

Emily R. Paris

Education

2016 - 2020

Bachelor of Science, UC San Diego
Biochemistry & Cell Biology, Cum Laude with Honors
Minor in Marine Science, Scripps Institution of Oceanography

2024 - 2025

Master of Science, Stanford University
Doerr School of Sustainability, Department of Earth System Science

2020 - 2026

Doctor of Philosophy, Stanford University
Doerr School of Sustainability, Department of Earth System Science

Research Experience

September 2020 - June 2026

Graduate Thesis

Single-cell analysis of microbial activity in hypersaline brines: implications for life on Earth and beyond
Committee: Dr. Anne E. Dekas (advisor), Dr. Christopher A. Francis, Dr. Karen Casciotti, Dr. Jeff S. Bowman, Dr. Manu Prakash (chair)

June 2018 - June 2020

Undergraduate Honors Thesis

Domesticating marine bacteria in micro-orbs for natural product discovery
Advisors: Dr. Bradley S. Moore and Dr. Tristan de Rond
Center for Marine Biotechnology & Biomedicine
Scripps Institution of Oceanography, Skaggs School of Pharmacy & Pharmaceutical Sciences

June 2018 - September 2018

STEM Student Assistant

Agrophotovoltaics: combining solar energy and food production
Advisor: Kathleen Ave
Energy Research and Development, Sacramento Municipal Utility District

Field Experience

April 2025

Research Cruise, Pacific Ocean (14 days)
Chief Scientist: Dr. Anne E. Dekas

September 2024

Research Cruise, Monterey Bay (1 day)
Chief Scientist: Dr. Anne E. Dekas

June 2023

Research Cruise, Gulf of Mexico (19 days)
Chief Scientist: Dr. Jeff S. Bowman

September 2022

Educational Cruise, Monterey Bay (1 day)
Chief Scientist: Dr. Anne E. Dekas

July 2022

Terrestrial Research, Western Australia (15 days)
Chief Scientist: Dr. Jeff S. Bowman

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June 2022 **Research Cruise, Mediterranean Sea** (1 day)
Chief Scientists: Dr. Anne E. Dekas and Dr. Christian Tamburini

November 2019 **Expedition Cruise, Norway** (12 days)
Director: Susan Eaton

April 2019 **Educational Cruise, San Diego** (1 day)
Chief Scientist: Dr. Jennifer Taylor

March 2019 **Educational Cruise, San Diego** (1 day)
Chief Scientist: Dr. Greg Rouse

Teaching Experience

Winter 2025 **Teaching Assistant, Stanford University**
EPS 183: “Astrobiology and Space Exploration”
Coordinated guest speakers, wrote and graded exams
Professor: Dr. Lynn Rothschild

Fall 2024 **Teaching Assistant, Stanford University**
ESS 210: “Environmental Microbiology Techniques Lab”
Managed weekly labs, helped organize field day (R/V John. H Martin)
Professor: Dr. Anne E. Dekas

Winter 2024 **Teaching Assistant, Stanford University**
ES 36N: “Life at the Extremes: From Deep-Sea to Deep Space”
Participated in reading discussions, presented lecture on biogeochemistry
Professor: Dr. Anne E. Dekas

Winter 2019 **Science Education and Communication, Birch Aquarium**
Organized an interactive display on natural products from the sea

2014 - 2026 **Private Tutor**
Instructing middle and high school students in various subjects in individual and group settings, including math, sciences, and writing

Work Experience

Oct. – Nov. 2025 **NASA Test Subject**
Exploration Atmosphere 7, National Aeronautics and Space Administration

June - August 2020 **Laboratory Technician**
Moore Lab, Scripps Institution of Oceanography

March 2019 - May 2020 **STEAM Science Instructor and Assistant**
Sally Ride Science Academy, San Diego, California

Jan. 2019 - May 2020 **Campus Ambassador**

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UC San Diego Admissions

March 2017 - June 2018

Resident Assistant

Revelle College, UC San Diego

Mentees

2023 - 2026

Griffin Lee, Stanford University (undergraduate), Dekas Lab

Fall 2024

Susanna Chen, Ohlone College (undergraduate), Stanford Small Groups

Fall 2024

Aldo Navarrete, Foothill College (undergraduate), Stanford Small Groups

Fall 2024

James Nguyen, De Anza College (undergraduate), Stanford Small Groups

Fall 2023

Parker Roberts, Summit Tahoma (high school), SSTEP

Fall 2022

Lyle Given, Stanford University (undergraduate), Stanford WCC

Outreach & Service

2025 - present

Student Spaceflight Experiments Program, Mission 21 Subject Expert

2022 - present

Skype a Scientist, Speaker

2024 - present

Stanford Nano Shared Facilities Outreach Events, Volunteer

2023 - 2024

Northern California Geobiology Symposium, Co-Chair

2021 - 2023

Stanford Women's Community Center STEM Mentorship Program, Mentor

2019 - 2020

Sedna Epic Expedition and Women's Leadership Workshop, Participant

2018 - 2020

Office for Students with Disabilities, UC San Diego, Scribe

2018 - 2020

Judicial Review Committee, UC San Diego, Participant

2017 - 2019

Revelle College Council at UC San Diego, Representative

2016 - 2017

Emerging Leaders Program at UC San Diego, Project Manager

Memberships

2025 - Present

American Academy of Underwater Sciences, Scientific Diver

2025 - Present

Women Soaring Pilots Association, Pilot

2025 - Present

Soaring Society of America, Pilot

2024 - Present

Geochemical Society, Member

2024 - Present

Future Leaders of Ocean Worlds, Early Career Member

2023 - Present

American Alpine Club, Member

2021 - Present

The Explorers Club, Term Member

2020 - Present

Network for Life Detection, Early Career Member

Invited Talks

2026

Stanford Sustainability Forum, Stanford University, Invited Speaker

2024

The Open University, UK, Invited Speaker

2024

COSPAR Inaugural Meeting, The Royal Society, Invited Speaker

2024

Academic Honors Ceremony, UC San Diego, Keynote Speaker

2023

The Explorers Club, Northern California Chapter, Invited Speaker

2020

Commencement, UC San Diego, Speaker

2020

International Women's Day, UC San Diego, Invited Panelist

2019

Oceanids, UC San Diego, Invited Speaker

2019

Town & Gown, UC San Diego, Invited Speaker

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University Seminars

2024

2024

Bug Club, Stanford University, Presenter

ESScapades, Stanford University, Presenter

Honors & Awards

2025

2025

2024

2023

2023

2020

2019

2019

2019

2017-2019

2018

2018

Outstanding Presentation, Northern California Geobiology Symposium

Scholarship Recipient, Women Soaring Pilots Association

McGee Grant, Stanford University

Outstanding Poster, Northern California Geobiology Symposium

Scholarship Recipient, Historical Diving Society

Outstanding Senior Award, UC San Diego Alumni Association

Eureka! Undergraduate Research Scholar, UC San Diego

Town and Gown Scholar, UC San Diego

Oceanids Outstanding Service Award, UC San Diego

Provost Academic Honors, UC San Diego

SMUD Powering Futures Scholarship, Sacramento, California

F. Thomas Bond Scholarship, UC San Diego

Science Communication Articles & Features

M. George, M. Juberien, **E.R. Paris**. “Cell Sorting in Earth’s Microbial Frontiers: A Journey into a Deep Hypersaline Anoxic Basin.” *nanocollect*, 16 May 2024, <https://nanocollect.com/blog/cell-sorting-in-a-deep-sea-hypersaline-anoxic-basin/>.

J. Garthwaite. “New research on microbes expands the known limits of life on Earth and beyond.” *Stanford Report*, 9 January 2024, <https://news.stanford.edu/stories/2024/01/stanford-study-predicts-new-limit-life-high-salinity>.

E.R. Paris, K. Gallagher (editor). “Exploring Orca Basin.” *Society for Women in Marine Science*, 6 October 2023, <https://swmsmarinescience.com/2023/10/06/exploring-orca-basin/>.

Contributed Talks & Posters

E.R. Paris, A.E. Dekas, and the Oceans Across Space and Time Team. Single-cell analysis of microbial activity in hypersaline brines: implications for life on Earth and beyond, *Talk*, Fourth Annual Northern California Geobiology Symposium, Berkeley, California (2026).

A.E. Dekas, R.S.R. Salcedo, Alex L. Jaffe, **E.R. Paris**, Chloé Baumas. Dark inorganic carbon fixation: a primer. *Shared Talk*, Ocean Carbon & Biogeochemistry, Virtual (2025).

G. Lee, **E. R. Paris**, C. Elbon, C. Pozarycki, S. Buessecker, J. McKaig, M. Desmarais, C. Sephus, E.D. Ingall, P.T. Doran, J.B. Glass, J.S. Bowman, B.E. Schmidt, A.E. Dekas. “Aster-biology”: Investigating star-shaped manganese oxides from a deep-sea hypersaline anoxic basin as markers of early Earth and extraterrestrial life. *Talk*, Third Annual Northern California Geobiology Symposium, Bodega Bay, California (2025).

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E.R. Paris, A. Odenheimer, M.M. Weng, C. Pozarycki, S. Buessecker, S.S. Som, B. Klempay, L. Fisher, C. Sephus, M. Birmingham, T. Plattner, J.M. Weber, M. Towner, E. Quartini, A. Schartup, P.T. Doran, E.D. Ingall, J.S. Bowman, B.E. Schmidt, A.E. Dekas. Decoupled amino acid consumption promotes microbial habitability in acidic brines analogous to ancient Mars. *Talk*, Third Annual Northern California Geobiology Symposium, Bodega Bay, California (2025).

E.R. Paris, B. Klempay, J.S. Bowman, D. Bartlett, A. Odenheimer, P.T. Doran, E.D. Ingall, S. Buessecker, B. E. Schmidt, and A. E. Dekas. Microbial growth is limited by oxygen and organic carbon availability in extreme acidic brines. *Poster*, Second Annual Northern California Geobiology Symposium, Stanford, California (2024).

E.R. Paris, J.S. Bowman, E.D. Ingall, C. Ross, P.T. Doran, M. Desmarais, C. Elbon, J.B. Glass, S. Buessecker, C. Pozarycki, J. McKaig, C. Sephus, V. Hegelein, M. Meister, A.D. Mullen, E. Quartini, B.E. Schmidt, A.E. Dekas, and the Oceans Across Space and Time Team. Rates of autotrophy peak in the anoxic interface of a deep hypersaline anoxic basin. *Poster*, Bay Area Planetary Science Meeting, Mountain View, California (2024).

E.R. Paris, J.S. Bowman, E.D. Ingall, C. Ross, P.T. Doran, M. Desmarais, C. Elbon, J.B. Glass, S. Buessecker, C. Pozarycki, J. McKaig, C. Sephus, V. Hegelein, M. Meister, A.D. Mullen, E. Quartini, B.E. Schmidt, A.E. Dekas, and the Oceans Across Space and Time Team. Rates of autotrophy peak in the anoxic interface of a deep hypersaline anoxic basin. *Talk*, Astrobiology Science Conference, Providence, Rhode Island (2024).

E.R. Paris, A. Odenheimer, P.T. Doran, E.D. Ingall, S. Buessecker, J.S. Bowman, B.E. Schmidt, A.E. Dekas. Environmental controls on microbial metabolism in the acidic brines of Western Australia. *Talk*, Astrobiology Graduate Conference, La Jolla, California (2023).

E.R. Paris, A. Odenheimer, P.T. Doran, E.D. Ingall, C. Pozarycki, C. Sephus, A. Schartup, B. Klempay, L. Fisher, J.S. Bowman, S.M. Som, M.M. Weng, M.A. Birmingham, S. Buessecker, J.M. Weber, T.A. Plattner, E. Quartini, B.E. Schmidt, A.E. Dekas, Esperance Tjaltjraak Native Title Aboriginal Corporation, and Oceans Across Space and Time Team. Environmental controls on microbial metabolism in the acidic brines of Western Australia. *Talk*, Ancient and Future Brines Conference, Reno, Nevada (2023).

E.R. Paris, A. Odenheimer, P.T. Doran, E.D. Ingall, S. Buessecker, J.S. Bowman, B.E. Schmidt, A.E. Dekas. Environmental controls on microbial metabolism in the acidic brines of Western Australia. *Poster*, Inaugural Northern California Geobiology Symposium, Stanford, California (2023).

E.R. Paris, N. Arandia-Gorostidi, J.B. Glass, A. Pontefract, P. Doran, B. Klempay, L. Fisher, M. Weng, S. Rundell, B.E. Schmidt, J.S. Bowman, A.E. Dekas, and The Oceans Across Space and Time Team. Single-cell analysis of microbial activity in seawater-sourced hypersaline brines analogous to other ocean worlds. *Talk*, Gordon Research Conference on Marine Microbes, Les Diablerets, Vaud (fr) Switzerland (2022).

E.R. Paris, N. Arandia-Gorostidi, J.B. Glass, A. Pontefract, P. Doran, B. Klempay, L. Fisher, M. Weng, S. Rundell, B.E. Schmidt, J.S. Bowman, A.E. Dekas. Single-cell analysis of microbial anabolic activity in hypersaline brines analogous to other ocean worlds. *Poster*, Astrobiology Science Conference, Atlanta, Georgia (2022).

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E.R. Paris, N. Arandia-Gorostidi, J.B. Glass, A. Pontefract, P. Doran, B. Klempay, L. Fisher, M. Weng, S. Rundell, B.E. Schmidt, J.S. Bowman, A.E. Dekas. Single-cell analysis of microbial activity in seawater-sourced hypersaline brines analogous to other ocean worlds. *Talk*, Ocean Sciences Meeting, Virtual (2021).

Publications

A.C. Semler, **E.R. Paris**, A.E. Dekas, Abundance, Identity, and Potential Diazotrophic Activity of nifH-Containing Organisms at Marine Cold Seeps. *Environmental Microbiology*, 27, 2025.

C. Pozarycki, K.M. Seaton, E.C. Vincent, C.N. Sanders, N. Nuñez, M. Castillo, E. Ingall, B. Klempay, A. Pontefract, L.A. Fisher, **E.R. Paris**, S. Buessecker, N.B. Alansson, C.E. Carr, P.T. Doran, J.S. Bowman, B.E. Schmidt, and A.M. Stockton, Biosignature Molecules Accumulate and Persist in Evaporitic Brines: Implications for Planetary Exploration. *Astrobiology*, 24:8, 795-812, 2024.

Y. Raut, C.R. Barr, **E.R. Paris**, B.J. Kapili, A.E. Dekas, D.G. Capone, Autochthonous carbon loading of macroalgae stimulates benthic biological nitrogen fixation rates in shallow coastal marine sediments. *Frontiers in Microbiology*, 14, 2024.

E.R. Paris, N. Arandia-Gorostidi, B. Klempay, J.S. Bowman, A. Pontefract, C. Elbon, J.B. Glass, E.D. Ingall, P.T. Doran, S.M. Som, B.E. Schmidt, A.E. Dekas, Single-cell analysis in hypersaline brines predicts a water-activity limit of microbial anabolic activity. *Science Advances*, 9, 2023.

E.R. Paris, R.S.R. Salcedo, S. Buessecker, M. Desmarais, C. Pozarycki, S.M. Som, A. Andersson, E.D. Ingall, P.T. Doran, D. Bartlett, J.S. Bowman, B.E. Schmidt, A.E. Dekas. Single-cell microbial activity and inorganic carbon fixation by metabolic lifestyle and spatial niche across the Orca Basin redoxcline. *Submitted*.

E.R. Paris, A. Odenheimer, M.M. Weng, B. Klempay, S. Buessecker, C. Pozarycki, L. Fisher, C. Sephus, A. Schartup, S.M. Som, E.D. Ingall, P.T. Doran, J.S. Bowman, B.E. Schmidt, A.E. Dekas. Dissolved organic carbon promotes single-cell microbial activity in the acidic brines of Western Australia. *In prep*.

E.R. Paris, G. Lee, A. Jaffe, C.E. Elbon, H.M. Tran, E.A. Aycock, E. Skoog, B. Schmidt, J.S. Bowman, J.B. Glass, A.E. Dekas. Star-shaped manganese oxides coincide with peak in microbial activity at the oxic-anoxic interface of a deep hypersaline anoxic basin. *In prep*.

B.J. Kapili, **E.R. Paris**, A.E. Parada, N.R. Meyer, A.E. Dekas, *Deltaproteobacteria* dominate a widespread and complex assemblage of potential diazotrophs in continental shelf to abyssal plain sediments. *In prep*.

L.A. Adepoju, J.M. McKaig, R.S.R. Salcedo, A. Martinez, S. Buessecker, E.J. Skoog, C.E. Elbon, **E.R. Paris**, M. Desmarais, C.D. Sephus, C. Pozarycki, V. Hegelein, P.T. Doran, C.E. Carr, E.D. Ingall, D.H. Bartlett, R. Murali, M.R. Raven, A.E. Dekas, J.S. Bowman, B.E. Schmidt, J.B. Glass. Anaerobic methane oxidation by ANME-2a at two molar chloride in Orca Basin. *Submitted*.

T. A. Plattner, B. E. Schmidt, N. M. Fernandez, P. T. Doran, M. A. Birmingham, J.M. Weber, A. Celestian, E. D. Ingall, J. S. Bowman, S. M. Som, A. Odenheimer, T. Bornholdt, C. Sephus, H. T. Jamison, K. Russo, S. Buessecker, L. A. Fisher, B. Klempay, **E. R. Paris**, E. J. Skoog, M. M. Weng, C. Pozarycki, A. T. Schartup, C. E.

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Carr, J. J. Wray, F. Rivera-Hernández, E. Quartini. Groundwater Connectivity and Buffering in Western Australian Hypersaline Lakes: Implications for Late-Stage Martian Lacustrine Systems. *Submitted*.

Scientific Skills

stable isotope probing, nanoscale secondary ion mass spectrometry, isotope ratio mass spectrometry, secondary electron microscopy, energy dispersive spectroscopy, fluorescence *in situ* hybridization, microscopy, flow cytometry, fluorescence-activated cell sorting, PCR, gene sequencing, metagenomics, microbial culturing, anaerobic and sterile techniques, R, python

Personal Interests

SCUBA (certifications: AAUS scientific, Rescue, Hazmat, Drysuit, DPV, Nitrox), private pilot (glider), backpacking, rock climbing, mountaineering.

Languages

English (native)

French (intermediate)

German (beginner)