melville, California Current System – July 3rd–26th 2014
CCGS John P. Tully, Line P transect & Ocean Station Papa – June 7th–25th 2013

PROFESSIONAL ORGANIZATIONS

The Oceanography Society (TOS) · American Association for the Advancement of Science (AAAS) · American Geophysical Union (AGU) · Association for the Sciences of Limnology and Oceanography (ASLO) · Marine Technology Society (MTS) · Phycological Society of America (PSA) · Sigma Xi, UNC Chapel Hill Chapter