

## Robert H. Lampe

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<b>EDUCATION</b>	<b>Scripps Institution of Oceanography, University of California San Diego</b> Ph.D. Oceanography, 2024	
	<b>University of North Carolina at Chapel Hill</b> M.Sc. Marine Sciences, 2018	
	<b>North Carolina State University</b> B.S. Computer Science, 2012	
<b>RESEARCH EXPERIENCE</b>	<b>Woods Hole Oceanographic Institution</b> Postdoctoral Fellow, Advisor: Mak A. Saito	2025 - <i>present</i>
	<b>J. Craig Venter Institute &amp; Scripps Institution of Oceanography</b> Graduate Student, Advisor: Andrew E. Allen	2018 - 2024
	<b>École Normale Supérieure</b> Visiting Graduate Student, Advisor: Chris Bowler	2021
	<b>University of North Carolina at Chapel Hill</b> Graduate Student, Advisor: Adrian Marchetti	2015 - 2018
	<b>North Carolina State University</b> Undergraduate Researcher, Advisor: Astrid Schnetzer	2014 - 2015
<b>FELLOWSHIPS &amp; GRANTS</b>	Simons Foundation Postdoctoral Fellowship in Marine Microbial Ecology, 2025-2028 NSF OPP Postdoctoral Research Fellowship, 2025-2027, <i>declined</i> LaVerne Noyes Fellowship, 2024 Embassy of France in the United States Chateaubriand Fellowship, 2021 UC San Diego Graduate Fellowship Initiative Supplement, 2021 NSF Graduate Research Fellowship, 2017-2020 Phycological Society of America Grant-in-Aid of Research: "A mechanistic understanding of phytoplankton responses to upwelling," 2018, \$2,000 UNC Doctoral Merit Assistantship, 2015-2016 NCSU Division of Academic and Student Affairs Undergraduate Research Grant: "The production and fate of the neurotoxin domoic acid in marine snow aggregates," 2015, \$2,500 NCSU Engineering Foundation Merit Scholarship, 2009-2012	
<b>PUBLICATIONS</b>	[24] <b>Lampe RH</b> , Rabines AJ, Wood-Rocca SM, Schulberg A, Goericke R, Venepally P, Zheng H, Stukel MR, Landry MR, Barton AD, and AE Allen. (in press) Relationships between phytoplankton pigments and DNA- or RNA-based abundances support ecological applications. <i>Biogeosciences</i> Preprint: <a href="https://doi.org/10.5194/egusphere-2024-3285">https://doi.org/10.5194/egusphere-2024-3285</a>	

- [23] Füssy Z, **Lampe RH**, Arrigo KR, Barry K, Brisbin MM, Brussaard CPD, Decelle J, de Vargas C, DiTullio GR, Elbourne LD, Frischer ME, Goodstein DM, Grigoriev IV, Hayes RD, Healey AL, James CC, Jenkins JW, Juery C, Kumar M, Kustka AB, Maumus F, Oborník M, Paulsen IT, Probart I, Saito MA, Schmutz J, Skalický T, Tec-Campos D, Tomelka H, Novák Vanclová AMG, Věchtová P, Venepally P, Wilson-Mortier B, Zengler K, Zheng H, and AE Allen. (2025) [Genome-resolved biogeography of Phaeocystales, cosmopolitan bloom-forming microalgae](#). *Nature Communications* 16, 8559.
- [22] Stukel MR, Allen AE, Barbeau KA, Chabert P, Dovel S, Gangrade S, Kranz SA, **Lampe RH**, Landry MR, Marrec P, Messié M, Miller AJ, Wilkinson G, and MD Ohman. (2025) [Disturbance ecology in a pelagic upwelling biome: Lagrangian frameworks for studying succession](#). *BioScience*, biae144.
- [21] **Lampe RH**, Rabines AJ, Ellman BA, Zheng H, and AE Allen. (2025) [Marine microbial mock communities for validating rRNA gene amplicon sequencing](#). *Microbiology Resource Announcements* 14:e00298-25.
- [20] **Lampe RH**, Coale TH, McQuaid JB, and AE Allen. (2024) [Molecular Mechanisms for Iron Uptake and Homeostasis in Marine Eukaryotic Phytoplankton](#). *Annual Review of Microbiology* 78, 213-32.
- [19] James CC, Allen AE, **Lampe RH**, Rabines AJ, and AD Barton. (2024) [Endemic, cosmopolitan, and generalist taxa and their habitat affinities within a coastal marine microbiome](#). *Scientific Reports* 14, 22408.
- [18] Haghani N, **Lampe RH**, Samuel B, Chalasani S, and MA Matty. (2024) [Identification and characterization of a skin microbiome on \*Caenorhabditis elegans\* suggests environmental microbes confer cuticle protection](#). *Microbiology Spectrum* 12:e00169-24.
- [17] Ternon E, Carter ML, Cancelada L, **Lampe RH**, Allen AE, Anderson C, Prather K, W Gerwick. (2023) [Yessotoxin production and aerosolization during the unprecedented red tide of 2020 in southern California](#). *Elementa: Science of the Anthropocene* 11, 00021.
- [16] **Lampe RH**, Coale TH, Forsch KO, Jabre LJ, Kekuwa S, Bertrand EM, Horák A, Oborník M, Rabines AJ, Zheng H, Rowland E, Andersson AJ, Barbeau KA, and AE Allen. (2023) [Short-term acidification promotes diverse iron acquisition and conservation mechanisms in upwelling-associated phytoplankton](#). *Nature Communications* 14, 7215.
- [15] Satterthwaite EV, Allen AE, **Lampe RH**, Gold Z, Thompson AR, Bowlin N, Swalethorp R, Goodwin KD, Hazen EL, Bograd SJ, Matthews SA, and BX Semmens. (2023) [Toward identifying the critical ecological habitat of larval fishes: An environmental DNA window into fisheries management](#). *Oceanography* 36 (Supplement 1), 90-93.
- [14] Maniscalco MA, Brzezinski MA, **Lampe RH**, Cohen NR, McNair HM, Ellis KA, Brown M, Till CP, Twining BS, Bruland KW, Marchetti A, and K Thamatrakoln. (2022) [Diminished carbon and nitrate assimilation drive changes in diatom elemental stoichiometry independent of silicification in an iron-limited assemblage](#). *ISME Communications* 2, 57.
- [13] Cohen NR, Alexander HA, Krinos AI, Hu SK, and **RH Lampe**. (2022) [Marine microeukaryote metatranscriptomics: sample processing and bioinformatic workflow recommendations for ecological applications](#). *Frontiers in Marine Science* 9, 867007.

- [12] Coale TH, Bertrand EM, **Lampe RH**, and AE Allen. (2022) [Molecular Mechanisms Underlying Micronutrient Utilization in Marine Diatoms](#). In: Falciatore A, Mock T eds. *The Molecular Life of Diatoms*. Springer, Cham.
- [11] James CC, Barton AD, Allen LZ, **Lampe RH**, Rabines A, Schulberg A, Zheng H, Goericke R, Goodwin KD, and AE Allen. (2022) [Influence of nutrient supply on plankton microbiome biodiversity and distribution in a coastal upwelling region](#). *Nature Communications* 13, 2488.
- [10] Kranzler CF, Brzezinski MA, Cohen NR, **Lampe RH**, Maniscalco M, Till CP, Mack J, Latham JR, Bruland KW, Twining BS, Marchetti A, and K Thamatrakoln. (2021) [Impaired viral infection and reduced mortality of diatoms in iron-limited oceanic regimes](#). *Nature Geoscience* 14, 231-237.
- [9] **Lampe RH**, Hernandez G\*, Lin Y-Y, and A Marchetti. (2021) [Representative diatom and coccolithophore species exhibit divergent responses throughout simulated upwelling cycles](#). *mSystems* 6:e00188-21. \*Undergraduate mentee
- [8] **Lampe RH**, Wang S, Cassar N, and A Marchetti. (2019) [Strategies among phytoplankton in response to alleviation of nutrient stress in a subtropical gyre](#). *The ISME Journal* 13. 2984-2997.
- [7] Till CP, Solomon JR, Cohen NR, **Lampe RH**, Marchetti A, Coale TH, and KW Bruland. (2019) [The iron limitation mosaic in the California Current System: factors governing Fe availability in the shelf/near-shelf region](#). *Limnology and Oceanography* 64, 109-123.
- [6] **Lampe RH**, Mann EL, Cohen NR, Till CP, Thamatrakoln K, Brzezinski MA, Bruland KW, Twining BS, and A Marchetti. (2018) [Different iron storage strategies among bloom-forming diatoms](#). *Proceedings of the National Academy of Sciences USA* 115, E12275-E12284.
- [5] **Lampe RH**, Cohen NR, Ellis KA, Bruland KW, Maldonado MT, Peterson TD, Till CP, Brzezinski MA, Bargu S, Thamatrakoln K, Kuzminov FI, Twining BS, and A Marchetti. (2018) [Divergent gene expression among phytoplankton taxa in response to upwelling](#). *Environmental Microbiology* 20, 3069-3082.
- [4] Cohen NR, Ellis KA, **Lampe RH**, McNair HM, Twining BS, Brzezinski MA, Maldonado MT, Kuzminov FI, Thamatrakoln K, Till CP, Bruland KW, Sunda WG, Bargu S, and A Marchetti. (2017) [Variations in diatom transcriptional responses to changes in iron availability across ocean provinces](#). *Frontiers in Marine Science* 4, 360.
- [3] Cohen NR, Ellis KA, Burns WG, **Lampe RH**, Schuback N, Johnson ZI, Sañudo-Wilhelmy SA, and A Marchetti. (2017) [Iron and vitamin interactions in marine diatom isolates and natural assemblages of the Northeast Pacific Ocean](#). *Limnology and Oceanography* 62, 2076-2096.
- [2] Marchetti A, Moreno CM, Cohen NR, Oleinikov I, Delong K, Twining BS, Armbrust EV, and **RH Lampe**. (2017) [Development of a molecular-based index for assessing iron status in bloom-forming pennate diatoms](#). *Journal of Phycology* 53, 820-832.
- [1] Schnetzer A, **Lampe RH**, Benitez-Nelson CR, Marchetti A, Osburn CL, and AO Tatters. (2017) [Marine snow formation by the toxin-producing diatom, \*Pseudo-nitzschia australis\*](#). *Harmful Algae* 61, 23-30.

Coale TH, **Lampe RH**, Tan M, Rowland E, Füssy Z, Venepally P, Zheng H, McCrow J, Bertrand EM, and AE Allen. (in revision) Molecular and physiological acclimation to low light and iron scarcity in globally abundant oceanic pelagophyte. Preprint: <https://doi.org/10.21203/rs.3.rs-6701642/v1>

Selph KE, **Lampe RH**, Yingling N, Bhabu R, Kranz SA, Allen AE, and MR Landry. (in revision) Phytoplankton community composition in the oligotrophic Argo Basin of the Eastern Indian Ocean. Preprint: <https://doi.org/10.1101/2025.08.14.670423>

Satterthwaite EV, Ruiz TD, Patin NV, Alksne MN, Thomas L, Dinasquet J, **Lampe RH**, Chan KG, Patrick N, Allen AE, Baumann-Pickering S, and BX Semmens. (in revision) Microbial and small zooplankton communities predict density of baleen whales in the southern California Current Ecosystem. Preprint: <https://doi.org/10.1101/2025.09.25.678658>

**Lampe RH**, Wood-Rocca SM, and AE Allen. (in revision) Phytoplankton community responses to environmental change in the California Current Ecosystem.

Steck V, **Lampe RH**, Bhakta S, Marrufo KC, Adams JC, Sachdev E, Forsch KO, Barbeau KA, Allen AE, and JM Diaz. (in review) Atypical phosphatases drive dissolved organic phosphorus utilization by phosphorus-stressed phytoplankton in the California Current Ecosystem. Preprint: <https://doi.org/10.1101/2025.04.09.648040>

de Souza A, Gu S, Kranz SA, Rose J, **Lampe RH**, Io KH, Deng L, Allen AE, Liu H, Follett C, Landry MR, and N Cassar. (in review) Coastal hotspots of biological nitrogen fixation in an undersampled region of the eastern Indian Ocean.

Patin NV, Jacobson EK, Gold Z, Dinasquet J, Van Cise AM, Ellman B, **Lampe RH**, Schulberg A, Bowlin N, Freedman R, Allen A, Satterthwaite E, and BX Semmens. (in review) A framework for maximizing detections of rare eDNA targets: a case study of delphinids.

Landry ML, Laiz-Carrión R, Kranz SA, Selph KE, Stukel MR, Malca E, Die D, Beckley LE, Décima M, Swalethorp R, Quintanilla JM, Yingling N, Davies C, Traboni C, Borrego-Santos R, Goes JL, deSouza A, Fernández PR, Pennino G, Kim LE, Kehinde O, **Lampe RH**, Allen AE, Kelly TB, Muhling BA, Gu S, Cassar N, Laget M, Biard T, Liu H, Io KH, Shiroza A, Gawley C, Fender CK, Rose HM, Jivanjee A, Matisons L. (in review) Overview of BLOOFINZ/INDITUN investigations of the southern bluefin spawning region off northwest Australia, January-March 2022.

James CC, Hou L, **Lampe RH**, Barbeau KA, Barton AD, Stukel MR, and AE Allen. (in prep) Taxon-specific productivity diversity patterns in a coastal upwelling ecosystem.

## MEETING & TRAVEL AWARDS

**ASLO** Aquatic Sciences Meeting Student Travel Grant, 2023

**UCSD Graduate & Professional Student Association** Travel Award, 2023

**Scripps Oceanography** Graduate Student Travel Award, 2021, 2023, 2024

**ASLO** Aquatic Sciences Meeting Student Registration Award, 2021

**Ocean Carbon & Biogeochemistry (OCB)** Ocean Nucleic Acids 'Omics Inter-calibration and Standardization Workshop selected participant, 2020

**Molecular Life of Diatoms IV** Best Poster, 2017

**Molecular Life of Diatoms IV** Travel Award, 2017

**Southeastern Biogeochemistry Symposium** Travel Award, 2017

**ASLO** Aquatic Sciences Meeting Student Travel Award, 2017

**SELECT  
PRESENTED  
ABSTRACTS**

- Ocean Sciences Meeting**, Glasgow, Scotland (*upcoming, 2026*). Primary vitamin B<sub>12</sub> limitation of phytoplankton growth in the Amundsen Sea polynya.
- PSA-ISOP-ISEP Joint Meeting**, Seattle, WA (2024). Diatom abundance, diversity, and gene expression patterns in a coastal upwelling biome (talk).
- Ocean Sciences Meeting**, New Orleans, LA (2024). Diatom abundance, diversity, and gene expression patterns in a coastal upwelling biome (talk).
- Molecular Life of Diatoms 7**, San Diego, CA (2023) Diatom abundance and diversity patterns in a coastal upwelling biome (talk).
- Aquatic Sciences Meeting**, Palma de Mallorca, Spain (2023) Short-term acidification promotes diverse iron acquisition and conservation mechanisms in upwelling-associated phytoplankton (talk).
- CalCOFI Conference**, San Diego, CA (2022). Drivers of diatom abundances and diversity in a coastal upwelling biome (talk).
- LTER All Scientists' Meeting**, Pacific Grove, CA (2022). Drivers of diatom abundances and diversity in a coastal upwelling biome (poster).
- OCB Scoping Workshop: Laying the foundation for a potential future BioGeoSCAPES program**, Virtual (2021). Drivers of diatom abundances and diversity in a coastal upwelling biome (poster).
- Molecular Life of Diatoms 6**, Virtual (2021). Upwelling-associated phytoplankton display resistance to ocean acidification (poster).
- Aquatic Sciences Virtual Meeting** (2021). Upwelling-associated phytoplankton display resistance to ocean acidification (talk).
- CalCOFI Conference**, Virtual (2020). NOAA-CalCOFI Ocean Genomics (NCOG): Six years and counting (poster).
- Phycological Society of America Virtual Meeting** (2020). Resistance to ocean acidification in upwelling-associated phytoplankton communities (talk).
- Ocean Sciences Meeting**, San Diego, CA (2020). The distribution and diversity of diatoms in a coastal upwelling biome (poster).
- Ocean Sciences Meeting**, Portland, OR (2018). Different iron storage strategies in bloom-forming diatoms (talk).
- Molecular Life of Diatoms IV**, Kobe, Japan (2017) Divergent gene expression among phytoplankton taxa in response to upwelling (poster).
- Aquatic Sciences Meeting**, Honolulu, HI (2017) Divergent gene expression among phytoplankton taxa in response to upwelling (talk).

**SELECT  
CO-AUTHORED  
ABSTRACTS**

- Li H, **Lampe RH**, Morton PL, Goes JI, Selph KE, Kranz S, Rabines A, and Allen A. (*upcoming, 2026*) Nitrogen-Iron Serial Limitation in Phytoplankton Communities in the Eastern Subtropical Indian Ocean. Ocean Sciences Meeting. Glasgow, Scotland.
- Schulberg A, Stief P, Füssy Z, **Lampe RH**, Zheng H, Li HT, and Allen A. (*upcoming, 2026*) Eukaryotic Nitrate Dissimilation Pathway Supports Phytoplankton Survival Under Anoxia. Ocean Sciences Meeting. Glasgow, Scotland.
- Morton P, Kelly T, and **Lampe RH**. (2025). Sources and inventories of bioactive trace elements along the Indonesian Throughflow. Aquatic Sciences Meeting. Charlotte, NC (talk).
- de Souza A, Gu S, Kranz S, Rose J, **Lampe R**, Liu H, Landry M, Cassar N. (2025) Coastal hotspots of biological nitrogen fixation in undersampled regions of the Indian Ocean. Aquatic Sciences Meeting. Charlotte, NC (talk).

- George EE, Xue M, Wood SM, Li HT, Schreier JE, **Lampe RH**, Zheng H, McCarthy JK, Moran MA, and Allen AE. (2024) A crowded phycosphere: microbial interactions between diatoms, bacteria and nanoflagellates. PSA-ISOP-ISEP Joint Meeting, Seattle, WA (talk).
- Wood SM, Rabines A, Zheng H, Füssy Z, Thukral M, **Lampe RH**, Schulberg A, Moore BS, and Allen AE. (2024) Environmental detection of *Pseudo-nitzschia spp.* and domoic acid biosynthesis in the Santa Barbara Channel, 2019-2023. PSA-ISOP-ISEP Joint Meeting, Seattle, WA (talk).
- Chaudhary A, Macho J, Garza E, **Lampe R**, Allen A, Dupont C, and Barbeau K. (2023) Iron acquisition in marine heterotrophic bacteria and the associated impact of iron bioavailability on microbial turnover of organic matter. Aquatic Sciences Meeting, Palma de Mallorca, Spain (talk).
- Ellman BA, **Lampe RH**, and Allen AE. (2022) Monitoring Phytoplankton in the California Current with an Automatic Imaging Flow Cytometer. CalCOFI Conference, San Diego, CA (poster).
- Wood S, Rabines A, **Lampe R**, and Allen A. (2022) Pseudo-nitzschia composition and diversity across the southern California Current System (2014-2020). Ocean Sciences Meeting, Virtual (talk).
- Marchetti A, **Lampe RH**, Whitehouse L, Lin J, Torano O, Pierce E, Maldonado MT, Jian G, Hurst MP, Till CP, Freiberger R, Mellet T. (2020) Phytoplankton responses to upwelling dynamics under varying iron conditions. Ocean Sciences Meeting, San Diego, CA (poster).
- Allen AE, Turnšek J, Coale TH, Barbeau KA, Brunson JK, Bielinski VA, **Lampe RH**. (2020) New insights into direct cell surface-to-chloroplast trafficking of organic and inorganic iron substrates in marine diatoms. Ocean Sciences Meeting, San Diego, CA (poster).
- Barbeau K, Forsch K, Manck L, Fulton K, Fenton M, Coale T, Schwenck SM, **Lampe RH**, Stukel MR. (2020) Iron limitation and macronutrient dynamics associated with cross-shore filaments in the California Current system. Ocean Sciences Meeting, San Diego, CA (talk).
- Mann EL, Cohen NR, Rauschenberg S, **Lampe RH**, Jacquot JE, Marchetti A, and Twining BS. (2018) Metal quotas in diatoms from the California Current Iron Mosaic. Ocean Sciences Meeting, Portland, OR (poster).
- Kinsey JD, Schnetzer A, Bianchi TS, Ziervogel K, **Lampe RH**, and Osburn CL. (2016) Autochthonous Optical Signals in CDOM from Phytoplankton Culture and Open Ocean Observations. Ocean Sciences Meeting, New Orleans, LA (poster).

**PROFESSIONAL SERVICE** **Journal Reviewer** (# of manuscripts): *Archives of Microbiology* (1), *Applied and Environmental Microbiology* (4), *Biogeosciences* (3), *Deep Sea Research Part II* (1), *Ecology and Evolution* (2), *Environmental Microbiology* (1), *Frontiers in Marine Science* (1), *Limnology and Oceanography* (2), *Limnology and Oceanography: Methods* (1), *Marine Genomics* (1), *Marine Micropaleontology* (1), *Microbiology Spectrum* (1), *Journal of Geophysical Research: Oceans* (1), *Journal of Phycology* (1)

**SIO Ocean Technology Faculty Hire**, 2024, Student Committee Member

**Molecular Life of Diatoms 7**, 2023, Conference Organizing Committee Member

**SIO Biological Oceanography Curriculum Review**, 2021-2022, Committee member

**SIO Ecology Seminar Series**, 2019-2020. Organizing committee member.

**UNC Marine Sciences Graduate President**, 2016 - 2017. Represented graduate student interests to the department administration and faculty. Organized various scientific, social, and outreach activities.

## RESEARCH MENTORING

**CCE LTER Research Experiences for Undergraduates (NSF REU)**, Graduate Student Assistant, 2023 (2 students); Lead Mentor, 2020 (1 student)

**UNC Increasing Diversity and Enhancing Academia (NSF IUSE:GEOPaths)**, 2017 (1 student)

**UNC Biology 395 - Undergraduate Research in Biology**, 2016 (2 students)

## TEACHING EXPERIENCE

**Teaching Assistant (UNC-CH)**, Spring 2017. MASC504 - Biological Oceanography  
**NCSU Tutorial Center**, 2014 - 2015. Assisted students with organic chemistry and study skills. Certified Level II College Reading and Learning Association Tutor.

## SCIENTIFIC OUTREACH

**Skype a Scientist**, 2021, 2024. Participant.

**National Ocean Sciences Bowl (Garibaldi Bowl)**, 2021. Volunteer.

**High Tech High Mesa**, 2021. Genes in Space Team Mentor.

**SciREN San Diego**, 2020. Organizing committee member to coordinate lesson plan development between researchers and K-12 educators.

**The League of Extraordinary Scientists and Engineers (LXS)**, 2019 - 2020. Volunteer for educational events in the San Diego region on marine science and genomics.

**Southern California Science Olympiad**, 2019. Event volunteer.

**Scripps Community Outreach for Public Education (SCOPE)**, 2019. Volunteer.

**North Carolina Science Olympiad**, 2014 - 2018 (Spring Semesters). Event leader and test writer for regional and state tournaments.

**SciREN Triangle**, 2015, 2017. Developed lesson plans targeting state and federal education standards about the ocean, phytoplankton, DNA, and microbiomes.

## RESEARCH CRUISES

2023 (11 days) **CalCOFI (2304SH)**, *FSV Bell M. Shimada*, California Current

2023 (12 days) **ETNP OMZ 2023 (SR2304)**, *R/V Sally Ride*, Eastern Tropical North Pacific

2022 (8 days) **Enhanced CalCOFI (2210RL)**, *FSV Reuben Lasker*, California Current

2022 (2 x 1 day) **Plumes and Blooms**, *R/V Shearwater*, Santa Barbara Channel

2022 (57 days) **Eastern IO Habitat (BLOOFINZ-IO, RR2201)**, *R/V Roger Revelle*, Eastern Indian Ocean

2021 (32 days) **California Current Ecosystem LTER Process Cruise 10 (CCE-P2107, RR2105)**, *R/V Roger Revelle*, California Current

2020 (13 days) **CalCOFI (2010SR, SR2008)**, *R/V Sally Ride*, California Current

2019 (32 days) **California Current Ecosystem LTER Process Cruise 9 (CCE-P1908, AT42-15)**, *R/V Atlantis*, California Current

2016 (10 days) **High-Resolution Underway N<sub>2</sub> Fixation Measurements (AE1617)**, *R/V Atlantic Explorer*, Sargasso Sea