

Jacqueline M. Nugent

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Education

University of Washington, Seattle, WA

8/2023 **Ph.D. in atmospheric sciences**, data science option
Dissertation: Overshooting Convection, Cirrus, and the Cold Point Tropopause in Global Storm-Resolving Models and Satellite Observations
Advisor: Dr. Chris Bretherton

6/2021 **M.S. in atmospheric sciences**

University of Oklahoma, Norman, OK

5/2018 **B.S. in meteorology**, *summa cum laude*
5/2018 **B.A. in mathematics**, with special distinction

Research Experience

1/2024 – Present **U. of Wyoming Dept. of Atmospheric Science**, Laramie, WY
Postdoctoral Research Associate
Advisor: Dr. Daniel McCoy

9/2023 – 12/2023 **U. of Washington Dept. of Atmospheric Sciences**, Seattle, WA
Interim Postdoctoral Scholar
Advisor: Dr. Peter Blossey

9/2018 – 8/2023 **U. of Washington Dept. of Atmospheric Sciences**, Seattle, WA
Research Assistant
Advisor: Dr. Chris Bretherton

6/2021 – 9/2021 **Vulcan, Inc.** (now at Allen Institute for AI), Seattle, WA
Machine Learning Intern
Advisors: Dr. Andre Perkins and Dr. Anna Kwa

8/2017 – 5/2018 **U. of Oklahoma School of Meteorology**, Norman, OK
Student Research Assistant
Advisor: Dr. Michael Biggerstaff

6/2016 – 8/2016 **NOAA Earth System Research Laboratory**, Boulder, CO
Hollings Scholar
Advisor: Dr. Michael Fiorino

Publications

Submitted

- **Nugent, J. M.**, Bretherton, C. S., & Blossey, P. N. (2024). What sets the tropical cold point in GSRMs? Overshooting convection vs. cirrus lofting. *ESS Open Archive*. doi:10.22541/essoar.172405869.95851202/v1 (*Under review at Earth and Space Science*)

Peer-Reviewed

- Perkins, W. A., Brenowitz, N. D., Bretherton, C. S., & **Nugent, J. M.** (2024). Emulation of Cloud Microphysics in a Climate Model. *Journal of Advances in Modeling Earth Systems*, 16(4), e2023MS003851. doi:10.1029/2023MS003851
- **Nugent, J. M.**, & Bretherton, C. S. (2023). Tropical Convection Overshoots the Cold Point Tropopause Nearly as Often Over Warm Oceans as Over Land. *Geophysical Research Letters*, 50(21), e2023GL105083. doi:10.1029/2023GL105083
- **Nugent, J. M.**, Turbeville, S. M., Bretherton, C. S., Blossey, P. N., & Ackerman, T. P. (2022). Tropical cirrus in global storm-resolving models: 1. Role of deep convection. *Earth and Space Science*, 9, e2021EA001965. doi:10.1029/2021EA001965
- Turbeville, S. M., **Nugent, J. M.**, Ackerman, T. P., Bretherton, C. S., & Blossey, P. N. (2022). Tropical cirrus in global storm-resolving models: 2. Cirrus life cycle and top-of-atmosphere radiative fluxes. *Earth and Space Science*, 9, e2021EA001978. doi:10.1029/2021EA001978

Awards and Honors

2020	NSF Graduate Research Fellowship Program Honorable Mention
2018	James Holton Endowed Graduate Support Fund, U. of Washington
2018	Phi Beta Kappa Society, Alpha of Oklahoma Chapter
2017	American Meteorological Society Senior Named Scholarship: Liv and Walt Lyons Scholarship
2017	Kelvin and Lisa Droegemeier Endowed Scholarship for Excellence in Meteorology, U. of Oklahoma
2016	Ernest F. Hollings Undergraduate Scholarship Program, National Oceanic and Atmospheric Administration
2015	Best Poster Award, U. of Oklahoma First Year Research Experience
2014	American Meteorological Society Freshman Undergraduate Scholarship
2014	U. of Oklahoma School of Meteorology Scholarship

Presentations

9/2024	Composition Air Quality Climate inTeractions Initiative (CACTI) Workshop , San Diego, CA <ul style="list-style-type: none">• Evaluating Aerosol-Cloud Interactions in E3SMv3 Using a Perturbed Parameter Ensemble (Talk)
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| 8/2024 | DOE Earth and Environmental Systems Modeling (EESM) Principal Investigators Meeting , Washington, DC <ul style="list-style-type: none">• Evaluating Aerosol-Cloud Interactions in E3SMv3 Using a Perturbed Parameter Ensemble (Talk) |
| 12/2023 | American Geophysical Union Fall Meeting , San Francisco, CA <ul style="list-style-type: none">• Can Global Storm-Resolving Models Reproduce Observed Cold Point-Overshooting Convection? (Talk) |
| 7/2023 | Joint CFMIP-GASS Meeting , Paris, France <ul style="list-style-type: none">• Tropical tropopause-penetrating convection and cold point cirrus: satellite observations vs. global storm-resolving models (Poster) |
| 12/2022 | American Geophysical Union Fall Meeting , Chicago, IL <ul style="list-style-type: none">• Evaluating Overshooting Convection in the DYAMOND Global Storm-Resolving Models Using Outgoing Longwave Radiation (Talk)• The Cold Point Tropopause in DYAMOND GSRMs: Overshooting Convection vs. Cirrus Lofting (Poster) |
| 7/2022 | 3rd Pan-GASS Meeting: Understanding and Modeling Atmospheric Processes , Monterey, CA <ul style="list-style-type: none">• Overshooting Convection and Tropical Cirrus in the DYAMOND Global Storm-Resolving Models (Poster) |
| 7/2022 | Cloud Feedback Model Intercomparison Project (CFMIP) Meeting , Seattle, WA <ul style="list-style-type: none">• Overshooting Convection and Tropical Cirrus in the DYAMOND Global Storm-Resolving Models (Talk) |
| 12/2021 | American Geophysical Union Fall Meeting , Virtual <ul style="list-style-type: none">• Tropical Cirrus in Global Storm-Resolving Models: The Role of Deep Convection (Poster) |
| 12/2020 | American Geophysical Union Fall Meeting , Virtual <ul style="list-style-type: none">• The Influence of Microphysics and Convection over Land on TTL Cirrus in the DYAMOND Simulations (Poster) |
| 5/2020 | 6th ENES High Performance Computing Workshop , Virtual <ul style="list-style-type: none">• Evaluating Convection and Tropical Tropopause Layer Cirrus in the DYAMOND Simulations (Talk) |

Teaching Experience

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| Fall 2022,
Spring 2021 | ATM S 490: Current Weather Analysis , U. of Washington
Instructor of Record <ul style="list-style-type: none">• Taught two sections (for majors and non-majors) of a weekly seminar course on weather for undergraduate students.• Led discussions and lectures about weather forecasting basics and topics based on students' interests. |
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Winter 2020

ATM S 101: Weather, U. of Washington

Teaching Assistant

- Taught three weekly quiz sections to groups of undergraduate non-major students to review lecture material and engage in active learning activities.
- Prepared and graded homework, quiz, and exam questions.

Mentoring Experience

9/2018 – 8/2023

Graduate-Undergraduate Mentoring Program, U. of Washington (UW) Atmospheric Sciences

- Met quarterly with an undergraduate mentee to share advice on success in the program and applying to research internships and graduate schools.

6/2020 – 8/2020

Cooperative Institute for Climate, Ocean, and Ecosystem Studies (CICOES) Research Internship, Virtual

- Assisted with day-to-day supervision of an undergraduate's summer research project, including guidance of data analysis and scientific writing.
- Intern: Haley Staudmyer; mentored by Dr. Tom Ackerman

External Service

2024 – Present

Program Co-Chair, American Meteorological Society Committee on Cloud Physics

- Coordinate and schedule the conference program for the Second Symposium on Cloud Physics at the AMS Annual Meeting.

2023 – Present

Referee for the following journals:

- *Geophysical Research Letters*
- *npj Climate & Atmospheric Science*
- *Journal of Advances in Modeling Earth Systems*
- *JGR: Atmospheres*
- *Earth and Space Science*
- *Advances in Space Research*

Outreach and Community Involvement

2024 – Present

Member, Women in Math, Science and Engineering (WiMSE), U. of Wyoming

2022 – 2023

Member, Diversity and Inclusion Group, UW Atmospheric Sciences

2020 – 2023

Coordinator, Coding Club / “Hacky Hour,” UW Atmospheric Sciences

2018 – 2023

Coordinator, Atmos Women's Group, UW Atmospheric Sciences

2020 – 2023

Volunteer, Outreach Program, UW Atmospheric Sciences

2021

Assistant Event Supervisor, Science Olympiad National Tournament

Hackathon Participation

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| 6/2024 | Pythia Cook-off 2024 , Virtual <ul style="list-style-type: none">• Created a Python Cookbook for regridding and visualizing geoscientific data (https://projectpythia.org/esgf-cookbook/notebooks/ex-regrid-plot.html). |
| 10/2019–12/2019 | Coupled Model Intercomparison Project Phase 6 (CMIP6) Hackathon , U. of Washington Branch, Seattle, WA <ul style="list-style-type: none">• Created a publicly available outreach tool to allow policymakers and other researchers to easily access and visualize CMIP6 data for a specified location (https://github.com/czarakas/local_climate_change_tool). |
| 6/2019 | Second Annual DYAMOND-ESiWACE Hackathon , Mainz, Germany <ul style="list-style-type: none">• Attended workshops on data analysis for the DYAMOND project. |