VINCENT T. COOPER

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RESEARCH INTERESTS

Coupled climate dynamics • climate variability • atmosphere-ocean-ice interactions • radiative feedbacks • paleoclimate • hydrologic cycle • climate reconstruction and data assimilation • climate predictability • atmospheric general circulation

EDUCATION

UNIVERSITY OF WASHINGTON — **Seattle, WA**
Ph.D., Atmospheric and Climate Science — 2019–Winter 2025 (expected)
M.S., Atmospheric Sciences — 2019–2022

HARVARD UNIVERSITY — **Cambridge, MA**
A.B., Statistics, Highest non-thesis honors — 2011–2015

ACADEMIC & PROFESSIONAL EXPERIENCE

UNIVERSITY OF WASHINGTON — **Seattle, WA**
Graduate Research Assistant & NDSEG Fellow, Department of Atmospheric and Climate Science — 2019–Present

- Advised by Professors K.C. Armour, G.J. Hakim, and C.M. Bitz
- Ph.D. Thesis: Radiative Feedbacks and Climate Sensitivity in the Paleoclimate Record
- M.S. Thesis: Wind Waves in Sea Ice of the Western Arctic and a Global Coupled Wave-Ice Model

AMERICAN SECURITIES — **New York, NY**
Associate, Private Equity Investment Team ($27 billion of assets under management) — 2017–2019

- Investment highlight: lead associate on ~$1.5B acquisition of BELFOR, the largest transaction in firm history; BELFOR is the world's largest damage reconstruction provider, rebuilding homes and businesses after extreme weather and hurricanes

EVERCORE — **New York, NY**
Investment Banking Analyst, Mergers & Acquisitions Advisory, Technology & Communications Industry — 2015–2017

- Transaction highlight: advised Equinix, a data center provider, on the $3.6B acquisition of 29 data centers from Verizon

AWARDS & HONORS

- Early Career Scientist Award, CFMIP/CLIVAR Conference on Clouds, Circulation, and Climate — 2024
- Schmidt Science Fellows Nominee (application under review) — 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 (3rd 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) — 2011–2015

PUBLICATIONS

* *Indicates publication in preparation, submitted, in review, or in press.*

[7] ***Cooper, V.,** K. Armour, and G. Hakim. Historical pattern effects and climate sensitivity revisited with novel constraints on past warming patterns. *To be submitted to Geophysical Research Letters.*

[6] ***Cooper, V.**, G. Hakim, and K. Armour. Coupled Atmosphere-Ocean Reconstruction of Globally Resolved Sea-Surface Temperature, Sea Ice, and Sea-Level Pressure from 1850−2023. *To be submitted to Journal of Climate.*

[5] ***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 indicate stronger constraints on modern-day climate sensitivity. *To be submitted to Nature Geoscience.*

[4] *Dvorak, M., K. Armour, R. Feng, **V. Cooper**, J. Zhu, N. Burls, and C. Proistosescu. Mid-Pliocene climate forcing, sea-surface temperature patterns, and implications for modern-day climate sensitivity. *In review, Journal of Climate.*

[3] *Tierney, J., J. King, M. Osman, J. Abell, N. Burls, E. Erfani, **V. Cooper**, and R. Feng. Pliocene warmth and patterns of climate change inferred from paleoclimate data assimilation. *In revision, AGU Advances.*

[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. [*Carbon Brief* Article]

[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. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences.* 380:20210258. doi.org/10.1098/rsta.2021.0258.

PRESENTATIONS

Cooper, V. Paleoclimate Pattern Effects Lead to Stronger Constraints on Modern-day Climate Sensitivity. *AGU Fall Meeting (upcoming, December 2024).* Invited talk.

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

Cooper, V. The Last Glacial Maximum Pattern Effect. *NOAA GFDL Climate Sensitivity Journal Club (upcoming, December 2024).* Invited talk.

Cooper, V. Overview of Paleoclimate Pattern Effects and Paleoclimate Constraints on Modern-day Climate Sensitivity. *NSF workshop on climate evolution from early Eocene to mid-Pliocene* (*August 2024).* Invited talk.

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, 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., 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 Climate Sensitivity. *CESM Paleoclimate 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, 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. Last Glacial Maximum pattern effects reduce climate sensitivity estimates. *ECS & Cloud Feedback Symposium (Oct. 2023).* Invited talk *(recording available).*

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, M. Meylan, and C. Bitz. Wind waves in sea ice and a global coupled wave-ice model. *Antarctic Sea Ice and Southern Ocean Seminars, hosted by The University of Texas at San Antonio (April 2022).* Invited talk.

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).**

TEACHING & SERVICE

UNIVERSITY OF WASHINGTON **Seattle, WA**

Teaching Experience

- 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, evaluated, and provided teaching feedback; added new training on equity and inclusion to TA orientation.
- 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, created and graded course assignments;
  Developed new teaching materials for the course (first offered in 2021) with emphasis on equity and inclusion;
  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 and Outreach

- Guest Author (invited), *Carbon Brief* (link to article) 2024
- Student Representative on Faculty Search Committee for Department of Atmospheric and Climate Science 2024
- Equity, Diversity, and Inclusion (EDI) Committee, Student Representative (2 students selected) 2023–present
- Diversity and Inclusion Group (DIG): Member of student-led group 2021–present
- Mentor, Graduate-Undergraduate Mentor Program for Atmospheric Sciences 2021–present
- Discussion on Climate with Governor Jay Inslee (3 students selected from department) 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
- Undergraduate Environmental Job Fair 2022
- UW Outreach Program: Lecturer on Climate Change and Impacts on the Pacific Northwest 2020–2021
- Peer reviewer for Journal of Climate (x6) and Geophysical Research Letters (x2)

FAIR OPPORTUNITY PROJECT **Seattle, WA**

Mentor 2019–2021

- One-on-one mentorship for high-school students from underrepresented backgrounds during college application 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 **Cambridge, MA**
Mentor, College & Career Awareness Program 2012–2015

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

ACADEMIC REFERENCES

Prof. Kyle Armour
Ph.D. Advisor

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