

Kyle T. Brooks

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EDUCATION

University of Georgia Athens, Georgia
Master of Science (M.S), Geography July, 2024
“Modeling the Impacts of a Major Tropical Cyclone Landfall on Coastal Georgia” GPA: 3.63/4.00

University of Georgia Athens, Georgia
Bachelor of Science (B.S), Atmospheric Sciences May, 2022
“Thermodynamic Profiles of Extreme Precipitation in Taiwan” GPA: 3.90/4.00

University of Georgia Athens, Georgia
Bachelor of Science (B.S), Geography May, 2022
GPA: 3.66/4.00

Selected Coursework

Atmospheric Dynamics I & II, Introduction to Data Assimilation, Mesoscale & Radar Meteorology, Synoptic Meteorology, Tropical Meteorology (Summer '24), GeoAI, Data Science for Geographers, Programming for Atmospheric Scientists, Hydrometeorology

RESEARCH EXPERIENCE

Department of Geography, University of Georgia Athens, Georgia
Graduate Teaching Assistant - Mentor: Dr. John A. Knox June, 2023- July, 2024

- Investigated the accuracy of DOE 20th Century Reanalysis v3 (20CRv3) dataset in analyzing the last major Tropical Cyclone (TC) to make landfall in Georgia (1898)
- Model storm’s landfall at unprecedented scale by initializing WRF-ARW with 20CRv3 dataset on NCAR Derecho supercomputer
- Created custom Python modules to insert data into the WRF, code included FORTRAN components
- Testing effect of different convective schemes in WRF-ARW performance relating to TCs

Department of Geography, University of Georgia Athens, Georgia
Graduate Research Assistant - Mentor: Dr. John A. Knox June, 2022 - July, 2023

- Presidential seed-grant from the University of Georgia using Georgia Mesonet data to calculate recurrence intervals for extreme precipitation in Georgia
- Collaboration with leading experts across several fields to create new guidelines for dealing with extreme precipitation
- Learned PostgreSQL to manipulate mesonet datasets spanning decades
- Partnered with Department of Statistics to generate recurrence intervals based on this data

Department of Atmospheric Science, Colorado State University Fort Collins, Colorado
Undergraduate Research Assistant - Mentor: Dr. Michael M. Bell May, 2021 - August, 2021

- Investigated thermodynamic profiles of extreme precipitation in Taiwan with the Bell laboratory
- Found evidence of 600 hPa moisture intrusion consistent with literature
- Developed supporting evidence for the PRECIP field campaign in Taiwan
- Learned Python intimately over the span of the summer

TEACHING EXPERIENCE

- Covered introduction to weather and climate inclusive of radiation budgets, global circulation, force balances, severe weather, and tropical cyclones
- Enacted discussions of current events and stressed importance of basic understanding of meteorology

SELECTED PUBLICATIONS / PRESENTATIONS

Brooks, K. T., J. A. Knox, P. A. Knox, L. Seymour, and Z. Lei, 2023: Exploring Extreme Wind Statistics in Georgia Mesonet and National Weather Service Data. *27th Conference on Other Topics in Applied Climatology*, Denver, CO, Amer. Meteor. Soc., <https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/422419>

Brooks, K. T., C. Nam, M. M. Bell, J. C. DeHart, 2022: Variability in Thermodynamic Profiles of Extreme Precipitation Events in Northern Taiwan. *21st Annual Student Conference*, Houston, TX, Amer. Meteor. Soc., <https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/400649>

HONORS, AWARDS, & GRANTS

HOPE Scholarship

Creation of a student-run, on-campus Numerical Weather Forecasting Model. Athens, GA
UGA 2023 Student Technology Fee One-time Funding Allocation January, 2023 - April, 2025

Developing new storm design criteria for natural hazards planning research and practice (co-PI). Athens, GA
UGA 2021 Presidential Interdisciplinary Seed-Grant January, 2022 - June, 2023

WRF in the GEOG 1112 Curriculum. Athens, GA
UGA 2023 Franklin College Teaching Enhancement and Innovation Grant August, 2023 - April, 2025

PROFESSIONAL AFFILIATIONS

American Meteorological Society, Member and Graduate Representative	February, 2020 - Present
UGA Atmospheric Sciences Coding Initiative and Implementation (ASCI), Founder	June, 2023 - Present
UGA XEP Atmospheric Science Honor Society, Member	August, 2021 - Present

SKILLS

	<u>Atmospheric Sciences</u>	
Spatial Statistics	Data Assimilation	Mesoscale Meteorology
	Teaching in Atmospheric Sciences	Severe/Convective Storms
Numerical Weather Prediction	Forecasting/Nowcasting	Radar Meteorology

	<u>Computing</u>	
Linux (Arch, Fedora, Ubuntu)	Python	Visual Studio Code
Windows/macOS	MATLAB, R, C++, FORTRAN	Bash/Unix Scripting
Dataset Creation	Computer Hardware	Optimization for Large Tasks

	<u>Soft Skills</u>	
Team Player	LaTeX	Proposal Design
Teaching (esp. undergrad courses)	MS Office	Data Visualization
Peer Review Process	Time Management	Oral Presentations