Claudette Proctor
Stanford University
Department of Earth System Science
213-364-8681
proctorc@stanford.edu

EDUCATION

Stanford University, Stanford, CA *June 2027* (expected)
PhD Candidate, Earth System Science, Doerr School of Sustainability
Research Advisor: Kevin Arrigo

Bowdoin College, Brunswick, ME *2021*
B.A., Earth and Oceanographic Science, Hispanic Studies

PUBLICATIONS & PRESENTATIONS

Proctor, C., Mills, M., van Dijken, G., Lauer, J., Payne, C., Mordy, C., & Arrigo, K. (*in prep.*). Photoacclimation strategies of under-ice and open water phytoplankton.

Arrigo, K., Lauer, J., Palm, A., **Proctor, C.**, Li, E., Mills, M., van Dijken, G., Prakash, M. (*in review)*. Composition of microalgal communities in the Chukchi and northern Bering Sea. *Limnology and Oceanography.*

Weng, B., Arrigo, K., **Proctor, C.** (*in prep.)*. Arctic Extratropical Cyclone's Impact on Primary Productivity in the Chukchi Sea. *American Geophysical Union, December Meeting*.

Proctor, C., Mills, M., van Dijken, G., Lauer, J., Lim, S., Payne, C., Pickart, R., Mordy, C., Prakash, M., & Arrigo, K. (2026). Evolution of an extensive under-ice phytoplankton bloom in the Chukchi Sea. *Journal of Geophysical Research: Oceans*

Lauer, J., van Dijken, G., Mills, M., Pickart, R., Lim, S., Li, E., Payne, C., **Proctor, C.**, Zhong, G., Prakash, M., Michel, C., & Arrigo, K. R. (2026). Particle Interceptor Traps Demonstrate Enhanced Export Driven by Frontal Dynamics in the Chukchi Sea. *Journal of Geophysical Research: Oceans*

Mills, M, Cheung, S., Morando, M., Voznyuk, A., van Dijken, G., **Proctor, C.**, van Dijken, C., White, A., Arrigo, K., & Turk-Kubo, K. (2024). Non-cyanobacterial diazotrophs actively fix N_2 in surface waters of the North Pacific Subtropical Gyre: Rates and environmental controls. *American Geophysical Union, Ocean Sciences Meeting*.

Proctor, C., Mills, M., Nguyen, D., Palm, A., & Arrigo, K. (2024). Simulating Under-Ice Conditions to Examine Effects of UV Radiation on Phytoplankton in the Chukchi Sea. *American Geophysical Union, Ocean Sciences Meeting.*

Proctor, C., Coupel, P., Casciotti, K., Tremblay, J.-E., Zakem, E., Arrigo, K.R. and Mills, M.M. (2023). Light, ammonium, pH, and phytoplankton competition as environmental factors controlling nitrification. *Limnology and Oceanography.*

Proctor, C., Coupel, P., Casciotti, K., Tremblay, J.-E., Arrigo, K.R. and Mills, M.M. (2023). Controls on nitrification in the Chukchi Sea. *Polar Marine Science, Gordon Research Seminar.*

LaVigne, M., Clifton, K., Cotei, E., Dietrich, Z., Jackson, N., Ortiz, S., **Proctor, C.**, Rzeszowski, E., Saint-Louis, B. & Savage, H. (2020). Paleoceanographic proxy reconstructions of Gulf of Maine pH: Coupling research and undergraduate learning goals in response to COVID-19. *American Geophysical Union, Fall Meeting.*

TEACHING EXPERIENCE

Introduction to the Marine Environment (EARTHSYS8), Instructor *2024-2026*
Stanford University
- Developed and implemented new, original curriculum incorporating active learning for 30 major and non-major undergraduate students
- Designed in-class activities, facilitated groupwork, and delivered lectures
- Created assessment materials including problem sets and exams, graded student work
- Taught two terms as an instructor of record, third term expected Spring 2027
- Overall quality of instruction reported at 4.2/5 via anonymous student course evaluations

Environmental Biology (BIOL002), Instructor *2026*
West Valley College
- Delivered original curriculum emphasizing local ecological
- Wrote new syllabus and developed original curriculum focused on cultivating knowledge and experiences within the local ecosystem
- Hosted office hours, graded material, and served as sole instructor of record

AI for Biodiversity Science and Conservation (ESS367), Teaching Assistant *2026*
- Facilitated class-wide conversations about topics surrounding machine learning approaches and ethical considerations in scientific research
- Guided students in developing in-class presentations and discussion-based activities

Ecology and Wildlife (BIOL012), Volunteer *2025*
West Valley College
- Hosted office hours and helped develop course content
- Delivered guest lecture on ecology of aquatic environments

Remote Sensing of the Oceans (ESS241), Teaching Assistant *2024*
Stanford University
- Advised students on final research projects, held regular office hours
- Provided technical and conceptual support during lab sessions

Sustainability Undergraduate Research in Geoscience and Engineering, Mentor *2026*

National Science Foundation, REU
- Served as primary mentor for student's undergraduate research
- Directed student project, including a poster and presentation of the work

Thriving in a Changing World, Industry Professional/Mentor *2025-2026*
Chadwick School
- Provided guidance and insight to twelfth graders on making meaning in diverse contexts
- Helped students design and complete a year-long research and action project

Course Design Institute, Student Reviewer *2026*
Center for Teaching and Learning, Stanford University
- Provided guidance and insight to twelfth graders on making meaning in diverse contexts

TEACHING DEVELOPMENT

Scholarly Teaching: Leverage Your Skills as a Scholar to Improve Your Teaching *2026*
Stanford Center for Teaching and Learning
- Collaborated with peers and teaching experts to formulate questions to better understand and enhance student outcomes
- Explored scholarly literature in teaching and learning
- Developed new skills to aid with pedagogical research and analysis in my own teaching

Stimulating Student Engagement and Motivation *2026*
Center for Integration of Research, Teaching, and Learning (CIRTL) Network
- Engaged in a workshop examining purposeful questioning for deeper understanding
- Addressed strategies to enhance student participation, motivation and learning outcomes

Mentoring in Research *2026*
Stanford Doerr School Office of Access, Belonging, and Community
- Participated in training for early career scientists and educators to hone mentoring skills
- Simulated navigating common challenges for undergraduates engaging in research
- Led by Jennifer Saltzman (Stanford Experiential Education)

Classroom Ethics in Higher Education: Navigating Dilemmas with Intention *2026*
The Ohio State University, CIRTL Network
- Prepared to resolve tension, face controversial topics, and address classroom challenges
- Applied ethical theories and articulated values in defense of various decisions

An Introduction to Evidence-Based Undergraduate STEM Teaching *2026*
Stanford Center for Teaching and Learning, CIRTL Network
- Practiced and discussed effective teaching strategies and supporting research
- Explored assessment, active learning, inclusive teaching, and lesson planning

Advancing Undergraduate Ocean Science Education *2026*
St. Mary's College of Maryland, AGU Ocean Sciences

- Contributed to dialog focused on sharing creative pedagogical approaches
- Discussed engagement strategies, leveraging imagination and originality in course design

Preparing Future Teaching Professors *2025*
Stanford VPGE & West Valley College
- Participated in year-long mentoring program for students interested in teaching-focused institutions
- Shadowed in-person and online biology and ecology classes with Prof. Leticia Gallardo

Teaching Introductory Ocean and Environmental Sciences Courses *2024*
UMass Boston, AGU Ocean Sciences
- Attended workshop designed for educators seeking methods to engage all students
- Considered including learners with a diverse array of backgrounds and interests

RESEARCH

PhD Doctoral Research, Stanford University *2021-2027*
- Studied phytoplankton in polar regions in response to climate change
- Leveraged fieldwork, incubation experiments, remote sensing, and modeling approaches

SURGE Research, Stanford University *2020*
- Investigated the role of ocean acidification in biogeochemical processes
- Presented and published work from research

NSF Research Experience for Undergraduates, University of Michigan *2019*
- Experimentally simulated drought and extreme precipitation effects on algae
- Studied drivers, feedbacks, and impacts of climate change

Undergraduate Research Assistant, Bowdoin College *2020*
- Assisted with experiment reconstructing past climate conditions for coral
- Worked in wet lab at Schiller Coastal Studies Center

FELLOWSHIPS & AWARDS

Enhancing Diversity in Graduate Education (EDGE) Fellowship *2021-2023*
Two-year fellowship providing funding, mentorship, professional development, and community for PhD students underrepresented in their field of study.

Stanford School of Earth Dean's Graduate Scholar Award *2021*
Granted to students who have demonstrated inclusive scientific leadership and show the potential to continue their engagement in outreach, recruitment and leadership development.

LEADERSHIP & SERVICE

Stanford Club Soccer, Head Coach *2022-present*
- Led a competitive team of undergraduate and graduate student-athletes
- Planned and organized practices, games, and served as a mentor to captains

Greene Scholars Program Science Fair, Reviewer and Judge *2026*
- Reviewed and advised Greene Scholars, 3rd to 12th grade students of African ancestry pursuing STEM, on science fair projects

Ravenswood Classroom Partners, Literacy Tutor *2025-present*
- Met weekly with elementary students to practice reading and comprehension skills

Bowdoin High School, Mentor *2018-2020*
- Mentored students with Maine Science Fair marine biology and sustainability projects

National Girls and Women in Sports Day, Volunteer *2018-2021*
- Organized groups and coached soccer and other sports to girls

Intergroup Dialogue, Facilitator *2019-2021*
- Facilitated "Real Talk on Race" workshops for teams, clubs, and first-year students

SKILLS & TRAINING

Fieldwork:
- Development of Standard Operating Procedure for scientific cruise
- Design and execution of on-deck incubation experiments
- Secchi and PAR measurements
- Deployment of CTD and YSI multiparameter sonde
- Water sampling with Niskin bottles
- Plankton net tow collection
- Soil coring and texture analysis

Laboratory techniques:
- Dissolved and particulate matter analysis using elemental autoanalyzer
- Fluorometric determination of chlorophyll *a* and pheophytin *a* pigments
- Determination of aquatic productivity using light/dark bottles
- Basic water quality analyses including turbidity, dissolved oxygen, and pH
- Trace gas analysis using Varian gas chromatograph
- Species identification of phytoplankton with microscopy, IFCB, and EcoTaxa
- Preparation of phytoplankton cultures

Data analysis:
- Programming with MATLAB, Python, R, and Ocean Data View
- Geospatial analysis with Python, ENVI, SeaDAS, ArcGIS, and Google Earth
- Data visualization and figure generation including profile, section, and surface plots

Languages:

- Fluent in English and Spanish