Brendan C. Wallace

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Dept. of Atmospheric and Environmental Sciences
University at Albany
1400 Washington Ave.
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Research Interests: *Convection-permitting modeling, regional climate, weather over complex terrain, land surface-atmosphere interactions*

Education

University at Albany, State University of New York ····· Sep 2016 - *present*
Ph.D.; Atmospheric Science, *in progress*
M.S.; Atmospheric Science ····· May 2019
Advisor: Dr. Justin Minder

Western Illinois University ····· May 2016
B.Sc.; Meteorology
Minor: Mathematic, Geographic Information Systems (GIS)

Research Experience

Graduate Research Assistant ····· Jan 2022 - *present*
Research Foundation - University at Albany, SUNY
Supervisor: Dr. Scott Miller

- Create and evaluate calibration models for low-cost air pollution sensors that are used to generate real time diagnostic plots.

Graduate Research Assistant ····· Jun 2017 - Jan 2022
Research Foundation - University at Albany, SUNY
Supervisor: Dr. Justin Minder

- Analysis of convection-permitting regional climate simulations over complex terrain to investigate how land-surface feedbacks and precipitation respond to climate warming
- Evaluate automated station snow depth and snow water equivalent measurements against manual observations at New York mesonet sites for use in calibrating land surface parameterization schemes.

Climatologist Intern ····· May 2015 - Aug 2015
Midwestern Regional Climate Center
Supervisor: Dr. Nancy Westcott

- Manually input and quality control an extensive record of station datasets extending back into the 19th century

Undergraduate Student Researcher ····· May 2014 - May 2016
Western Illinois University, Dept. of Geography
Supervisor: Dr. Marcus Büker

- Diagnose how variables that contribute to severe weather spatially vary across the Midwestern U.S. under various prevailing flow directions
- Use spatial statistics to diagnose tornado density and probability

Teaching Experience

Graduate Teaching Assistant
Dept. of Atmospheric and Environmental Sciences, University at Albany SUNY

- TATM 110 - Weather and Climate Issues ····· Fall 2016
- ENV 327 - Meteorological and Environmental Measurements ····· Spring 2017
- ATM 505 - Introduction to Atmospheric Physics II ····· Spring 2021

Selected Presentations

Wallace, B., Minder, J. (2021). Diagnosing Changes in North American Monsoon Precipitation and Moisture Sources in Response to Climate Warming using Convection Permitting Models. *The Fifth Convection-Permitting Climate Modeling Workshop 2021 (virtual).* [poster]
Wallace, B., Minder, J. (2020). Orographic Convection during the North American Monsoon in Convection Permitting Simulations under Climate Warming. *AMS 19th Conference on Mountain Meteorology (virtual).* [oral]
Wallace, B., Minder, J. (2019). The Simulated Impact of Snow Loss on Convective Precipitation over the Rocky Mountains under Climate Warming. *13th Graduate Climate Conference, Woods Hole, MA.* [oral]
Wallace, B., Minder, J. (2019). The Simulated Impact of Snow Loss on Convective Precipitation over the Rocky Mountains under Climate Warming. *18th Conference on Mesoscale Processes, Savannah, GA.* [oral]
Wallace, B., Minder, J. (2018). The Simulated Impact of the Snow-Albedo and Soil Moisture Feedbacks on Convective Precipitation within the Rocky Mountains under Climate Warming. *GEWEX Convection-Permitting Climate Modeling Workshop II, Boulder, CO.* [poster]
Wallace, B., Minder, J. (2018). The Simulated Impact of the Snow-Albedo and Soil Moisture Feedbacks on Convective Precipitation within the Rocky Mountains under Climate Warming. *18th Conference on Mountain Meteorology, Santa Fe, NM.* [oral]
Wallace, B., Bosart, L.F. (2017). An Examination of Three Challenging to Predict Mesoscale Convective Events during May 2016. *17th Conference on Mesoscale Processes, San Diego, CA.* [poster]

Publications

Wallace, B., & Minder, J.R. (*In Preparation*). Investigating the response of rainfall and precipitation recycling to grid spacing for the North American Monsoon.
Wallace, B., & Minder, J.R. (*In Preparation*). The North American Monsoon precipitation response to climate warming at convection-permitting scales.
Wallace, B., & Minder, J. R. (2021). The impact of snow loss and soil moisture on convective precipitation over the Rocky Mountains under climate warming. Climate Dynamics (Vol. 56, Issues 9–10, pp. 2915–2939). https://doi.org/10.1007/s00382-020-05622-7
Deng, Y., **Wallace, B.**, Maassen, D., Werner, J. (2016). A Few GIS Clarifications on Tornado Density Mapping. Journal of Applied Meteorology and Climatology, 55(2), 283-296.

Workshops

NCAR ASP Summer Colloquium; The Interaction of Precipitation with Orography ····· 2017

- Technical training with CESM and WRF to test sensitivity of orographic precipitation to terrain height, grid spacing, and snow cover.
- Attended talks from guest lecturers on topics pertaining to precipitation over complex terrain

Awards

1st place Student Oral Presentation, *18th Conference on Mountain Meteorology* ····· 2018
Arthur G. Tillman Scholarship, *Western Illinois University, Dept. of Geography* ····· 2015
Presidential Scholarship, *Western Illinois University* ····· 2012-2016

Technical Skills

Programming: Python (jupyter, dask, xarray, numpy, pandas), NCL, FORTRAN, LaTeX, UNIX Shell Scripting

Software: GRASS GIS, ESRI Products (ArcMap, ArcCatalog, etc.)

Computing: Mesoscale atmospheric modeling (Weather Research and Forecasting Model; WRF), High-performance computing environments (NCAR Yellowstone & Cheyenne), Portable Batch System [PBS] job queuing and submission, Slurm Workload Manager

Professional Affiliations

American Meteorological Society