

Robert H. Lampe

- EDUCATION** **Scripps Institution of Oceanography, University of California San Diego**
Ph.D. Oceanography, 2018 - present (*Graduating December 2024*)
- University of North Carolina at Chapel Hill**
M.Sc. Marine Sciences, 2015 - 2018
- North Carolina State University**
B.S. Computer Science, 2009 - 2012
- RESEARCH EXPERIENCE** **J. Craig Venter Institute &** 2018 - present
 Scripps Institution of Oceanography
Graduate Student, Advisor: Andrew E. Allen
- École Normale Supérieure** 2021
Visiting Graduate Student, Advisor: Chris Bowler
- University of North Carolina at Chapel Hill** 2015 - 2018
Graduate Student, Advisor: Adrian Marchetti
- North Carolina State University** 2014 - 2015
Undergraduate Researcher, Advisor: Astrid Schnetzer
- FELLOWSHIPS & GRANTS** Simons Foundation Postdoctoral Fellowship in Marine Microbial Ecology, 2025-2028
NSF OPP Postdoctoral Research Fellowship, 2025-2027, *declined*
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
- PUBLICATIONS** [20] **Lampe RH**, Coale TH, McQuaid JB, and AE Allen. (in press) [Molecular Mechanisms for Iron Uptake and Homeostasis in Marine Eukaryotic Phytoplankton](#). *Annual Review of Microbiology* 78.
- [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, Kekuewa 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.
- Füßy Z, **Lampe RH**, Arrigo KR, Barry K, Brisbin MM, Brussaard C, Decelle J, de Vargas C, DiTullio GR, Elbourne L, Frischer ME, Goodstein DM, Grigoriev IV, Hayes RD, Healey AL, James CC, Jenkins J, Juery C, Kumar M, Kustka AB, Maumus F, Oborník M, Paulsen I, Probart I, Saito MA, Schmutz J, Skalický T, Tec-Campos D, Tomelka H, Novák Vanclová AMG, Věchtová P, Wilson-Mortier B, Zengler K, Zheng H, and AE Allen. (in revision) Genome-resolved biogeography of Phaeocystales, cosmopolitan bloom-forming microalgae. Preprint: <https://doi.org/10.21203/rs.3.rs-4339559/v1>

**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 Intercalibration 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
- North Carolina State University** Spring Undergraduate Research Symposium Outstanding Poster, 2015

**SELECT
PRESENTED
ABSTRACTS**

- 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**

- Füssy Z, **Lampe RH**, and Allen AE. (2024) Genome-resolve biogeography of Phaeocystales, cosmopolitan bloom-forming algae. PSA-ISOP-ISEP Joint Meeting, Seattle, WA (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).
- Coden F, Patin N, Allen A, **Lampe R**, Ellman B, and Semmens B. (2024) Plenty of Fish in the Molecular Sea: Testing Environmental DNA for Teleost Biomonitoring Applications. Ocean Observing in California, San Diego, CA (poster).
- Patin N, Gold Z, Allen A, Lampe R, Ellamn B, Semmsn B. (2024) eDNA Four Ways: An intercalibration experiment of sampling and processing methods for eDNA collection on CalCOFI. Ocean Observing in California, San Diego, CA (poster).
- Schulberg A, McCarthy J, Stief P, Lampe R, Li H, Füssy Z, and Allen A. (2024) Characterizing diatom dissimilatory nitrite reductase activity under anoxia and iron limitation. Ocean Sciences Meeting, New Orleans, LA (poster).

- 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).
- James CC, Allen AE, Zeigler L, **Lampe R**, Rabines A, Zheng H, Goericke R, Goodwin K, and Barton AD. (2022) Rates of endemism and cosmopolitanism within a coastal upwelling marine microbiome. Ocean Sciences Meeting, Virtual (talk).
- Coale T, Tan M, Venepally P, Zheng H, Rowland E, **Lampe R**, Fussy Z, Bertrand E, Allen A. (2021) Iron/light co-limitation in a globally significant pelagophyte. Aquatic Sciences Meeting, Virtual (talk).
- Marchetti A, **Lampe RH**, Whitehouse L, Lin J, Torano O, Pierce E, Maldonado MT, Jian G, Hurst MP, Till CP, Freiburger 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): *Applied and Environmental Microbiology* (4), *Biogeosciences* (3), *Ecology and Evolution* (1), *Environmental Microbiology* (1), *Frontiers in Marine Science* (1), *Limnology and Oceanography* (2), *Limnology and Oceanography: Methods* (1), *Marine Genomics* (1), *Marine Micropaleontology* (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.

NCSU Honors Program, 2016, 2018, 2021. Reviewed and scored applications for admission into the University Honors Program.

**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.

UndertheC Blog, 2015 - 2017. Contributor for a graduate student-run marine science blog.

**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 N₂ Fixation Measurements (AE1617)**,
R/V Atlantic Explorer, Sargasso Sea

Total: 177 days at sea