

HANNAH M. PALMER

hannahpalmer.com

EDUCATION

2021 Ph.D. in Earth and Planetary Sciences

University of California, Davis
 Department of Earth and Planetary Sciences and Bodega Marine Laboratory
 Dissertation: Ocean and climate change in the Northeast Pacific through the Holocene
 Advisor: Dr. Tessa M. Hill

2013 B.S. Marine Biology

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

PROFESSIONAL APPOINTMENTS

Visiting Assistant Professor 2024
 Department of Earth and Planetary Sciences, University of California, Davis

AAAS Congressional Science and Engineering Fellow 2022 – 2023
 United States Senate – Office of Senator Tammy Baldwin
 American Association for the Advancement of Science
 Sponsored by: Geological Society of America – United States Geological Survey

University of California Chancellor's Postdoctoral Fellow 2021 – 2022
 Life and Environmental Sciences, University of California, Merced
 Advisors: Dr. Asmeret Asefaw Berhe and Dr. Sora Kim

Associate Instructor, Policymaking in the Public Sector – Environmental Policy 2021
 University of California Center Sacramento

Presidential Graduate Opportunities for Leadership Development Policy Fellow 2020- 2021
 California Council on Science and Technology
 University of California Center Sacramento

Visiting Researcher 2019
 California Academy of Sciences

Graduate Student Researcher and Teaching Assistant 2016 - 2021
 University of California, Davis
 Ocean Climate Laboratory and Bodega Marine Laboratory

FELLOWSHIPS AND AWARDS

2022-2023 American Association for the Advancement of Science/ Geological Society of America/United States Geological Survey Congressional Science Fellowship.
 2021-2022 University of California, Merced Chancellor's Postdoctoral Fellowship.
 2022 American Geophysical Union Thriving Earth Exchange Community Science Fellow.
 2020-2021 University of California, Davis Dissertation Year Fellowship.

- 2020 Outstanding Student Presentation Award. American Geophysical Union Fall Meeting.
 2020 Asking Different Questions Scholar. Feminist Research Institute, University of California, Davis.
 2020 University of California Center – Sacramento, Presidential Graduate Opportunities for Leadership Development Fellowship.
 2018 Russell J. and Dorothy S. Bilinski Bodega Marine Lab Fellowship.
 2017 National Science Foundation Graduate Student Fellowship Honorable Mention.

RESEARCH GRANTS

- 2022 *Faculty Senate Grant, University of California Merced, co PIs Kim, SL, Lukens, C, and Berhe, AA. (\$15,000)
 2020 Durrell Fund Geology Research Award, University of California, Davis. (\$1000)
 2018-2020 **National Science Foundation. “Collaborative Research: The Holocene & Anthropocene as windows into the future of marine systems”. 9/1/2018-8/31/2020, co-PIs Hill, TM., Roopnarine, PD. and Pak, D. (\$433,796)
 2018 Durrell Fund University of California, Davis Geology Research Award. (\$1000)
 2017 Geological Society of America- Student Travel Grant.
 2017 Cushman Foundation- Student Travel Grant.
 2017 Durrell Fund Geology Research Award, University of California, Davis. (\$1350)
 2017 William V. Sliter Research Award, Cushman Foundation. (\$1000)
 2017 Geological Society of America Graduate Student Research Grant. 2017. (\$1,526)
 **Postdoctoral scholars are unable to serve as PI on faculty grants according to University of California Merced policy; I led the project development and writing of this proposal.
 **Graduate students are unable to serve as PI on NSF grants according to University of California policy; I contributed significantly to the writing of this proposal.

PEER-REVIEWED PUBLICATIONS

- Padilla Vriesman, V., Bean, JR, **Palmer, HM.**, and Banker, RMW. Interpreting life-history traits, seasonal cycles, and coastal climate from an intertidal mussel species: insights from 9000 years of synthesized stable isotope data. *In review*.
- Kennedy, E., Zulian, M. Hamilton, SL., Hill, TM., Delgado, M., Fish, CR., Gaylord, B., Kroeker, KJ., **Palmer, HM.**, Ricart, AM., Sanford, E., Spalding, AK., Ward, M., Carrasco, G., Elliott, M., Grisby, GV., Harris, E., Jahncke, J., Rocheleau, CN., Westerink, S., and Wilmo, MI. A high-resolution synthesis dataset for multistressor analyses along the U.S. West Coast. *Earth System Science Data*. 2024. doi.org/10.5194/essd-16-219-2024.
- Palmer, HM.**, Hill, TM., Padilla Vriesman, V., Livsey, C., Fish, C. A review of Holocene climate and oceanography of the Western United States and Northeast Pacific. *Climate of the Past*. 2023. 3:1-55. doi.org/10.5194/cp-19-199-2023.
- Palmer, HM.**, Hill, TM., Kennedy, E., Roopnarine, PD., Langlois, S., Reyes, KR., and Stott, L., Ecological and Environmental Stability in Offshore Southern California Marine Basins Through the Holocene. *Paleoceanography and Paleoclimatology*. 2022. doi.org/10.1029/2021PA004373.
- Shuman, JK., Balch, JK., Barnes, RT., Higuera, PE., Roos, CI., Schwilk, DW., Stavros, EN., Banerjee, T., Bela, MM., Bendix, J., Bertolino, S., Bililign, S., Bladon, KD., Brando, P., Breidenthal, RE., Buma, B., Calhoun, D., Carvalho, LMV., Cattau, ME., Cawley, KM., Chandra, S., Chipman, M. L., Cobian-Iñiguez, J., Conlisk, E., Coop, JD., Cullen, A., Davis, KT., Dayalu, A., De Sales, F., Dolman, M., Ellsworth, LM., Franklin, S., Guiterman, CH., Hamilton, M., Hanan, EJ., Hansen, WD., Hantson, S., Harvey, BJ., Holz, A., Huang, T., Hurteau, MD., Ilangakoon, NT., Jennings,

M., Jones, C., Klimaszewski-Patterson, A., Kobziar, LN., Kominoski, J., Kosovic, B., Krawchuk, MA., Laris, P., Leonard, J., Loria-Salazar, SM., Lucash, M., Mahmoud, H., Margolis, E., Maxwell, T., McCarty, JL., McWethy, DB., Meyer, RS., Miesel, JR., Moser, WK., Nagy, RC., Niyogi, D., **Palmer, HM.**, Pellegrini, A., Poulter, B., Robertson, K., Rocha, AV., Sadegh, M., Santos, F., Scordo, F., Sexton, JO., Sharma, AS., Smith, AMS., Soja, AJ., Still, C., Swetnam, T., Syphard, AD., Tingley, MW., Tohidi, A., Trugman, AT., Turetsky, M., Varner, JM., Wang, Y., Whitman, T., Yelenik, S., and Zhang, X.: Reimagine fire science for the anthropocene, *PNAS Nexus*, 2022. pgac115, doi.org/10.1093/pnasnexus/pgac115.

Palmer, H. M., Padilla Vriesman, V., Banker, R. M., & Bean, J. R.. Compilation of a database of Holocene nearshore marine mollusk shell geochemistry from the California Current System. *Earth System Science Data*, 2022. 14(4), 1695-1705. doi.org/10.5194/essd-14-1695-2022.

Davis, CV., Livsey, CM., **Palmer, HM.**, Hull, PM., Thomas, E., Hill, TM., Benitez-Nelson, C. Extensive morphological variability in asexually produced planktic foraminifera. *Science Advances*. 2020. Vol. 6, no. 28. doi.org/10.1126/sciadv.abb8930.

Palmer, HM., Hill TM, Roopnarine PR, Myhre SM, Donnefield JT, Reyes, KR. Southern California margin benthic foraminiferal assemblages record recent centennial-scale changes in oxygen minimum zone. *Biogeosciences*. 2020. Vol 17, 2923–2937. doi.org/10.5194/bg-17-2923-2020.

REPORTS, DATABASES, AND OTHER PUBLICATIONS

Palmer, HM. Challenges, Time, and Change: Similarities Between Science and Policymaking. GSA Today. December 2023. Vol. 33. No. 12.

Palmer, HM. At the Intersection of Science and Policy. GSA Today. July 2023. Vol. 33. No. 7.

Palmer, HM., Padilla Vriesman, V., Banker, RMW., Bean, J.R. A database of Holocene nearshore marine mollusc shell geochemistry from the Northeast Pacific. *PANGAEA*. 15 September 2021. doi.org/10.1594/PANGAEA.941373

California Council on Science and Technology. The Costs of Wildfire in California: An Independent Review of Scientific and Technical Information. October 2020.

Chapter 2: Background—California Wildfires. Evans, SM., Feo, TJ., **Palmer, HM.**, Cook, B.

Chapter 3: Fire Prevention, Mitigation, and Suppression. Evans, SM., Feo, TJ., **Palmer, HM.**, Cook, B.

Chapter 4: Buildings and Infrastructure. Feo, TJ., Cook, B., **Palmer, HM.**

Chapter 5: Health Impacts. Cannedy, C. Feo, TJ., **Palmer, HM.**

Chapter 6: Ecosystem Processes. Feo, TJ., **Palmer, HM.**, Cook, B.

Chapter 7: Additional Economic Impacts of Wildfires. Evans, SM., **Palmer, HM.**, Cook, B.

TEACHING EXPERIENCE

Instructor of Record

2024 The Oceans – University of California, Davis (>100 students, 3 units, lower division)

2021 Environmental Policy – University of California Center of Sacramento (4 units, upper division)

Guest Lectures

2021 “Stable isotopes in marine ecosystems.” Stable Isotope Ecology – University of California, Merced (Graduate course)

2020 “Holocene Paleoclimate: approaches, processes, and patterns.” Global Change –

University of the Pacific (Upper division undergraduate)

Teaching Assistant

- 2018 Oceans and Climate Change– University of California, Davis (3 units, graduate seminar)
 2018 Oceanography – University of California, Davis (3 units, lower division)
 2017 Biological Oceanography – University of California, Davis, Bodega Marine Laboratory (4 units, upper division)
 2016 The Earth – University of California, Davis (3 units, lower division)
 2013 Marine Botany – University of California, Los Angeles (4 units, upper division)

MENTORSHIP

- 2022 Alejandra Rodriguez, University of California, Merced
 2021-2022 Anna Pelz, University of California, San Diego, awarded DeWitt Higgs Award for the Most Outstanding Honors Thesis in Law and Public Policy
 2021 Environmental policy cohort, University of California Center Sacramento (11 students)
 2020 Sonali Langlois, Santa Rosa Junior College, awarded SACNAS Student Travel Award
 2019 Kimberly Bowman, University of California, Davis
 2018-2019 Nik Nurhafieza 'Fieza' Nik Mohd Rosidi, University of California, Davis
 2018 Olivia Zanzonico, University of California, Davis
 2017 – 2019 Katherine Reyes, Santa Rosa Junior College, awarded SACNAS Student Travel Award
 2017 – 2018 Jonas Donnenfield, Carleton College
 2016 Brendan O'Shea, University of California, Davis

POLICY ENGAGEMENT

- 2024 Contributing author to California's 5th Climate Change Assessment's Central Coast Regional Report
 2024 Member of Sustainability and Climate Change Committee for Moving Montco Forward - Montgomery County, Pennsylvania
 2023 – 2024 Member of Geological Society of America, Geology and Public Policy Committee
 2022 Invited Participant to National Science Foundation Expert Witness Training Academy
 2021 Presidential Graduate Opportunities for Leadership Development Policy Fellow at University of California Center Sacramento and California Council on Science and Technology
 2019 Paleoclimate to Policy Workshop. UC Davis, Bodega Marine Laboratory.

OUTREACH AND PUBLIC ENGAGEMENT

- 2023 Featured on Blue Dot Podcast: "[West coast climate now and in the past with Hannah Palmer and Veronica Vriesman](#)" on Palmer et al., 2023
 2023 Radio interview on Jefferson Public Radio on "[Climate research shows the changes in our part of the world, just 'recently'](#)" on Palmer et al., 2023
 2023 Featured article in San Francisco Chronicle "[How California's climate has evolved over a geologic timescale](#)" on Palmer et al., 2023
 2023 Featured article in California Aggie "[One-of-a-kind study explores changes in the coastal West region over past 10,000 years](#)" on Palmer et al., 2023
 2022 Invited public talk: Climate Change Education to Montessori World Educational Institute.
 2016-2020 Judge for The GLOBE Program International Virtual Science Fair.
 2019 Public talk. Science Uncorked Series, Bodega Bay, CA.

2017 March for Science San Luis Obispo Co-organizer and Social Media Manager.

ACADEMIC SERVICE

2021 Founder and moderator of UC Merced Postdoc Virtual Connection Space
Initiated and built Slack workspace to connect all UC Merced Postdocs

2020 – 2021 Facilitator of UC Davis Coastal and Marine Sciences Anti-Racism Reading Group
Led monthly conversations with staff, faculty, administration, and students

2019 – 2020 Director of Santa Rosa Junior College – Bodega Marine Laboratory Internship Program
Directed over 50 mentors/mentees, in-person (2019) and virtual (2020)

2019 – 2021 Member of Bodega Marine Laboratory Diversity, Equity, and Inclusion Committee
Advocated for and implemented DEI initiatives at Bodega Marine Laboratory

2019 Co-organizer of Bodega Marine Laboratory Seminar Committee
Invited and coordinated all speakers in weekly research seminar series

2018 – 2019 Co-founder and lead organizer of NorCalPaleo Conference (April 6, 2019)
Designed, built leadership team, and led conference for > 100 students and faculty

2018 – 2019 Co-organizer of Paleoclimate to Policy Workshop held at the Bodega Marine Laboratory
Piloted recruitment, program design, and facilitation of interdisciplinary workshop

2018 Member of Bodega Marine Laboratory Transportation Committee
Advocated for and secured university vehicle for all student use to promote equity

2017 Leader of UC Davis Geology Graduate Group new student welcome trip
Redesigned and led field trip to promote equity and inclusion

PROFESSIONAL AND PEDAGOGICAL DEVELOPMENT

2020 Bystander Intervention Training, UC Davis

2018 – 2019 Education and Outreach Intern, UC Museum of Paleontology

2018 NOAA Satellite Data Course. University of Washington.

2018 R Software Carpentry Course.

2016 Climate Change Curriculum Development Course.

2017 UC Davis Science Communication Short Course. Coastal and Marine Science Institute.

2016 Science Communication Course. Bodega Marine Laboratory.

2015 Education and Training Coordinator for The GLOBE Program, Boulder, CO

FIELD EXPERIENCE

2021 Postfire soil collection, Sequoia National Forest and Sequoia National Park
Led team of graduate students to conduct field assessments and collections

2019 Live foraminifera collection and culture, Bodega Marine Laboratory
Reared living foraminifera in experimental seawater conditions

2017 Applied California Current Ecosystem Studies Oceanographic Cruises
May, July, September R/V Fulmar. Oceanographic survey of CBNMS/GFNMS.

2012 Marine Biology Field Course. Moorea, French Polynesia

2013 AAUS SCUBA Certified Scientific Diver – over 40 dives completed

INVITED PRESENTATIONS OF RESEARCH

Palmer, HM. Linking science and policy: building bridges between research and decision making.
University of Arizona. Tree Ring Research Laboratory. March 22, 2023.

Palmer, HM. Linking science and policy: building bridges between research and decision making.

- University of California, Merced Environmental Systems Talk Series. February 10, 2023.
- Palmer, HM**, Ocean and climate change in the Northeast Pacific through the Holocene. University of California, Merced EnviroLunch. September 13, 2021.
- Palmer, HM**. 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. April 30, 2019.

CONFERENCE PARTICIPATION

SESSIONS ORGANIZED

- Session convener and chair. Marine-terrestrial Connections between the Pacific and the Americas. American Geophysical Meeting (virtual). December 2020.
- Session convener and chair. Paleo to policy: bridging the gap between the paleo-sciences and decision-making. American Geophysical Meeting. December 2019.
- Session convener and chair. Utilizing Ecological and Oceanographic Records to Understand Ecological Responses to Modern Climate Change. Ocean Sciences Meeting. Portland, OR. February 2018.

SELECTED PRESENTATIONS OF RESEARCH

- Palmer, HM**, Rodriguez, AM, Lukens, C, Trayler, R, and Kim, S. Impact of wildfire severity on soil biogeochemistry following wildfire in the California Sierra Nevada. Geological Society of America Annual Meeting. October 2022. (oral)
- Palmer, HM**, Smart, A., Brumbaugh, S. A marine science internship, without the ocean: transitioning a community college internship program to a virtual setting. American Geophysical Union Fall Meeting. December 2020. (oral, virtual)
- Palmer, HM**, Hill, TM, Roopnarine, PD, Stott, LD, Exploring changes to ocean oxygenation and seafloor ecosystems in Southern California Borderlands through the Holocene. American Geophysical Union Fall Meeting. December 2020. (poster, virtual)
- *Langlois, S, **Palmer, HM**, and Hill, 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, 2020. (poster)
- Palmer, HM**, Hill, TM, Stott, LD, Roopnarine, PD, Pak, 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 2020. San Diego, CA. (poster)
- Hill, TM, Ricart, AM, Kroeker, K, Spalding, A, Gaylord, B, Sanford, E, Kauzer, J, Carter, H, Whiteman, E, **Palmer, HM**, Ward, M, Kennedy, E, Close, S, Knight, E. Changing Ocean Chemistry on the US West Coast: From Knowledge to Action. Ocean Sciences Meeting. February 2020. San Diego, CA. (oral)
- Garcia C, **Palmer HM.**, Vriesman, V, Hill, TM, Roopnarine, PD, Angel, M, Pearson, LK. New Data from Old Cores: Supplementing the Paleoceanographic Sedimentary Archive with Museum Collections. Ocean Sciences Meeting. February 2020. San Diego, CA.
- Palmer, HM**, Hill, TM, Vriesman, V, Livsey, C, Fish, C. A review of Holocene climate and oceanography of the Western United States and Northeast Pacific. American Geophysical Union Fall Meeting. December 9, 2019. San Francisco, CA. (poster)
- Palmer, HM**, Hill TM, Myhre, SM, Donnefield, JT, Reyes, 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, 2019. (poster)
- Palmer, HM**, Hill, TM, Padilla Vriesman, V, Bean, JR. Southern California Margin oceanographic and ecological change through the Holocene. SACNAS - The National Diversity in STEM Conference. San Antonio, TX. October 12, 2018. (poster)

- *Reyes, KR. **Palmer, HM.** Hill, 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, 2018. (poster)
- Palmer, HM.** Recent past as a window to the future. Bodega Marine Laboratory Research Seminar Series. Bodega Bay, CA. April 16, 2018. (oral)
- *Donnenfield, JT. **Palmer, HM.** Hill, 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, 2018. (poster)
- Palmer, HM,** Myhre, SE, Hill, TM, Donnenfield, JT. Recent fossil record provides unique insight into impacts of multiple stressors on community ecology. Ocean Sciences Meeting. Portland, OR. February 16, 2018. (oral)
- Palmer, HM,** Myhre, SE, Hill, TM, Donnenfield, 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, 2017. (oral)
- *Lead author is student mentee.

PEER REVIEW

Reviewer for: Deep Sea Science, PLOS One, Journal of Oceanography and Limnology, Quaternary Science Reviews