ZACHARY S. KAUFMAN

zackkaufman@temple.edu ⋄ Website
Postdoctoral Scholar, Temple University & Scripps Institute of Oceanography (visiting)
8810 Shellback Way, La Jolla, CA 92037

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

Temple University
- Postdoctoral Scholar, Earth and Environmental Science Dept. (2025 - Present)
- Visiting Scholar, Scripps Institute of Oceanography (2025 - Present)
Advisors: Professor Rebecca Beadling and Dr. Matthew Mazloff

Stanford University
- Postdoctoral Scholar, Earth System Science Dept. (2023 - 2025)
Advisor: Professor Earle Wilson
- Instructor, Stanford Continuing Studies Program (2024 - 2025)

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

Garthwaite, J. "Melting ice, more rain drive Southern Ocean cooling" *Stanford Doerr School of Sustainability.* March 27, 2025 `https://sustainability.stanford.edu/news/melting-ice-more-rain-drive-southern-ocean-cooling`

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. Pensky, 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

Polar Amplification Model Intercomparison Project (PAMIP) Webinar Series, May 29th, 2025
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

The Physics of Changing Polar Climate, Kavili Institute for Theoretical Physics, June 2025
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