Robert H. Lampe

9500 Gilman Drive
Mail Code 0218
La Jolla, CA 92093

+1-919-523-6109
rlampe@ucsd.edu
robhlampe.com

EDUCATION

Scripps Institution of Oceanography, University of California San Diego
Ph.D. Candidate, Biological Oceanography, 2018 - present

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

Chateaubriand Fellowship, 2021

UC San Diego Graduate Fellowship Initiative Supplement, 2021

NSF Graduate Research Fellowship, 2017-2020

UNC Doctoral Merit Assistantship, 2015-2016

NCSU Engineering Foundation Merit Scholarship, 2009-2012

RESEARCH GRANTS

Phycological Society of America Grant-in-Aid of Research: "A mechanistic understanding of phytoplankton responses to upwelling," 2018, $2,000

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

JOURNAL ARTICLES

[14] Satterthwaite EV, Allen AE, **Lampe RH**, Gold Z, Thompson AR, Bowlin N, Swalethorp R, Goodwin KD, Hazen EL, Bograd SJ, Matthews SA, and Semmens BX. (2023) Toward identifying the critical ecological habitat of larval fishes: An environmental DNA window into fisheries management. *Oceanography* 36 (Supplement 1), 90-93.

[13] Maniscalco MA, Brzezinski MA, **Lampe RH**, Cohen NR, McNair HM, Ellis KA, Brown M, Till CP, Twining BS, Bruland KW, Marchetti A, and Thamatrakoln K (2022) Diminished carbon and nitrate assimilation drive changes in diatom elemental stoichiometry independent of silicification in an iron-limited assemblage. *ISME Communications* 2, 57.

[12] Cohen NR, Alexander HA, Krinos AI, Hu SK, and **Lampe RH**. (2022) Marine microeukaryote metatranscriptomics: sample processing and bioinformatic workflow recommendations for ecological applications. *Frontiers in Marine Science* 9, 867007.

[11] James CC, Barton AD, Allen LZ, **Lampe RH**, Rabines A, Schulberg A, Zheng H, Goericke R, Goodwin KD, and Allen AE. (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 Thamatrakoln K. (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 Marchetti A. (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 Marchetti A. (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 Bruland KW. (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 Marchetti A. (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 Marchetti A. (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 Marchetti A. (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 Marchetti A. (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 **Lampe RH**. (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 Tatters AO. (2017) Marine snow formation by the toxin-producing diatom, *Pseudo-nitzschia australis*. *Harmful Algae* 61, 23-30.

Lampe RH, Coale TH, Forsch KO, Jabre L, Kekuewa S, Bertrand EM, Horák A, Oborník M, Rabines AJ, Zheng H, Rowland E, Andersson AJ, Barbeau KA, and Allen AE. (in revision) Short-term acidification promotes diverse iron acquisition and conservation mechanisms in upwelling-associated phytoplankton.

Ternon E, Carter ML, Cancelada L, **Lampe RH**, Allen AE, Anderson C, Prather K, Gerwick W. (in revision) Yessotoxin production and aerosolization during the unprecedented red tide of 2020 in southern California.

BOOK CHAPTERS

Coale TH, Bertrand EM, **Lampe RH**, and Allen AE (2022) Molecular Mechanisms Underlying Micronutrient Utilization in Marine Diatoms. In: Falciatore A, Mock T eds. The Molecular Life of Diatoms. Springer, Cham.

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, 2023

Scripps Oceanography Graduate Student Travel Award, 2021

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

PRESENTED ABSTRACTS

Aquatic Sciences Meeting, Palma de Mallorca, Spain (*upcoming*, 2023) Short-term acidification promotes diverse iron acquisition and conservation mechanisms in upwelling-associated phytoplankton (oral).

CalCOFI Conference, San Diego, CA (2022). Drivers of diatom abundances and diversity in a coastal upwelling biome (oral).

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 (oral).

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 (oral).

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 (oral).

Molecular Life of Diatoms IV, Kobe, Japan (2017) Divergent gene expression among phytoplankton taxa in response to upwelling (poster).

Southeastern Biogeochemistry Symposium, Athens, GA (2017) Divergent gene expression among phytoplankton taxa in response to upwelling (oral).

Aquatic Sciences Meeting, Honolulu, HI (2017) Divergent gene expression among phytoplankton taxa in response to upwelling (oral).

UNC Academic Research Conference, Chapel Hill, NC (2016) Out of Light, into the Dark: Molecular Insights into Upwelled Phytoplankton (oral).

N.C. State University Spring Undergraduate Research Symposium, Raleigh, NC (2015) Domoic Acid Production throughout *Pseudo-nitzschia australis* Growth Phases (poster).

State of North Carolina Undergraduate Research & Creativity Symposium, Raleigh, NC (2014) The Production and Fate of a Marine Algal Toxin (poster).

CO-AUTHORED ABSTRACTS

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 sotuhern California Current System (2014-2020). Ocean Sciences Meeting, Virtual (oral).

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 (oral).

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 (oral).

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).

James CC, Barton AD, Zeigler LA, **Lampe RH**, Schulberg A, Zheng H, Goericke R, Goodwin KD, and Allen AE. (2020) The structure and diversity of prokaryotic and eukaryotic plankton communities within the Southern California Bight (2014-2018). Ocean Sciences Meeting, San Diego, CA (poster).

Thamatrakoln K, Kranzler C, Brzezinski MA, Maniscalco MA, Cohen N, **Lampe RH**, Mack J, Latham JR, Talmy D, Twining BS, and Marchetti A. (2020) Synergistic impacts of viral infections and iron limitation on diatom-mediated biogeochemical cycling. 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 (oral).

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

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).

Cohen NR, **Lampe RH**, McNair HM, Ellis KA, Kuzminov FI, Brzezinski MA, Thamatrakoln K, Maldonado MT, Till CP, Bruland KW, Twining BS, and Marchetti A. (2017) Coupling nutrient dynamics with metatranscriptomics to elucidate the responses of diatoms to changing iron availability across ocean provinces. Aquatic Sciences Meeting, Honolulu, HI (oral).

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* (2), *Ecology and Evolution* (1), *Environmental Microbiology* (1), *Frontiers in Marine Science* (1), *Limnology and Oceanography* (1), *Marine Genomics* (1), *Marine Micropaleontology* (1), *Journal of Phycology* (1)

Molecular Life of Diatoms 7 (conference), 2023, 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), 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. 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 (available on website).

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

AFFILLIATIONS

Association for the Sciences of Limnology and Oceanography (ASLO)

Phycological Society of America (PSA)

The Oceanography Society (TOS)

N.C. State University Honors Program, 2009-2012

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_2 Fixation Measurements (AE1617)**, *R/V Atlantic Explorer*, Sargasso Sea

Total: 177 days at sea