

VINCENT T. COOPER

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RESEARCH INTERESTS

Climate dynamics • Paleoclimate • Radiative feedbacks and climate sensitivity • Natural and forced variability • Hydrological cycle • Data assimilation and climate reconstruction • Coupled interactions between the atmosphere, land, ocean, and ice

EDUCATION

UNIVERSITY OF WASHINGTON	Seattle, WA
Ph.D., Atmospheric and Climate Science	2025
M.S., Atmospheric Sciences	2022
HARVARD UNIVERSITY	Cambridge, MA
A.B., Statistics, <i>Cum laude</i> (College Honors)	2015

PROFESSIONAL EXPERIENCE

MASSACHUSETTS INSTITUTE OF TECHNOLOGY	Cambridge, MA
<i>Houghton Postdoctoral Fellow, Department of Earth, Atmospheric, and Planetary Sciences</i>	2025–
• Hosted by P. O’Gorman & D. McGee	
UNIVERSITY OF WASHINGTON	Seattle, WA
<i>Graduate Research Assistant & NDSEG Fellow, Department of Atmospheric and Climate Science</i>	2020–2025
• Advised by K. C. Armour, G. J. Hakim, and C. M. Bitz	
• Ph.D. Thesis: Paleoclimate and Historical Perspectives on Modern Climate Sensitivity	
• M.S. Thesis: Wind Waves in Sea Ice of the Western Arctic and a Global Coupled Wave-Ice Model	
AMERICAN SECURITIES	New York, NY
<i>Associate, Private Equity Investment Team</i>	2017–2019
• Investment highlight: lead associate on ~\$1.5B acquisition of BELFOR, the firm’s largest investment to date; BELFOR is the world’s largest damage reconstruction provider, rebuilding homes and businesses after extreme weather and hurricanes	
EVERCORE	New York, NY
<i>Investment Banking Analyst, Mergers & Acquisitions Advisory</i>	2015–2017
• Transaction highlight: advised Equinix, a data center company, on the \$3.6B acquisition of 29 high-performance data centers	

AWARDS & HONORS

• Houghton Postdoctoral Fellowship, MIT EAPS Department	2025
• Outstanding Student Presentation Award, AGU Fall Meeting	2024
• Early Career Scientist Award, CFMIP/CLIVAR Conference on Clouds, Precipitation, Circulation, and Climate	2024
• Schmidt Science Fellows Nominee for University of Washington	2024
• National Defense Science & Engineering Graduate (NDSEG) Fellowship, US Department of Defense	2020–2023
• Outstanding Student Presentation Award, AGU Fall Meeting	2023
• Outstanding Student Presentation Award (3 rd place poster), Polar AMS Meeting	2021
• Outstanding Student Presentation Award, AGU Fall Meeting	2020
• Graduate Provost Fellowship, University of Washington (declined for NDSEG Fellowship)	2020
• Top Scholar Award, Department of Atmospheric Sciences, University of Washington	2020
• Harvard College Scholar Award (top 10% of class)	2015

PUBLICATIONS

* Indicates publication in preparation.

[7] ***Cooper, V.**, K. Armour, and G. Hakim (*Manuscript in preparation*).
Historical pattern effects and climate sensitivity revisited with novel constraints on past warming patterns.

[6] **Cooper, V.**, K. Armour, G. Hakim, J. Tierney, N. Burls, C. Proistosescu, T. Andrews, W. Dong, M. Dvorak, R. Feng, M. Osman, Y. Dong (2026).
Paleoclimate pattern effects help constrain climate sensitivity and 21st-century warming. *Proceedings of the National Academy of Sciences*. doi.org/10.1073/pnas.2511370123.

[5] **Cooper, V.**, G. Hakim, and K. Armour (2025).
Monthly Sea-Surface Temperature, Sea Ice, and Sea-Level Pressure over 1850–2023 from Coupled Data Assimilation. *Journal of Climate*. doi.org/10.1175/JCLI-D-25-0021.1.

[4] Dvorak, M., K. Armour, R. Feng, **V. Cooper**, J. Zhu, N. Burls, and C. Proistosescu (2025).
Mid-Pliocene climate forcing, sea-surface temperature patterns, and implications for modern-day climate sensitivity. *Journal of Climate*. doi.org/10.1175/JCLI-D-24-0410.1.

[3] Tierney, J., J. King, M. Osman, J. Abell, N. Burls, E. Erfani, **V. Cooper**, and R. Feng (2025).
Pliocene warmth and patterns of climate change inferred from paleoclimate data assimilation. *AGU Advances*. doi.org/10.1029/2024AV001356.

[2] **Cooper, V.**, K. Armour, G. Hakim, J. Tierney, M. Osman, C. Proistosescu, Y. Dong, N. Burls, T. Andrews, D. Amrhein, J. Zhu, W. Dong, Y. Ming, and P. Chmielowiec (2024).
Last Glacial Maximum pattern effects reduce climate sensitivity estimates. *Science Advances*. 10, eadk9461.
doi.org/10.1126/sciadv.adk9461. Accompanying article: [*Carbon Brief*].

[1] **Cooper, V.**, L. Roach, J. Thomson, S. Brenner, M. Smith, M. Meylan, and C. Bitz (2022).
Wind waves in sea ice of the western Arctic and a global coupled wave-ice model. *Phil. Trans. of the Royal Society A: Mathematical, Physical and Engineering Sciences*. 380:20210258. doi.org/10.1098/rsta.2021.0258.

PRESENTATIONS

Invited Talks

“Climate sensitivity, radiative feedbacks, and the pattern effect” session, *EGU General Assembly (May 2026)*.

COLDEX Seminar Series, *NSF Center for Oldest Ice Exploration (February 2026)*.

Climate and Paleo Seminar, *Woods Hole Oceanographic Institute (October 2025)*.

Program on Climate Change Summer Institute: Paleoclimate Constraints on Future Climate, *Friday Harbor Laboratories (September 2025)*.

Department of Atmospheric & Oceanic Sciences Seminar, *University of Wisconsin–Madison (May 2025)*.

Environmental Science & Engineering Seminar, *Caltech (April 2025)*.

The Last Glacial Maximum Pattern Effect. *NOAA GFDL (January 2025)*.

Paleoclimate Pattern Effects Lead to Stronger Constraints on Modern-day Climate Sensitivity. *AGU Fall Meeting, Session on Advancing Paleoclimatology (December 2024)*.

Climate Forcings and Feedbacks from Paleo to Pinatubo. *Harvard EPS Seminar (December 2024)*.

Paleoclimate Pattern Effects for PMIP/CMIP7: Last Glacial Maximum and Pliocene. *PMIP WTNGS Seminar (November 2024)*. [Recording available](#).

Overview of Paleoclimate Pattern Effects and Constraints on Modern-day Climate Sensitivity. *NSF workshop on climate evolution from early Eocene to mid-Pliocene, hosted by the University of Connecticut (August 2024)*.

Last Glacial Maximum pattern effects reduce climate sensitivity estimates. *ECS & Cloud Feedback Symposium (October 2023)*. [Recording available](#).

Wind Waves in Sea Ice and a Global Coupled Wave-Ice Model. *Antarctic Sea Ice and Southern Ocean Seminars, hosted by University of Texas (April 2022)*.

Contributed

Cooper, V., K. Armour, and G. Hakim. Radiative Feedbacks over the Historical Record: Insights from a New Reconstruction of Sea-Surface Temperature and Sea Ice. *AGU Fall Meeting (December 2025)*.

Cooper, V., Paleoclimate pattern effects help constrain modern climate sensitivity and 21st-century warming. *Comer Climate Conference (October 2025)*.

Cooper, V., G. Hakim, and K. Armour. Historical Pattern Effects and Climate Sensitivity Revisited with Novel Constraints on Past Warming Patterns. *AGU Fall Meeting (December 2024)*. Received OSPA (Outstanding Student Presentation Award).

Cooper, V., K. Armour, G. Hakim, J. Tierney, N. Burls, C. Proistosescu, M. Dvorak, Y. Dong, T. Andrews, J. Zhu, D. Amrhein, J. King, M. Osman, W. Dong, and Y. Ming. Paleoclimate Pattern Effects and Revised Estimates of Modern-day Climate Sensitivity. *CFMIP/CLIVAR Conference on Clouds, Precipitation, Circulation, and Climate (June 2024)*. Talk. Received CFMIP Early Career Scientist Award.

Dvorak, M., K. Armour, R. Feng, J. Zhu, N. Burls, **V. Cooper**, C. Proistosescu. Mid-Pliocene climate forcing and sea-surface temperature pattern effects in CESM. *CESM Paleoclimate Working Group Meeting (February 2024)*. Talk.

Cooper, V. Paleoclimate Pattern Effects and Climate Sensitivity. *CESM Paleo Working Group Meeting (February 2024)*. Talk.

Cooper, V., K. Armour, G. Hakim, J. Tierney, N. Burls, C. Proistosescu, M. Dvorak, Y. Dong, T. Andrews, J. Zhu, J. King, M. Osman, W. Dong, and Y. Ming. Pliocene Pattern Effects and Constraints on Climate Sensitivity. *AGU Fall Meeting (December 2023)*. Talk.

Cooper, V., G. Hakim, and K. Armour. Variability in Sea-Surface Temperature and Sea Ice Patterns from Coupled Data Assimilation, 1850–present. *AGU Fall Meeting (December 2023)*. Poster. Received OSPA (Outstanding Student Presentation Award).

Dvorak, M., K. Armour, R. Feng, J. Zhu, N. Burls, **V. Cooper**, C. Proistosescu. Mid-Pliocene climate forcing, sea-surface temperature pattern effects, and implications for modern-day climate sensitivity. *AGU Fall Meeting (December 2023)*. Talk.

Cooper, V., K. Armour, C. Proistosescu, Y. Dong, G. Hakim, J. Tierney, M. Osman, N. Burls, D. Amrhein, T. Andrews, Y. Ming, W. Dong, and P. Chmielowiec. SST pattern effect in the Last Glacial Maximum reduces climate sensitivity estimates. *AGU Fall Meeting (December 2022)*. Talk.

Cooper, V., K. Armour, C. Proistosescu, P. Chmielowiec, J. Tierney, M. Osman, Y. Dong, G. Hakim, D. Amrhein, N. Burls, and S. Knapp. The Last Glacial Maximum Pattern Effect. *CFMIP (June 2022)*. Poster.

Cooper, V., L. Roach, J. Thomson, S. Brenner, M. Smith, M. Meylan, and C. Bitz. Wind waves in sea ice of the western Arctic and a global coupled wave-ice model. *National Defense Science & Engineering Graduate Fellowship Conference (July 2022)*. Poster.

Cooper, V., K. Armour, C. Proistosescu, P. Chmielowiec, J. Tierney, M. Osman, Y. Dong, G. Hakim, D. Amrhein, N. Burls, and S. Knapp. The Last Glacial Maximum Pattern Effect. *Pattern Effect Workshop (Boulder, CO, May 2022)*. Poster.

Thomson, J., S. Wahlgren, **V. Cooper**, S. Brenner, M. Smith, S. Swart, L. Biddle, and C. Bitz. Waves observed far (>100 km) within sea ice. *Waves in Shallow Water Environment (WISE) Meeting (May 2022)*. Poster.

Cooper, V., L. Roach, J. Thomson, S. Brenner, M. Smith, and C. Bitz. Waves in the Marginal Ice Zone: Insights from Observations and Modeling. *Polar Meteorology and Oceanography Conference, American Meteorological Society (Polar AMS, June 2021)*. Poster. Received Third Place OSPA (Outstanding Student Presentation Award).

Cooper, V., L. Roach, J. Thomson, S. Brenner, M. Smith, and C. Bitz. Waves in the Marginal Ice Zone: Insights from Observations and Modeling. *Sea State Meeting, hosted by Plymouth Marine Laboratory (March 2021)*. Poster.

L. Roach, C. Bitz, E. Blanchard-Wrigglesworth, **V. Cooper**, C. Horvat. Sea ice at the edge: Seasonal Arctic sea ice in coupled climate models and satellite observations. *AGU Fall Meeting (December 2020)*. Talk.

Cooper, V., L. Roach, J. Thomson, S. Brenner, M. Smith, and C. Bitz. Towards Validating Wave-Ice Interactions in Climate Models Using In Situ Observations. *AGU Fall Meeting (December 2020)*. Poster. Received OSPA (Outstanding Student Presentation Award).

FUNDING & GRANTS

- National Science Foundation Submitted Feb. 2025
“Oxygen triple isotopes as a proxy for atmospheric CO₂ in Pliocene ice samples.”
Role: Collaborator (Letter of Support) for Dr. Asmita Banerjee and Prof. Christo Buizert.
- National Science Foundation 2023–2025
“Quantifying the sea-surface temperature pattern effect for paleoclimate constraints on climate sensitivity.”
Role: Led computing request, managed allocation with NSF NCAR for P2C2 collaborative grant.
- Department of Defense 2020–2023
National Defense Science & Engineering Graduate (NDSEG) Fellowship.

TEACHING & SERVICE

Teaching Experience

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Cambridge, MA

- Made and taught a new short course for January-term: *A Brief Introduction to Inverse Modeling & Climate Dynamics* 2026

UNIVERSITY OF WASHINGTON

Seattle, WA

- Lead Teaching Assistant, Department of Atmospheric and Climate Science: 2022–2023
Selected based on teaching performance to serve as the central resource for all graduate teaching assistants; Trained graduate TAs, evaluated performance, and provided constructive feedback for each TA.
- Teaching Assistant, ATM S 100 *Climate, Justice, and Energy Solutions* (Prof. Dargan Frierson): 2022
Taught four weekly sections of 20–30 students each, held weekly office hours, developed new course materials; 4.85/5.00 “Teaching Effectiveness” rating with reviews highlighting enthusiasm, classroom environment, and explanations.
- Guest Lecturer: ATM S 101 *The Atmospheric General Circulation Parts I & II*, ATM S 220 *Ice & Climate* 2022–2023

Service Experience

- Undergraduate Mentor, Graduate-Undergraduate Mentor Program for Atmospheric and Climate Science 2021–Present
- Graduate Peer Mentor, Atmospheric and Climate Science Peer Mentoring Program 2021–Present
- Student Representative on Faculty Search Committee for Department of Atmospheric and Climate Science 2024–2025
- Guest Author (invited), *Carbon Brief* ([link to article](#)) 2024
- EDI Committee, Student representative (2 students selected) 2023–2024
- Discussion on Climate with Governor Jay Inslee (3 students selected from department) 2023
- Reading group leader, Oceans & Climate (Focus: Southern Ocean variability) 2023
- Convener, Session on Climate Dynamics at UW Program on Climate Change Summer Institute 2023
- Student representative for Fleagle Endowed Lecture Committee with Invited Lecturer Myles Allen 2023
- Guest Author (invited), *The Drift* ([link to article](#)) 2022
- Student member of Welcome Committee for New Students 2021–2022
- Interviewed for Undergraduate Job Fair 2022
- Reading group leader, Climate Economics 2021
- UW Outreach Program: Lecturer on Climate Change and Impacts on the Pacific Northwest 2020–2021
- Peer reviewer for *PNAS*, *Journal of Climate*, *Science Advances*, and *Geophysical Research Letters*
- Member of American Geophysical Union (AGU) and American Meteorological Society (AMS)

FAIR OPPORTUNITY PROJECT

Seattle, WA

Mentor

- One-on-one mentorship for high-school students during college application and decision process

BUCKINGHAM BROWNE & NICHOLS SCHOOL

Cambridge, MA

Math Team Head Coach

2013–2015

- Led competitive math program: weekly lessons, mock tests, and travel to regional competitions

BOSTON PROJECT TEACH*Mentor, College & Career Awareness Program***Cambridge, MA**

2012–2015

- Present and discuss college options and career paths with students from low-income neighborhoods

WORKSHOPS, COURSES, AND FIELD EXPERIENCE

- “Climate evolution from early Eocene to mid-Pliocene.” NSF Workshop. University of Connecticut, Storrs, CT, 2024. Invited speaker.
- “CFMIP Meeting on Clouds, Circulation, Precipitation, and Climate Sensitivity.” CFMIP/CLIVAR, Boston, MA. 2024.
- “CESM Paleoclimate Working Group Meeting.” NCAR, Boulder, CO. 2024.
- Convener for session on Climate Dynamics, “Climate Change at the Poles.” UW Program on Climate Change. Friday Harbor, WA, 2023.
- *Summer School*: “Dynamics of the Global Water Cycle.” Advanced Climate Dynamics Course (ACDC), Norway. 2022.
- “CFMIP Meeting on Clouds, Precipitation, Circulation and Climate Sensitivity.” CFMIP, Seattle, WA. 2022.
- “The Pattern Effect: Coupling of SST Patterns, Radiative Feedbacks, and Climate Sensitivity.” US CLIVAR Workshop. Boulder, CO, May 2022.
- 30-day research cruise in the ice-covered Beaufort Sea. *Arctic Mobile Observing System (AMOS)*, funded by the Office of Naval Research (ONR). Departed from Nome, AK. October–November 2021.
- “Climate Extremes and Environmental Equity.” UW Program on Climate Change Summer Institute. 2020.
- “Climate Change Impacts on Food and Water Security” UW Program on Climate Change. Friday Harbor, WA, 2019.

ACADEMIC REFERENCES

Prof. Kyle Armour Ph.D. Advisor	Department of Atmospheric and Climate Science and School of Oceanography University of Washington ATG Building Box 351640 Seattle, WA 98195-1640, USA Phone: +1 (858) 610-3812 Email: karmour@uw.edu
Prof. Greg Hakim Ph.D. Advisor	Department of Atmospheric and Climate Science University of Washington ATG Building Box 351640 Seattle, WA 98195-1640, USA Phone: +1 (206) 330-8781 Email: ghakim@uw.edu
Prof. Cecilia Bitz M.S. Advisor	Department of Atmospheric and Climate Science University of Washington ATG Building Box 351640 Seattle, WA 98195-1640, USA Phone: +1 (206) 543-1339 Email: bitz@uw.edu
Prof. Jessica Tierney	Department of Geosciences University of Arizona 1040 E 4th St Tucson, AZ 85721, USA Phone: +1 (520) 621-5377 Email: jesst@arizona.edu
Prof. Dennis Hartmann	Department of Atmospheric and Climate Science University of Washington ATG Building Box 351640 Seattle, WA 98195-1640, USA Phone: +1 (206) 543-7460 Email: dhartm@uw.edu