

Julia S. Dreyer

Curriculum vitae

Earth and Planetary Sciences Department, University of California, Davis
Bodega Marine Laboratory
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EDUCATION

Ph.D. in Earth and Planetary Science, in progress

University of California, Davis
Department of Earth and Planetary Sciences and Bodega Marine Laboratory
Dissertation: Investigating ocean and climate change in the Holocene and Anthropocene using Southern California marine sediment records
Anticipated Degree Date: June 2021

B.S. Marine Biology

University of California, Los Angeles
Department of Ecology and Evolutionary Biology, Minor in Spanish
Completed June 2013

PROFESSIONAL APPOINTMENTS

University of California, Davis

Graduate student researcher – Ocean Climate Lab August 201X - present

- Advisor: Dr. Xxxxx X Xxxx
- Investigated climate and ocean change in the past 11,000 years along the US West Coast
- Published research in major academic journals and in multiple public-facing media
- Collaborated with researchers from diverse disciplines and institutions

Teaching assistant, September 2016 - March 2018

- Taught discussion and lab courses: The Earth, Oceanography, and Biological Oceanography
- Designed and implemented modules on critical thinking, scientific writing, and research design

University of California Center Sacramento

Presidential Graduate Opportunities for Leadership Development Fellow March 202X - July 202X

- Engaged with the policymaking community in the California state capitol, including correspondence with state agencies, legislative and executive offices, nonprofit organizations, and academic institutions
- Led Careers in Science Policy Panel for undergraduate students and supported undergraduate education

Environmental Policy Instructor

January 2021 - March 202X

- Developed all curriculum for environmental policy course intended for non-STEM students completing an immersive public policy quarter in-residence in Sacramento
- Conceptualized course focused on evaluating case studies in environmental policy, facilitating dialogue around current issues in environmental policy, and building communication skill
- Taught class virtually, experienced in Canvas, Zoom, Jamboard, and online learning platforms

Santa Rosa Junior College – Bodega Marine Laboratory Internship Program

Director March 201X – December 202X

- Directed internship program for community college students to engage in research at marine lab
- Gained insight into teaching and mentorship of community college students
- Transformed unpaid internship into fully funded program to promote equity
- Led conversion of program from in-person to virtual internship for 2020
- Piloted and taught a weekly professional development workshop series for all interns

Mentor June 201X – December 202X

- Mentored two students from Santa Rosa Junior College in independent research projects
- Advocated for and supported students in presenting research at SACNAS National Diversity in STEM Conference
- Supported both students in application and preparation to transfer to 4-year colleges

California Council on Science and Technology

Science Intern April 202X - November 202X

- Co-authored a report on Costs and Losses of Wildfire in California with an intended audience of legislative, agency, and executive leadership for the State of California; including leadership of sections on societal cost of wildfire, wildfire impacts on water infrastructure, and wildfire impacts on certain populations
- Built relationships with economists, industry leaders, health specialists, and social scientists to address challenge of wildfire

California Academy of Sciences

Research Assistant Summer 201X

- Advisor: Dr. Peter Xxxxx
- Researched the Holocene and Anthropocene as windows into the future of marine systems, digitization of marine microfossil collection

University of Colorado, Boulder

Visiting Research Assistant, Oceans and Climate Lab May 201X – June 201X

- Advisor: Dr. Christy Xxx
- Analyzed suitability of estimating terrestrial potential evaporation using near surface climate factors; developed global map of impact of vertical motion of ocean currents on larval dispersal

TEACHING EXPERIENCE

Instructor of Record

Environmental Policy – UC Center of Sacramento Winter 202X

- Designed and built all curriculum for environmental policy course intended for policy-focused students (majority non-STEM) completing immersive policy quarter “in-residence” in Sacramento
- Focus of course on evaluating case studies in environmental science and interrogating all policy through an environmental justice lens

Teaching Assistant

Oceanography – UC Davis Summer 201X

- Taught 3-hour weekly discussion section for introductory oceanography
- Co-generated course material with instructor of record

- Designed rubrics for evaluation of student research papers and presentations
- Built and taught modules on how to read scientific paper, critical thinking and evaluation of multiple sources of information, scientific writing, experimental design, and global change science

Biological Oceanography – UC Davis Winter 201X

- Hands-on immersive field course
- Led student field activities including tidepool experiment, plankton sampling from boat, marine mammal observation, and marine debris assessment
- Designed and taught lab lecture on data analysis methodology and data visualization

The Earth – UC Davis Fall 201X

- Taught one-hour weekly session on earth science for non-science majors
- Collaborated with multiple teaching assistants and instructor to design course materials and grading rubrics

Marine Botany – University of California, Los Angeles Winter 201X

- Undergraduate teaching assistant
- Prepared laboratory samples and led field trips for algal collection

UNDERGRADUATE MENTORSHIP

Soni Xxxx. Santa Rosa Junior College, Summer 202X

Mentored on an independent research project. Virtual mentorship during COVID-19. Adapted all mentorship to remote setting. Presented research at SACNAS National Diversity in STEM Conference in Fall 202X and awarded SACNAS Travel Award.

Nik Xxxxx, UC Davis, 201X-201X

Year-long professional development mentorship through Association for Women in Geosciences. Catered to unique needs of international student and job search in foreign country.

Kim Xx, UC Davis, Summer 201X

Mentored on independent summer research project. Presented work at UC Davis Bodega Marine Laboratory Research Symposium.

KathXXXXXXXXXX, Santa Rosa Junior College, 201X-201X

Long term-mentorship. Mentorship began with independent research project in Summer 2018. Presented research at SACNAS conference. SACNAS Travel Grant recipient. Co-author on manuscript in *Biogeosciences*. Returned to complete senior practicum with my mentorship.

Oli Xxx, UC Davis, lab volunteer. Summer 201X.

Jon Xxxx, Carleton College. 201X-201X.

Mentored on independent research project. Completed senior thesis project and earned Honors on Senior thesis. Presented research at Geological Society of America Regional Meeting. Co-author on manuscript in *Biogeosciences*. Returned to lab to complete Senior thesis project.

BranXXXXXXXXXX, UC Davis, Summer 201X

Mentored on independent summer research project. Presented work at UC Davis Bodega Marine Laboratory Research Symposium.

FELLOWSHIPS AND AWARDS

Outstanding Student Presentation Award. American Geophysical Union Fall Meeting. December 202X.

Asking Different Questions Scholar. Feminist Research Institute. UC Davis. Fall 202X.

UC Davis Dissertation Year Fellowship. 202X – 202X. (\$50,000)

UC Center of Sacramento Presidential Graduate Opportunities for Leadership Development (GOLD) Fellowship. Spring 202X. (\$14,000)

Russell J. and Dorothy S. Bilinski Bodega Marine Lab Fellowship. Fall 201X. (\$20,000)
National Science Foundation Graduate Student Fellowship Honorable Mention. 201X.

PEER-REVIEWED PUBLICATIONS

- Dreyer, JS.,** Xxxx, TM., XXXXXXXX, V., Xx, C., Xxxx, C. A review of Holocene climate and oceanography of the Western United States and Northeast Pacific. *In prep.*
- Xxx, CV., Xx, CM., **Dreyer, JS.,** XXXXXXXXX, PM., Xxxx, E., Xxxx, TM., Xxxx, C.
Extensive morphological variability in asexually produced planktic foraminifera. *Science Advances*. 10 Jul 202X: Vol. 6, no. 28 DOI: XXXXXX.
- Dreyer, JS.,** Xxxx TM, Xxx PR, Xxxx SM, XXXXXX JT, XXXXX, KR. Southern California margin benthic foraminiferal assemblages record recent centennial-scale changes in oxygen minimum zone. *Biogeosciences*. 03 June 202X. Vol 17, 2923–2937. DOI: XXXXXX.

REPORTS AND OTHER PUBLICATIONS

- California Council on Science and Technology. The Costs of Wildfire in California: An Independent Review of Scientific and Technical Information. October 202X.
- Chapter 2: Background—California Wildfires. Xxx, SM., XXXXX, TJ., **Dreyer, JS.,** Xxxx, B.
- Chapter 3: Fire Prevention, Mitigation, and Suppression. Xxx, S., Xxxx, TJ., **Dreyer, JS.,** Xxxx, B.
- Chapter 4: Buildings and Infrastructure. Xxx, TJ., XXXX, B., **Dreyer, JS.**
- Chapter 5: Health Impacts. XXXXX, C. Xxx, TJ., **Dreyer, JS.**
- Chapter 6: Ecosystem Processes. Xxx, TJ., **Dreyer, JS.,** Xxxx, B.
- Chapter 7: Additional Economic Impacts of Wildfires. Xxx, SM., **Dreyer, JS.,** Xxxx, B.

RESEARCH GRANTS

- Durrell Fund UC Davis Geology Research Award. 202X. (\$1000)
- *National Science Foundation. “Collaborative Research: The Holocene & Anthropocene as windows into the future of marine systems”. 9/1/201X-8/31/202X, co-PIs Xxxx, T, Xxxx, P & Xxxx, D. 2018 – 2020. (\$433,796)
- Durrell Fund UC Davis Geology Research Award. 201X. (\$1000)
- Geological Society of America- Student Travel Grant. 201X.
- Cushman Foundation- Student Travel Grant. 201X.
- Durrell Fund UC Davis Geology Research Award. 201X. (\$1350)
- William V. Sliter Research Award, Cushman Foundation. 201X. (\$1000)
- Geological Society of America Graduate Student Research Grant. 201X. (\$1,526)
- *Graduate students are unable to serve as PI on these grants according to UC policy; I contributed significantly to the writing of this proposal.

INVITED PRESENTATIONS OF RESEARCH

- Dreyer, JS.** Holocene Paleoclimate: approaches, processes, and patterns. University of the Pacific. Global Change Course. October 7, 202X.
- Dreyer, JS.** Southern California margin benthic foraminiferal assemblages across a modern environmental gradient record recent centennial-scale changes in oxygen minimum zone. Fossil Coffee Series. University of California Museum of Paleontology at UC Berkeley. Berkeley, CA. April 30, 201X.

CONFERENCE PARTICIPATION

PAPERS PRESENTED

- Dreyer, JS.** Xxxxx, A., Xxxxx, S. A marine science internship, without the ocean: transitioning a community college internship program to a virtual setting. American Geophysical Union Fall Meeting. December 202X. (oral, virtual)
- Dreyer, JS.** Xxx, TM, Xxx, PD, Xxx, LD, Exploring changes to ocean oxygenation and seafloor ecosystems in Southern California Borderlands through the Holocene. American Geophysical Union Fall Meeting. December 202X. (poster, virtual)
- Xxxxxx Noman, V, **Dreyer, JS.** Xxx, RMW, Xxx, JR, Xxx, SJ, and Xxxxx, TM. Evaluating chemical changes in culturally significant intertidal marine calcifier throughout the Holocene. SACNAS - The National Diversity in STEM Conference. October 20, 202X. (poster)
- *Xxxx, S, **Dreyer, JS.** and Xxx, TM. The Impact of Ocean Temperature and Oxygenation on Benthic Foraminiferal Size in the Southern California Borderlands. SACNAS - The National Diversity in STEM Conference. October 20, 202X. (poster)
- Dreyer, JS.** Xxx, TM, Xxx, LD, Xxx, PD, Xxxx, DK. Oxygenation and ventilation of Southern CA marine basins through the Holocene: evidence from benthic microfossil assemblages and foraminiferal oxygen and carbon stable isotope records. Ocean Sciences Meeting. February 202X. San Diego, CA. (poster)
- Xxxx, TM, Xxx, AM, xxx, K, Xxxx, A, Xxxx, B, Xxxxxx, E, Xxxx, J, Xxxx, H, Xxxx, E, **Dreyer, JS.** Xxxx, M, Xxxx, E, Xxxx, S, Xxxx, E. Changing Ocean Chemistry on the US West Coast: From Knowledge to Action. Ocean Sciences Meeting. February 202X. San Diego, CA.
- Xxxx C, **Dreyer JS.**, Xxxxx, V, Xxxx, TM, Xxx, PD, Xxxx, M, Xxx, LK. New Data from Old Cores: Supplementing the Paleoceanographic Sedimentary Archive with Museum Collections. Ocean Sciences Meeting. February 202X. San Diego, CA.
- Dreyer, JS.** Xxxx, TM, Xxxx, V, Xxxx, C, Xxxx, C. A review of Holocene climate and oceanography of the Western United States and Northeast Pacific. American Geophysical Union Fall Meeting. December 9, 201X. San Francisco, CA. (poster)
- Dreyer, JS.** Southern California microfossils record changes in ocean oxygenation in the last 1500 years. UC Davis Coastal Marine Sciences Research Symposium. Davis, CA. April 23, 201X. (oral)
- Dreyer, JS.** Xxxx TM, Xxx, SM. Xxxx, JT, Xxxx, KR. Spatial and temporal variability of benthic foraminiferal assemblages across a modern environmental gradient on the California Margin. PACLIM – On climate variability of the Eastern Pacific and Western North America. Pacific Grove, CA. February 18, 201X. (poster)
- Dreyer, JS.** Xxxx, TM, Xxxx, V, Xxxx, JR. Southern California Margin oceanographic and ecological change through the Holocene. SACNAS - The National Diversity in STEM Conference. San Antonio, TX. October 12, 201X. (poster)
- *Xxx, KR. **Dreyer, JS.** Xxx, TM. A Spatial and Temporal Study of Benthic Foraminifera Morphology on the San Diego Margin. SACNAS - The National Diversity in STEM Conference. San Antonio, TX. October 12, 201X. (poster)
- Dreyer, JS.** Recent past as a window to the future. Bodega Marine Laboratory Research Seminar Series. Bodega Bay, CA. April 16, 201X. (oral)
- *Xxxxx, JT. **Dreyer, JS.** Xxxx, TM. Recent paleoceanographic history of the San Diego Margin, California: A benthic foraminiferal perspective. Geological Society of America North Central Section Meeting. Ames, IA. April 16, 201X. (poster)
- Dreyer, JS.** Xxxx, SE, Xxxxx, TM, Xxxx, JT. Recent fossil record provides unique insight into impacts of multiple stressors on community ecology. Ocean Sciences Meeting. Portland, OR. February 16, 201X. (oral)
- Dreyer, JS.** Xxxx, SE, Xxxx, TM, Xxxx, JT. Utilizing microfossil community ecology to understand spatial and temporal changes to San Diego Margin oxygen minimum zone. Geological Society of

- America- Annual Meeting. Seattle, WA. October 25, 201X. (oral)
Dreyer, JS. The GLOBE International STEM Network. NCAR Networking and Day of Discovery. Boulder, CO. April 22, 201X. (oral)
Dreyer, JS. Estimating climate on small islands using near surface climate factors. CU Boulder Atmospheric and Oceanic Sciences Poster Conference. Boulder, CO. November 13, 201X. (poster)

*Lead author is student mentee.

SESSIONS ORGANIZED

- Session convener and chair. Marine-terrestrial Connections between the Pacific and the Americas. American Geophysical Meeting (virtual). December 202X.
Session convener and chair. Paleo to policy: bridging the gap between the paleo-sciences and decision-making. American Geophysical Meeting. December 201X.
Session convener and chair. Utilizing Ecological and Oceanographic Records to Understand Ecological Responses to Modern Climate Change. Ocean Sciences Meeting. Portland, OR. February 201X.

ACADEMIC SERVICE

- 202X– present Facilitator of UC Davis Coastal and Marine Sciences Anti-racism Reading Group
201X – present Director of Santa Rosa Junior College – Bodega Marine Laboratory Internship Program
201X – present Member of Bodega Marine Laboratory Diversity, Equity, and Inclusion Committee
201X Scheduler and organizer on Bodega Marine Laboratory Seminar Committee
201X – 201X Co-founder and lead organizer of NorCalPaleo Conference (April 6, 201X)
201X – 201X Co-organizer of Paleoclimate to Policy Workshop held at the Bodega Marine Laboratory (February 20-22, 201X)
201X Member of Bodega Marine Laboratory Transportation Committee
201X Leader of UC Davis Geology Graduate Group new student welcome trip
201X Committee to establish UC Davis chapter of Association for Women Geoscientists
201X – present Member of Bay Area Pod of 500 Women Scientists

PEDAGOGICAL DEVELOPMENT

- 201X – 201X Education and Outreach Intern, University of California, Museum of Paleontology at UC Berkeley
Fall 201X Climate Change Curriculum Development Course. A collaboration between UC Davis Geology and UC Davis Mathematics and Science Teacher Training Program.
201X Education and Training Coordinator for The GLOBE Program, Boulder, CO.

PROFESSIONAL DEVELOPMENT

- January 202X Bystander Intervention Training
February 201X Paleo2Policy Workshop. UC Davis, Bodega Marine Laboratory.
August 201X NOAA Satellite Data Course. University of Washington.
January 201X R Software Carpentry Course.
April 201X UC Davis Science Communication Short Course. Coastal and Marine Science Institute.
Fall 201X Science Communication Course. Bodega Marine Laboratory.

OUTREACH AND PUBLIC ENGAGEMENT

Judge for The GLOBE Program International Virtual Science Fair. 201X, 201X, 201X, 201X, 202X.

Public talk. Science Uncorked Series, Bodega Bay, CA. January 23, 201X

March for Science San Luis Obispo Co-organizer and Social Media Manager. April 201X.

Education and Training Coordinator for The GLOBE Program, Boulder, CO. 201X.

FIELD EXPERIENCE

201X Live foraminifera culture, Bodega Marine Laboratory

201X Applied California Current Ecosystem Studies. Science intern.

 Three 5-day cruises.

 Conducted water chemistry sampling and CTD casts.

201X Marine Biology Field Course

 Moorea, French Polynesia

 5-week intensive field course in coral reef ecosystem, including >40 scientific dives

 AAUS SCUBA Certified Scientific Diver – over 40 dives completed