

Stephanie I. Anderson

SIMONS FOUNDATION POSTDOCTORAL FELLOW

Massachusetts Institute of Technology Department of Earth, Atmospheric, and Planetary Sciences

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Education

Ph.D. Oceanography

Narragansett, RI

GRADUATE SCHOOL OF OCEANOGRAPHY, UNIVERSITY OF RHODE ISLAND

2015-2021

- Dissertation: Phytoplankton thermal responses as drivers of community composition and biogeography in a changing environment
- Advisor: Dr. Tatiana Rynearson

Single Subject Teaching Credential

Los Angeles, CA

LOYOLA MARYMOUNT UNIVERSITY

2012-2013

B.A. Molecular, Cellular, and Developmental Biology

Boulder, CO

UNIVERSITY OF COLORADO AT BOULDER | *magna cum laude*

2008-2012

- Thesis: Identifying Purification and Storage Techniques for the Human Papillomavirus Type 16 Major Capsid Protein L1
- Advisor: Dr. Robert Garcea, M.D.

Research Appointments

Simons Foundation Postdoctoral Fellow

Cambridge, MA

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

2021-Present

- Advisor: Dr. Stephanie Dutkiewicz

Postdoctoral Associate

Narragansett, RI

GRADUATE SCHOOL OF OCEANOGRAPHY, UNIVERSITY OF RHODE ISLAND

06/2021 - 09/2021

- Advisor: Dr. Tatiana Rynearson

Graduate Research Assistant

Narragansett, RI

GRADUATE SCHOOL OF OCEANOGRAPHY, UNIVERSITY OF RHODE ISLAND

2015-2021

- Advisor: Dr. Tatiana Rynearson

Departmental Honors Research

Boulder, CO

UNIVERSITY OF COLORADO AT BOULDER

2011-2012

- Advisor: Dr. Robert Garcea, M.D.

Fellowships & Awards

2021	Simons Foundation Postdoctoral Fellowship in Marine Microbial Ecology , (\$258,418)	Cambridge, MA
2019	Davis Family Endowed Scholarship for Fisheries Oceanography , (\$3650)	Narragansett, RI
2019	Turner Designs Student Award , (\$500), Travel award	Narragansett, RI
2018	Ann Durbin Memorial Award , (\$462), For excellence in biological oceanography	Narragansett, RI
2016/19	University of Rhode Island Alumni Award , (\$1,000), Travel award	Narragansett, RI
2013	Segal AmeriCorps Education Award , (\$11,000) Dedication to the Teach for America program	Los Angeles, CA
2013	Teacher of the Month , Manual Arts High School	Los Angeles, CA
2012	Departmental Honors , University of Colorado at Boulder	Boulder, CO
2010	National Society of Collegiate Scholars , National Honors Society	Boulder, CO

Publications

Manuscripts in review or in preparation:

Bishop I.W., **Anderson S.I.**, Collins S., Ryneerson T.A., Intraspecific thermal trait variation and the adaptive potential of Southern Ocean phytoplankton. (*in prep for Global Change Biology*).

Franzè G., **Anderson S.I.**, Kling J.D., Kremer C.T., Hutchins D.A., Litchman E., Ryneerson T.A., Menden-Deuer S., Synergetic effects of nutrient and temperature on a natural plankton community. (*in prep for Limnology and Oceanography*).

Anderson S.I., Franzè G., Kling J.D., Wilburn P., Kremer C.T., Hutchins D.A., Litchman E., Menden-Deuer S., Ryneerson T.A., The Interactive Effects of Temperature and Nutrients on a Spring Phytoplankton Community. (*in review at Limnology and Oceanography*).

Kling J., Lee M.D., Webb E.A., Coelho J.T., Wilburn P., **Anderson S.I.**, Zhou Q., Wang C., Phan M.D., Kremer C.T., Litchman E., Ryneerson T.A., Hutchins D.A. Dual thermal ecotypes detected within a nearly genetically-identical population of the unicellular marine cyanobacterium *Synechococcus*. *bioRxiv*. doi: <https://doi.org/10.1101/2020.05.27.119842>

Peer-reviewed publications:

Anderson S.I., Barton A.D., Clayton S., Dutkiewicz S., Ryneerson T.A. (2021), Marine Phytoplankton Functional Types Exhibit Diverse Responses to Thermal Change. *Nature Communications*. doi: <https://doi.org/10.1038/s41467-021-26651-8>

Anderson S.I., Ryneerson T.A.(2020), Variability Approaching the Thermal Limits Drives Diatom Community Dynamics. *Limnology and Oceanography*. doi: <https://doi.org/10.1002/lno.11430>

Non-refereed publications:

Anderson S.I., McDuffie K., Menezes S.(2020), Science Communication for Natural Resource Managers: Techniques and Examples in Marine Systems. *The Handbook of Natural Resources: Coastal and Marine Environments*, 5, 143-149.

Anderson S.I. "Identifying Purification and Storage Techniques for the Human Papillomavirus Type 16 Major Capsid Protein L1" (2012). *Molecular, Cellular, and Developmental Biology Undergraduate Contributions*. Available at: https://scholar.colorado.edu/mcdb_ugrad/1

Presentations

Anderson S.I., Franzè G., Kling J., Kremer C., Menden-Deuer S., Litchman E., Hutchins D., and Ryneerson T.A.. Plankton Shuffle: Temperature-Nutrient Interplay Restructures Phytoplankton Community. ASLO, Virtual. June 2021.

Anderson S.I., Barton A.D., Clayton S., Dutkiewicz S., and Ryneerson T.A.. Changing Rates and Shifting Ranges: Assessing the Phytoplankton Global Response to Ocean Warming. Ocean Sciences, San Diego, CA. February 2020.

Bishop I., **Anderson S.I.**, Collins S., and Ryneerson T.A.. Intraspecific Variability in Thermal Tolerance Buffers Southern Ocean Diatoms from Biogeographic Range Contraction in a Warming Ocean. Ocean Sciences, San Diego, CA. February 2020.

Anderson S.I., Kling J., Kremer C., Franzè G., Hutchins D., Litchman E., Menden-Deuer S., and Ryneerson T.A.. Winners and Losers in a Changing Tide: Temperature-Nutrient Impact on Phytoplankton Community Dynamics. ASLO, San Juan, Puerto Rico. February 2019.

Kling J., Phan M., Fu F., **Anderson S.I.**, Franzè G., Wilburn P., Kremer C., Litchman E., Ryneerson T.A., and Hutchins D.. Thermal Diversity in a Coastal Marine *Synechococcus* Community Selected Under Low and High Temperatures. ASLO, San Juan, Puerto Rico. February 2019.

Anderson S.I. and Ryneerson T.A.. Life at the Edge: Physiology at the Thermal Limits Drives Diatom Community Dynamics. RI NSF EPSCoR Research Symposium, Kingston, RI. April 2018.

Franzè G., **Anderson S.I.**, Kremer C., Kling J., Wilburn P., Hutchins D., Litchman E., Ryneerson T.A., Menden-Deuer S.. Direct and indirect effects of temperature and nutrient on plankton community dynamics. Ocean Sciences, Portland, Oregon. February 2018.

Anderson S.I., Ryneerson T.A.. Thermal traits and community structure in diatoms. Trait-Based Approaches to Ocean Life, Bergen, Norway. August 2017.

Anderson S.I., Ryneerson T.A.. In hot water? Thermal trait variability among diatom species. RI NSF EPSCoR Research Symposium, Providence, RI. April 2017.

Anderson S.I., Ryneerson T.A.. Thermal trait variability in seasonally differentiated morphologically cryptic diatom species. ASLO, Honolulu, HI. March 2017.

Canesi K.L., Ryneerson T.A., **Anderson S.I.** New Methods and an old time series reveal temporal trends in diversity among morphologically cryptic diatom species. ASLO, Honolulu, HI. March 2017.

Teaching Experience

Graduate Teaching Assistant

GRADUATE SCHOOL OF OCEANOGRAPHY, UNIVERSITY OF RHODE ISLAND

- Teaching Assistant for graduate level Biological Oceanography

Narragansett, RI

2018-2019

AP Science and Math Tutor

C2 EDUCATION

- Prepared students for AP and college entrance exams through personalized instruction.

Los Angeles, CA

2015

High School Chemistry Teacher

TEACH FOR AMERICA

- Joined highly selective national teacher corps and committed two years to teaching in under-resourced public schools.
- Developed and implemented science curriculum for 250 students that resulted in 68% of students passing statewide end-of-year assessment; a 20% increase from the previous year.

Los Angeles, CA

2012-2014

Undergraduate Biology Teaching Assistant

UNIVERSITY OF COLORADO AT BOULDER

- Facilitated student discussion during undergraduate lectures and led exam review sessions.

Boulder, CO

2011-2012

Calculus Learning Assistant

UNIVERSITY OF COLORADO AT BOULDER

- Led recitation sessions each week and guided students through new course material.

Boulder, CO

2011

Community Engagement

2019-2020	Summer Undergraduate Research Fellowship in Oceanography (SURFO) , Presented Biological Oceanography Introductory Lecture	<i>Narragansett, RI</i>
2017-2019	Narragansett Bay Classroom , Lead summer outdoor explorations for K-12 students	<i>Narragansett, RI</i>
2019	Hamilton Elementary , Engaged elementary students in ocean density lesson	<i>North Kingston, RI</i>
2019	Society for Women in Marine Science (SWMS) , Graduate school panel	<i>Kingston, RI</i>
2016-2019	METCALF Annual Science Immersion Workshop for Journalists , Assisted with lesson on reading scientific literature and engaging in scientific methods	<i>Narragansett, RI</i>
2018	Northwest Passage Project , Presented lesson on Arctic plankton to visiting high school students	<i>Narragansett, RI</i>
2018	Women in Marine Science , Exhibit Presenter at Mystic Aquarium	<i>Mystic, CT</i>
2018	4-H Teen Science Cafe , Presented potential career paths in oceanography to middle school students	<i>Exeter, RI</i>
2018	Bay-Informed Discussion Series , Community presentation on the importance of marine microbes	<i>Narragansett, RI</i>
2017-2018	URI Graduate School of Oceanography Open House , Led interactive DNA extraction demonstrations for the public	<i>Narragansett, RI</i>
2016-2017	Bio-at-Noon Seminar Series Organizer , Organize seminar series that brings outside scientists for informal discussion at the Graduate School of Oceanography	<i>Narragansett, RI</i>
2016	Ocean Sciences Bowl , Assisted in grading at regional high school oceanography competition	<i>Avery Point, CT</i>
2016	Girls Reaching Remarkable Levels (GRRL) Tech , Led phytoplankton microscopy lab for high school girls	<i>Kingston, RI</i>
2016	Teach for America, RI , Engaged elementary school students and teachers in lessons about the ocean, including food webs and phytoplankton	<i>Providence, RI</i>
2016	Rhode Island Educators Cruise , Directed Rhode Island science teachers in field research aboard the R/V Endeavor	<i>Narragansett, RI</i>

Mentorship

During my doctoral studies, I mentored two undergraduate students through the completion of their research projects, later presented at research symposiums.

Research Cruises

2018	AE1812 , R/V Atlantic Explorer (14 days); Chief Scientist: Dr. Tatiana Rynearson	<i>Bermuda to Narragansett, RI</i>
2017	Phosphorus Hydrocarbon And Transcriptomics (PHAT); AR16 , R/V Neil Armstrong (19 days); Chief Scientist: Dr. Benjamin Van Mooy	<i>Woods Hole to Bermuda</i>
2016-2017	Antarctic Diversity Among Plankton and their Transformations (ADAPT); NBP17-01 , R/V Nathaniel B. Palmer (29 days); Chief Scientist: Dr. Tatiana Rynearson	<i>Southern Ocean Transect</i>

Skills and Certifications

Certifications:	Single Subject Teaching Credential
Computation:	R (fluent), Python and IPython Notebook (proficient), Matlab and C++ (basic), SQL (familiar)
Machine Learning:	Regression Analysis, Clustering (e.g. k-means), Time-Series Analysis, Classification (e.g. decision trees)
Software:	LaTeX
Laboratory Techniques:	Molecular: DNA extraction, PCR, Sanger sequencing, microsatellites Other: Aseptic cell culturing, Microscopy, Plankton taxonomy, CHN Analysis, Chlorophyll extraction, Flow Cytometry, Ship-board sampling and sample processing (preservation)
Workshops:	ANGUS Next Generation Sequence Analysis Workshop, UC Davis, Summer 2017
Memberships:	Association for the Sciences of Limnology and Oceanography Society for Women in Marine Science
Reviewer:	Limnology and Oceanography