

Lily C. Hahn

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EDUCATION

University of Washington, Seattle, WA 2018-2023
Ph.D., Atmospheric Sciences

Yale University, New Haven, CT 2013-2017
B.S., Geology & Geophysics: Atmosphere, Ocean and Climate with Distinction in the Major, *summa cum laude*, Phi Beta Kappa

AWARDS AND HONORS

CIRES Postdoctoral Fellowship Beginning Summer 2026
NOAA Climate & Global Change Postdoctoral Fellowship 2023-2025
American Geophysical Union Monthly Volunteer Spotlight 2025
Wagner Memorial Award for Women in Atmospheric Sciences 2022
Advanced Climate Dynamics Course Participant in Rondane, Norway 2022
Graduate Student Distinguished Service Certificate, UW Atmospheric Sciences 2022
National Science Foundation (NSF) Graduate Research Fellowship 2018-2021
Achievement Rewards for College Scientists (ARCS) Fellowship 2018-2021
Belknap Prize in Geology & Geophysics, Yale 2017
Summer Student Fellowship, Woods Hole Oceanographic Institution 2016
Von Damm Research Fellowship in Geology & Geophysics, Yale 2016
J. Edward Meeker Freshman English Prize, Yale 2014

RESEARCH EXPERIENCE

Scripps Institution of Oceanography September 2023-present
NOAA Climate & Global Change Postdoctoral Fellow: Impacts of the Atlantic Meridional Overturning Circulation on Global and High-Latitude Warming
Hosted by Nick Lutsko and Ian Eisenman

Max Planck Institute for Meteorology Fall 2025
Incubator Program: Interactions between the Atlantic Meridional Overturning Circulation and Low Cloud Feedbacks
Hosted by Sarah Kang

University of Washington, Atmospheric Sciences Department 2018-2023
Mechanisms of polar-amplified warming
Advised by David Battisti and Kyle Armour

University of Oslo, Department of Geosciences Spring 2018
Role of topography for Greenland cloud response to atmospheric circulation
Advised by Trude Storelvmo

Woods Hole Oceanographic Institute Summer 2016, Summer-Fall 2017
Atmospheric circulation variability and extreme Greenland Ice Sheet melt
Advised by Caroline Ummenhofer

Yale Atmosphere, Oceans, and Climate Dynamics Group 2015-2017
Orbital forcing with observationally-constrained clouds; Climate geoengineering effects
Advised by Trude Storelvmo

PEER-REVIEWED PUBLICATIONS

Hahn, L. C., Eisenman, I., Lutsko, N. J., Meccia, V., Mehling, O., and Bellomo, K. (2025). Large Uncertainty in Arctic Warming Driven by the Atlantic Meridional Overturning Circulation. *Geophys. Res. Lett.*, 52, e2025GL119720. <https://doi.org/10.1029/2025GL119720>

Hahn, L. C., Lutsko, N. J., Eisenman, I., Luongo, M., and Xie, S. P. (2025). Contribution of AMOC Decline to Uncertainty in Global Warming via Ocean Heat Uptake and Climate Feedbacks. *J. Climate*, 38, 6245–6259. <https://doi.org/10.1175/JCLI-D-24-0752.1>

Hofer, S., **Hahn, L. C.**, Shaw, J.K. *et al.* (2024). Realistic representation of mixed-phase clouds increases projected climate warming. *Communications Earth & Environment*, 5, 390. <https://doi.org/10.1038/s43247-024-01524-2>

Armour, K. C., Proistosescu, C., Dong, Y., **Hahn, L. C.**, Blanchard-Wrigglesworth, E., Pauling, A. G. *et al.* (2024). Sea-surface temperature pattern effects have slowed global warming and biased warming-based constraints on climate sensitivity. *Proceedings of the National Academy of Sciences*, 121, e2312093121. <https://doi.org/10.1073/pnas.2312093121>

Hahn, L. C., Armour, K. C., Battisti, D. S., Donohoe, A., and Fajber, R. (2023). Seasonal changes in atmospheric heat transport to the Arctic under increased CO₂. *Geophysical Research Letters*, 50, e2023GL105156. <https://doi.org/10.1029/2023GL105156>

Bonan, D. B., Feldl, N., Zelinka, M.D., and **Hahn, L. C.** (2023). Contributions to regional precipitation change and its polar-amplified pattern under warming. *Environmental Research: Climate*, 2, 035010. <https://doi.org/10.1088/2752-5295/ace27a>

Hahn, L. C., Armour, K. C., Battisti, D. S., Eisenman, I., and Bitz, C. M. (2022). Seasonality in Arctic Warming Driven by Sea Ice Effective Heat Capacity. *Journal of Climate*, 35, 1629-1642. <https://doi.org/10.1175/JCLI-D-21-0626.1>

Hahn, L. C., Armour, K. C., Zelinka, M. D., Bitz, C. M., and Donohoe, A. (2021). Contributions to Polar Amplification in CMIP5 and CMIP6 Models. *Frontiers in Earth Science*, 9, 710036. <https://doi.org/10.3389/feart.2021.710036>

Sagoo, N., Storelvmo, T., **Hahn, L. C.**, Tan, I., Danco, J., Raney, B., and Broccoli, A. J. (2021). Observationally Constrained Cloud Phase Unmasks Orbitally Driven Climate Feedbacks. *Geophysical Research Letters*, 48, e2020GL091873. <https://doi.org/10.1029/2020GL091873>

Hahn, L. C., Armour, K. C., Battisti, D. S., Donohoe, A., Pauling, A. G., and Bitz, C. M. (2020). Antarctic elevation drives hemispheric asymmetry in polar lapse-rate climatology and feedback. *Geophysical Research Letters*, 47, e2020GL088965. <https://doi.org/10.1029/2020GL088965>

Hahn, L. C., Storelvmo, T., Hofer, S., Parfitt, R., and Ummenhofer, C. C. (2020). Importance of orography for Greenland cloud and melt response to atmospheric blocking. *Journal of Climate*, 33, 4187–4206. <https://doi.org/10.1175/JCLI-D-19-0527.1>

Donohoe, A., Armour, K. C., Roe, G. H., Battisti, D. S., and **Hahn, L. C.** (2020). The partitioning of meridional heat transport from the Last Glacial Maximum to CO₂ quadrupling in coupled climate models. *Journal of Climate*, 33, 4141-4165. <https://doi.org/10.1175/JCLI-D-19-0797.1>

Hahn, L. C., Ummenhofer, C. C., and Kwon, Y.-O. (2018). North Atlantic natural variability modulates emergence of widespread Greenland melt in a warming climate. *Geophysical Research Letters*, 45, 9171-9178. <https://doi.org/10.1029/2018GL079682>

PUBLICATIONS SUBMITTED AND IN PREPARATION

*Denotes graduate or undergraduate advisee.

Ren, Q., Xie, S.-P., **Hahn, L. C.**, Hu, A., Miyamoto, A., Wang, F., and Li, Y. Indo-Pacific ocean heat transport lessens Atlantic Meridional Overturning Circulation effect on tropical rainfall. Submitted to *Nature Climate Change*, 2026.

Hahn, L. C., Frank, K.*, Lutsko, N. J., Eisenman, I., Bonan, D. B., and Mauritsen, T. Key Role of the Water Vapor Feedback for Arctic Warming in Feedback Locking Experiments. Anticipated submission, 2026.

Liang, Y.-C., Bonan, D. B., **Hahn, L. C.**, Arthun, M., England, M. R., Feldl, N., Graff, L. S., Hankel, C., Kim, D., Pithan, F., and Tan, I., Present and Future Arctic Amplification Across a Hierarchy of Models. Anticipated submission, 2026.

Mackay, B.*, **Hahn, L.C.**, Eisenman, I., and Xie, S. P., Decomposing the Impact of Sea Ice on the Arctic Climate: Albedo, Ice Export, and the Seasonal Pattern Effect. Anticipated submission, 2026.

OTHER WORKS

Taylor, P., N. Feldl, G. de Boer, **L. Hahn**, A. Nguyen, M. Raphael, and S. Sejas, 2025: *Polar Amplification of Climate Change Across Hemispheres and Seasons: A US CLIVAR Workshop Report*. A. Johnson and M. Patterson, Eds. U.S. CLIVAR Project Office, <https://doi.org/10.5065/w89a-4q87>.

Forster, P., Storelvmo, T., Armour, K., Collins, W., Dufresne, J.-L., Frame, D., ... , **Hahn, L. C.**, et al., 2021: The Earth's Energy Budget, Climate Feedbacks, and Climate Sensitivity. In *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 923–1054.
https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Chapter07.pdf

GRANTS

Proposal Lead Writer, "Impact of the Atlantic Meridional Overturning Circulation on Warming Uncertainty: Isolating the Effects of Climate Feedbacks and the Mean-State AMOC." NSF Division of Atmospheric and Geospace Sciences Atmospheric Cluster (AGS-AC), \$835K, beginning Summer 2026. Co-PIs: Nick Lutsko, Ian Eisenman.

TEACHING AND MENTORSHIP

Research Advising

Ben Mackay, Scripps Institution of Oceanography, PhD student	2023-present
Kelly Frank, University of California San Diego, Undergraduate	Winter-Spring 2025
Elinor Kay, Smith College, Undergraduate Intern	Summer 2023
Benjamin Buchovecky, Princeton University, HMEI Undergrad. Intern	Summer 2022
Madeleine Burns, Princeton University, HMEI Undergraduate Intern	Summer 2022

Guest Lecturer, Scripps Institution of Oceanography, UC San Diego
Numerical Modeling of the Climate System Spring 2024
Model Workshop: Using Simple Models and Analyzing GCM Output

Dynamics of the Atmosphere and Climate <i>Polar Amplification</i>	Spring 2024
Guest Lecturer , University of Washington, Atmospheric Sciences Exploring the Atmospheric Sciences <i>Ice and Climate</i> <i>Climate feedbacks and polar warming</i>	Spring 2023 Fall 2022
Instructor , University of Washington, Atmospheric Sciences Exploring the Atmospheric Sciences	Summer 2021
Teaching Assistant , University of Washington, Atmospheric Sciences Climate and Climate Change (Professor: Kat Huybers)	Fall 2019
UW Odegaard Writing and Research Center <i>Writing Tutor</i>	2019-2020
Yale Science and Quantitative Reasoning Tutoring Program <i>Chemistry and Calculus Tutor</i>	2014-2016

COMMUNITY ENGAGEMENT

AGU Thriving Earth Exchange <i>Community Science Fellow</i> Facilitate collaborative projects co-developed by communities and scientists	2023-2025
<i>Volunteer Scientist</i> , Environmental Benefits Chapter Feasibility Study for Community Choice Aggregation of Renewable Energy Options	2019-2020
UW Program on Climate Change (PCC) ACORN Program <i>Co-Founder and Co-Lead</i> Actionable Community-Oriented Research eNgage ment connects graduate students with community leaders to address community climate and energy priorities	2020-2023
<i>Volunteer Scientist</i> Emissions Impacts of Demand Response Implementation in Washington State	2020-2022

UNIVERSITY AND PROFESSIONAL SERVICE

Conference Activities <i>Convener</i> , AGU Fall Meeting, Polar Climate Variability and Change: Observations, Drivers, and Impacts	2026
<i>Scientific Organizing Committee</i> , US CLIVAR Polar Amplification Workshop	2023-2024

<i>Convener, AGU Fall Meeting, Innovative Initiatives in Conducting Community-Based Science and Training the Next Generation of Practitioners</i>	2021
<i>Executive Committee Co-Chair, Graduate Climate Conference</i>	2021
<i>Executive Committee Member, Graduate Climate Conference</i>	2020, 2022

Department Service

NCAR Postdoctoral Fellows Networking Committee	2023-2024
UW Program on Climate Change Graduate Steering Committee	2019-2021
UW Atmospheric Sciences Part-Time Lecturer Search Committee	2021

Grant Reviewer

National Science Foundation: Climate and Large-Scale Dynamics

Journal Reviewer

Atmospheric Chemistry and Physics, Climate Dynamics, Communications Earth & Environment, Environmental Research: Climate, Geophysical Research Letters, Journal of Climate, Journal of Geophysical Research – Atmospheres, Nature, Nature Communications, npj Climate and Atmospheric Science

PRESENTATIONS

Invited Talks

Imperial College London, Department of Physics	May 2026
UCLA, Atmospheric and Oceanic Sciences	February 2026
Max Planck Institute for Meteorology	September 2025
UC Santa Cruz, Whole Earth Seminar	May 2025
CU Boulder, Atmospheric and Oceanic Sciences Colloquium	March 2025
Stanford University, Climate Dynamics Seminar	January 2025
American Geophysical Union (AGU) Fall Meeting	December 2024
UW-Madison, Dept. of Atmospheric and Oceanic Sciences Seminar	October 2024
UC Irvine, Department of Earth System Science Seminar	May 2024
US CLIVAR Workshop on Polar Amplification of Climate Change	January 2024
Scripps Institution of Oceanography, Climate, Atmospheric Sciences, and Physical Oceanography Seminar	October 2023
UW Program on Climate Change Summer Institute	September 2023
University of Washington, Odegaard Writing and Research Center	June 2023
Desert Research Institute, Wagner Award Seminar	November 2022
Paleoclimate Advances Webinar Series	July 2022
Polar Amplification Model Intercomparison Project Webinar Series	June 2022
Columbia University, Department of Earth and Environmental Sciences, Seminar in Race, Climate Change, and Environmental Justice	February 2021
European Polar Science Week	October 2020

Contributed Talks

AGU Fall Meeting	December 2018, 2019, 2020, 2021, 2023, 2025
California Geophysical Fluid Dynamics Conference (CalGFD)	September 2024
NOAA Climate and Global Change Summer Institute	July 2024
American Geophysical Union (AGU) Fall Meeting	December 2023
Polar Friday, Applied Physics Laboratory, University of Washington	November 2020
Graduate Climate Conference	November 2019
European Geophysical Union (EGU) General Assembly	April 2018

Contributed Posters

Cloud Feedback Model Intercomparison Project Workshop	June 2024
AGU Fall Meeting	December 2022, 2024
Graduate Climate Conference	October 2020, 2021, 2022
US CLIVAR Pattern Effect Workshop	May 2022
EGU General Assembly	April 2018
American Meteorological Society Annual Meeting	January 2017
Geoengineering Model Intercomparison Project (GeoMIP) Meeting	June 2016