

# Emily R. Paris

## Education

2016 - 2020

### **B.S. Biochemistry & Cell Biology, UC San Diego**

Minor in Marine Sciences, Scripps Institution of Oceanography  
Cum Laude with Honors

2020 - 2022

### **M.S. Earth System Science, Stanford University**

Doerr School of Sustainability, Department of Earth System Science

2020 - Present

### **PhD Candidate, Stanford University**

Doerr School of Sustainability, Department of Earth System Science

## Research Experience

September 2020 - Present

### **Graduate Thesis**

“Microbial metabolism in hypersaline brines on Earth and implications for other ocean worlds”

Advisor: Dr. Anne E. Dekas; Committee members:

Dr. Christopher A. Francis (Chair), Dr. Karen L. Casciotti, Dr. Jeff S. Bowman

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 and  
Pharmaceutical Sciences

June - September 2018

### **STEM Student Assistant**

Agrophotovoltaics: combining solar energy and food production

Energy Research and Development, Sacramento Municipal Utility District

Advisor: Kathleen Ave

## Field Experience

July 2023

### **Orca Basin, Gulf of Mexico (2 weeks)**

Oceans Across Space and Time

August 2022

### **Western Australia Transient Lakes (2 weeks)**

Oceans Across Space and Time

July 2022

### **Salton Sea, California (1 day)**

Bowman Lab, Scripps Institution of Oceanography

June 2022

### **Mediterranean Sea (1 day)**

Stanford University and Mediterranean Institute of Oceanography

November 2019

### **Tromsø, Norway (2 weeks)**

D'Spain Lab, Scripps Institution of Oceanography

August 2019

### **Hólar, Iceland (2 weeks)**

Kurle Lab, UC San Diego

May 2019

### **Pacific Coast, California (1 day)**

Taylor Lab, Scripps Institution of Oceanography

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April 2019

**Pacific Coast, California** (1 day)  
Rouse Lab, Scripps Institution of Oceanography

## Teaching Experience

January 2024 - Present

### Teaching Assistant

ES 36N: "Life at the Extremes: From Deep-Sea to Deep Space"  
Stanford University, Stanford, California  
Attended biweekly lectures, graded assignments, prepared laboratory unit on bioluminescence, and gave lecture titled "Microbes and Climate" to 16 undergraduate students.

August 2014 - Present

### Private Tutor

Online and In-Person  
Helped multiple middle and high school students learn various subjects in individual and group settings, including math, sciences, and writing.

November 2023

### SSTEP Program Mentor

Stanford University & Summit Tahoma, San Jose, California  
Mentored a high school student in beginning research skills for 2 weeks.

March - August 2020

### Homeschool Tutor

San Diego, California  
Guided two students in kindergarten and fifth grade through stay-at-home learning through the beginning of the COVID-19 pandemic.

March 2019 - May 2020

### STEAM Science Instructor and Assistant

Sally Ride Science Academy, San Diego, California  
Sally Ride Science is a non-profit that provides unique educational opportunities to underrepresented groups in STEM, including first-generation students, girls, and at-risk youth. I led and assisted four, three-hour science workshops for 20-30 students ages K-12 at underserved libraries in San Diego and manned a science exploration booth at EXPO Day at PetCo Park in 2019 for ~20,000 attendees.

January - March 2019

### Science Education and Communication

Birch Aquarium, La Jolla, California  
Organized an interactive display table on natural products from the sea for aquarium visitors of all ages.

## Work Experience

June - August 2020

### Laboratory Technician

Moore Lab, Scripps Institution of Oceanography

Jan 2019 - May 2020

### Campus Ambassador

UC San Diego Admissions

March 2017 - June 2018

### Resident Assistant

Revelle College, UC San Diego

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## Memberships & Service

2024 - Present	Stanford Nano Shared Facilities Outreach Events
2023 - Present	Co-chair of Northern California Geobiology Symposium
2021 - Present	Stanford Women's Community Center STEM Mentorship Program
2021 - Present	The Explorers Club
2021 - Present	Skype a Scientist
2020 - Present	Network for Life Detection (NfoLD)
2020 - Present	Society for Women in Marine Science
2020 - 2022	Digital Outreach Associate, Spiral Pacific
2019 - 2022	Citizen Science Scuba Diver
2019 - 2020	Sedna Epic Expedition and Women's Leadership Workshop
2018 - 2020	Office for Students with Disabilities at UC San Diego
2018 - 2020	Judicial Review Committee at UC San Diego
2017 - 2019	College Council at UC San Diego
2016 - 2017	Emerging Leaders Program at UC San Diego, Project Manager

## Invited Talks

2024	Invited Speaker, The Open University, UK
2024	Invited Speaker, COSPAR Inaugural Meeting
2024	Keynote Speaker, UC San Diego Academic Honors Ceremony
2023	Invited Speaker, Explorers Club (Northern California Chapter)
2020	Commencement Speaker, Revelle College, UC San Diego
2020	Invited Panelist, International Women's Day, UC San Diego
2019	Invited Speaker, Oceanids, UC San Diego
2019	Invited Speaker, Town & Gown, UC San Diego

## Seminars

2024	Speaker, Bug Club, Stanford University
2024	Speaker, ESScapades, Stanford University

## Honors & Awards

2023	Outstanding Poster Award, Northern California Geobiology Symposium
2023	Scholarship Recipient, Historical Diving Society
2020	UC San Diego Alumni Association Outstanding Senior Award
2019	Eureka! Undergraduate Research Scholar, UC San Diego
2019	Town and Gown Scholar, UC San Diego
2019	Oceanids Outstanding Service Award, UC San Diego
2017-2019	Provost Academic Honors, UC San Diego
2018	SMUD Powering Futures Scholarship
2018	F. Thomas Bond Scholarship, UC San Diego
2018, 2018, 2019	Triton Experiential Learning Scholar, UC San Diego
2017	Ernest C. Mort Leadership Excellence Award, UC San Diego

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## Blog Posts

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/>.

**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**, 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, Astrobiology Science Conference, Providence, Rhode Island (2024).

**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**, 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).

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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 anabolic activity in hypersaline brines analogous to other ocean worlds. *Poster*, Astrobiology Science Conference, Atlanta, Georgia (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 activity in seawater-sourced hypersaline brines analogous to other ocean worlds. *Talk*, Ocean Sciences Meeting, Virtual (2021).

### Publications

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.

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.*

A.C. Semler, **E.R. Paris**, A.E. Dekas, Diversity, abundance, and distribution of *nifH* genes and transcripts at geochemically and biologically heterogenous marine cold seeps. *In prep.*