

ZACHARY S. KAUFMAN

zackkauf@stanford.edu ◊ Website ◊ GitHub

Postdoctoral Scholar, Earth System Science Dept., Stanford Doerr School of Sustainability
473 Via Ortega, Y2E2 337, Stanford, CA 94035

EDUCATION

University of California, Santa Cruz, Ph.D. in Earth and Planetary Science (2022)
Wesleyan University, B.A. in Earth and Environmental Science, *Departmental Honors* (2016)

PROFESSIONAL APPOINTMENTS

Stanford University

- Postdoctoral Scholar, Earth System Science Dept. (2023 - Present)
Advisor: Professor Earle Wilson
- Instructor, Stanford Continuing Studies Program (2024 - Present)

University of California, Santa Cruz

- Graduate Research Assistant, Earth and Planetary Science Dept. (2017 - 2022)
Advisor: Professor Nicole Feldl
- NSF Graduate Research Fellow (2019-2022)

Los Alamos National Laboratory

Graduate Research Intern, HiLAT-RASM Project, US Department of Energy (Summer 2018)
Advisor: Dr. Wilbert Weijer

PUBLICATIONS

Undergraduate mentees are underlined

1. E. Wilson, D. Bonan, **Z.S. Kaufman** “The role of mixed layer depth variability in decadal Southern Ocean SST trends”. *In Prep.*
2. **Z.S. Kaufman**, E. Wilson, R. Beadling, A. Purich, Y. Li, 2025: “The Impact of Underestimated Southern Ocean Freshening on Simulated Historical Sea Surface Temperature Trends”. *Geophysical Research Letters*, 52(6), e2024GL112639. <https://doi.org/10.1029/2024GL112639>
3. **Z.S. Kaufman**, N. Feldl, and C. Bealieu, 2024: “Warm Arctic-Cold Eurasia Pattern Driven by Atmospheric Blocking in Models and Observations”. *Environmental Research: Climate*, 3(1), 015006. <https://doi.org/10.1088/2752-5295/ad1f40>
4. **Z.S. Kaufman** and N. Feldl, 2022: “Causes of the Arctic’s Lower-Tropospheric Warming Structure”. *Journal of Climate*, 35.6, 1983-2022. <https://doi.org/10.1175/JCLI-D-21-0298.1>
5. **Z.S. Kaufman**, N. Feldl, W. Weijer and M. Veneziani, 2020: Causal Interactions Between Southern Ocean Polynyas and High-Latitude Atmosphere-Ocean Variability. *Journal of Climate*, 33, 4891-4905. <https://doi.org/10.1175/JCLI-D-19-0525.1>

FELLOWSHIPS/AWARDS

Stanford Doerr Discovery Grants

Could Underwater Barriers Stabilize the Antarctic Ice Sheet? An assessment of their potential effectiveness and the large-scale oceanic response
(2025), Project co-lead w/ Earle Wilson, Funding Award: \$75,000

NSF Graduate Research Fellowship

The Use of Causal Discovery Techniques for Quantifying High-Latitude Climate Feedbacks (2019 - 2022), Funding Award: \$102,000

MEDIA COVERAGE

Dineen, J. "Another extreme low for Antarctic sea ice signals a permanent shift" *New Scientist*. September 12, 2024. <https://www.newscientist.com/article/2447700-another-extreme-low-for-antarctic-sea-ice-signals-a-permanent-shift/>

Dineen, J. "There are growing fears of an alarming shift in Antarctic sea ice" *New Scientist*. March 11, 2024. <https://www.newscientist.com/article/2421376-there-are-growing-fears-of-an-alarming-shift-in-antarctic-sea-ice/>

HONORS

Best Postdoc Oral Presentation (2nd place)

Stanford Data Science for Sustainability Conference, Stanford, CA (April 2023)

Best Student Oral Presentation

17th Conference on Polar Meteorology and Oceanography, Madison, WI (August 2022)

TEACHING EXPERIENCE

Subject Specialties

Statistics, Time Series Analysis, Causal Inference, Scientific Computing (Python, R, Matlab), Anthropogenic Climate Change, Atmosphere and Ocean Dynamics

Instructor of Record, Stanford Continuing Studies Program

Rising Tides, Shifting Landscapes: The Science of Global Climate Change (Spring 2024, 2025)

Teaching Assistant, UC Santa Cruz

- EART-124, Modeling Earth's Climate (Spring 2021)
- EART-121, The Atmosphere (Fall 2018)
- EART-12, Intro to Weather and Climate (Winter 2018)

MENTORING/ADVISING

Undergraduate Mentor

- Stanford Sustainability and Earth Summer Undergraduate Research Program (SESUR, Summer 2023, 2024)
- Geosciences Education and Mentorship Support Program (GEMS, Summer 2021 - Fall 2022)
- UC Santa Cruz Climate Dynamics Group (Spring 2019)

Current/Former Mentees

- Yuchen Li, Stanford Class of 2026 (2023-Present)
- Catherine Collins, Univ. of Arizona (2021-2022), now MS candidate at University of Vermont
- Omar Rosales-Cortez, UC Santa Cruz (2019), now MS student at Stanford University

ACADEMIC SERVICE

Meeting Host and Organizer

- Reading Group, Machine Learning for Climate Predictability, Stanford Doerr School of Sustainability (Summer 2024 - Present)
- Whole Earth Seminar, UC Santa Cruz, Earth and Planetary Science Dept. (Spring 2021)

Graduate Student Departmental Representative

UC Santa Cruz, Earth and Planetary Science Dept. (Fall 2021 - Summer 2022)

Journal Reviewer

Journal of Climate, Ocean Science (EGU), Earth's Future, Environmental Research Letters

COMMUNITY ENGAGEMENT

Group Leader, Geoscientists Encouraging Openness and Diversity in Earth Sciences (GEODES)

UC Santa Cruz, Earth and Planetary Science Dept. (Fall 2017 - Winter 2020)

- Work featured in: J. L. Pinsky, G. H. Edwards, R. E. Maxwell, E. Schnorr, **Z.S. Kaufman**, A. M. Donaldson. "Event-Based Programming Tools to Promote Diversity, Equity, and Inclusion within Earth and Planetary Science Departments." *American Geophysical Union Fall Meeting*. 2019.

Museum Guide and Lecturer

Griffith Observatory, Los Angeles (2017)

Provided public planetary science demonstrations and lectures to observatory visitors

INVITED SEMINARS AND COLLOQUIA

Glaciers Groups Seminar Series, Georgia Tech, October 27th, 2023

HiLAT Phase III Workshop, Naval Postgraduate School, Monterey, CA. September 18th, 2023

RGMA High Latitude Processes and Feedbacks webinar series, June 15th, 2023

Seminar in Atmospheric and Climate Dynamics, University of Washington, May 04th, 2022

RGMA High Latitude Processes and Feedbacks webinar series, January 19th, 2021

CONFERENCE PRESENTATIONS

American Geophysical Union Fall Meeting, December 2024

CalGFD Meeting, September 2024

Ocean Sciences Meeting, February 2024

American Geophysical Union Fall Meeting, December 2023

Stanford Causal Science Conference, November 2023

Stanford Data Science for Sustainability Conference, April 2023

American Meteorological Society, Collective Madison Meeting, August 2022

American Geophysical Union Fall Meeting, December 2021

Graduate Climate Conference (virtual), October 2021

Cloud Feedback Model Intercomparison Project (CFMIP) Conference (virtual), September 2021

American Geophysical Union Fall Meeting (virtual), December 2020

CalGFD Meeting (virtual), August 2020

Ocean Sciences Meeting, February 2020

American Geophysical Union Fall Meeting, December 2019

15th Conference on Polar Meteorology and Oceanography, May 2019