

Mary Grace Albright

Preferred name: Mary Grace (she/her/hers)

Curriculum Vitae

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EDUCATION

PhD Candidate, Geological Sciences (anticipated conferral May 2026)

University of Connecticut

Committee Members: Ran Feng (advisor), Clay Tabor, Chris Fielding,
Jiang Zhu, Colin Zarzycki

Dissertation: *Hydroclimatic and Thermal Changes Across Cenozoic Warm Intervals: Implications for Future Climate*

Storrs, CT

Aug. 2021-present

B.S., Applied Mathematics

Furman University

Minor, Environmental Studies

Advisor: John Harris

Greenville, SC

Aug. 2017-May 2021

PEER-REVIEWED PUBLICATIONS

4. **Albright, M.G.**, Mayer, T., Feng, R., Fastovich, D., Bhattacharya, T., Ford, H., Constraining the CO₂-Induced Pacific Walker Circulation Strength Changes in the Late Pliocene through Water Isotopologues. In prep (for *Nat. Comm.*).
3. **Albright, M.G.**, Feng, R., Bhattacharya, T., Li, H., Otto-Bliesner, B., Zarzycki, C., Zhu, J., Mid-Pliocene North American Monsoon in Weather Resolving Coupled Simulations. In prep (for *PNAS*).
2. Feng, Z., Prein, A., Kukulies, J., Fiolleau, T., Jones, W., Maybee, B., Moon, Z., Núñez Ocasio, K. M., Dong, W., Molina, M., **Albright, M G.**, Feng, R., Song, J., Song, F., Leung, R. L., Varble, A., Klein, C., Roca, R., Mesoscale Convective Systems Tracking Method Intercomparison: Application to DYAMOND Global km-scale Simulations. *JGR Atmospheres*. Submitted.
DOI: [10.22541/essoar.172405876.67413040/v1](https://doi.org/10.22541/essoar.172405876.67413040/v1)
1. **Mary Grace Albright**, Caroline Vickery, Roy Bower & John E. Quinn (2023) Patterns of land use change, land governance, and the supply of ecosystem services in a multifunctional landscape: A case study from Upstate SC, USA, *Journal of Land Use Science*, 18:1, 284-295, DOI: 10.1080/1747423X.2023.2234903

ORAL PRESENTATIONS (* indicates invited)

9. **Albright, M.G.**, Molina, M. J., Feng, R., Zhu, J., Otto-Bliesner, B., Brady, E., Tabor, C.: A Global Climatology of Mesoscale Convective Systems in Ultra High-Resolution Simulations of Key Cenozoic Intervals, Climate Evolution from Early Eocene to mid-Pliocene Workshop, Storrs, CT, 19-21 Aug 2024.
8. **Albright, M. G.**, Weitzel, N., Inglis, G. N., Steinig, S., Renoult, M., Reichgelt, T., Fletcher, T., Tindall, J., and Feng, R.: Quantifying the State Dependency of Climate Sensitivity Across Cenozoic Warm Intervals, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-13307, <https://doi.org/10.5194/egusphere-egu24-13307>, 2024.
7. ***Albright, M.G.**, Feng, R., Bhattacharya, T., Otto-Bliesner, B., Zarzycki, C., Zhu, J., Li, H.: Insights from Weather Resolving Coupled Simulations on the Mid-Pliocene North American Monsoon, MIT-WHOI Climate & Paleo Seminar Series, 28 March 2024.
6. **Albright, M. G.**, Feng, R., Bhattacharya, T., Li, H., Otto-Bliesner, B., Zarzycki, C., Zhu, J.: Mid-Pliocene North American Monsoon in Weather Resolving Coupled Simulations, AGU Fall Meeting 2022, Chicago, Illinois, 12-16 Dec. 2022.
5. **Albright, M.G.**, Feng, R., Bhattacharya, T., Li, H., Otto-Bliesner, B., Zarzycki, C., Zhu, J.: Mid-Pliocene North American monsoon in weather resolving coupled simulations, CESM Paleoclimate Working Group Workshop, Online, June 2022.

4. **Albright, M. G.**, Feng, R., Zhu, J., Otto-Bliesner, B., Li, H., and Bhattacharya, T.: Mid-Pliocene North American Monsoon in Weather Resolving Coupled Simulations, EGU General Assembly 2022, Vienna, Austria, 23–27 May 2022, EGU22-5586, <https://doi.org/10.5194/egusphere-egu22-5586>, 2022.
3. **Albright, M.G.**, Feng, R., Zhu, J., Otto-Bliesner, B., Li, H., Bhattacharya, T.: Mid-Pliocene North American monsoon in weather resolving coupled simulations, University of Connecticut Geoscience Day Research Symposium, Storrs, Connecticut, April 2022.
2. **Albright, M.G.**, Feng, R., Zhu, J., Otto-Bliesner, B., Li, H., Bhattacharya, T.: Mid-Pliocene North American monsoon in weather resolving coupled simulations, CESM Paleoclimate Working Group Winter Workshop, Online, February 2022.
1. **Albright, M.G.**, Quinn, J., Bower, R.: Diminishing Local Farmland: An assessment of the rise of development in Greenville County, South Carolina, Furman Engaged, Online, 2021

POSTERS

- Albright, M.G.**, Weitzel, N., Inglis, G. N., Steinig, S., Renoult, M., Reichgelt, T., Fletcher, T., Tindall, J., Feng, R.: Quantifying the State Dependency of Climate Sensitivity Across Cenozoic Warm Intervals, AGU Fall Meeting 2023, San Francisco, CA, 11-15 Dec. 2023.
- Albright, M. G.**, Feng, R., Bhattacharya, T., Li, H., Otto-Bliesner, B., Zarzycki, C., and Zhu, J.: Contributions of Resolved Mesoscale Systems to the North American Monsoon in High Resolution Simulations of the Mid-Pliocene, Graduate Climate Conference, Woods Hole, MA, 2-4 Nov. 2023.
- Albright, M. G.**, Feng, R., Zhu, J., Otto-Bliesner, B., Li, H., and Bhattacharya, T.: Mid-Pliocene North American Monsoon in Weather Resolving Coupled Simulations, The warm Pliocene: Bridging the geological data and modelling communities, Leeds, United Kingdom, 23–26 Aug 2022, GC10-Pliocene-6, <https://doi.org/10.5194/egusphere-gc10-pliocene-6>, 2022.
- Albright, M.G.**, Quinn, J., Bower, R.: Diminishing Local Farmland: An assessment of the rise of development in Greenville County, South Carolina, Furman Engaged, 2021.

RESEARCH EXPERIENCE

Graduate Assistant

Aug. 2021-present

University of Connecticut, Department of Earth Sciences

Dissertation research explores the use of high resolution simulations and machine learning to understand hydroclimate changes throughout the past ~65 million years. Interested in determining how weather systems change under warmer intervals in the Earth's history. Current participant in mesoscale convective system tracking intercomparison efforts (MCSMIP) led by Zhe Feng.

Visiting Graduate Student

Summer 2023

University of Tübingen, SPACY group led by Prof. Dr. Kira Rehfeld

Worked collaboratively to estimate global mean surface temperature during Cenozoic warm intervals to better constrain equilibrium climate sensitivity using a Bayesian framework.

Undergraduate Research Assistant

May 2020-Dec.2020

Furman University, Department of Mathematics, Department of Biology

Used statistical analysis and GIS data to assess urban development's effect on farmland loss in Greenville and Spartanburg counties in South Carolina.

SERVICE & OUTREACH

Head UConn Earth Science Mentor

Fall 2023-present

Established and organized a new mentorship program between UConn Earth Science graduate and undergraduate students. Sent out a call for mentors and mentees and currently in the process of assigning matches between students. Personally volunteered to take on two undergraduate mentees.

Girls Who Code Club Facilitator

Fall 2023-present

Head volunteer at East Hartford High School, a Title I school in Connecticut.

Teaching female students with little to no coding experience how to use Python for creating simple games, data visualization, and music composition.
Geoscience Education & Mentor Support (GEMS) Mentor
Mentoring one undergraduate student from Arizona State University.

Fall 2023-May 2024

GRANTS, FELLOWSHIPS, SCHOLARSHIPS, & ALLOCATIONS

Data Analysis Allocation, NSF National Center for Atmospheric Research <i>Casper GPU: 500 GPU hours; Casper: 40,000 Core-hours</i>	Sept. 2024
Conference Participation Award, University of Connecticut	Aug. 2024
PhD Fellowship, University of Connecticut	Summer 2023/2024
Early Career Scientist Travel Grant, Galileo Conference, European Geoscience Union	Aug. 2022
Travel Funding, CESM Tutorial, National Center for Atmospheric Research	Aug. 2022
Pre-Doctoral Fellowship, University of Connecticut	Summer 2022
Bell Tower Scholarship, Furman University	Aug. 2017-May 2021
L.H. Bowen Memorial Scholarship, Furman University Department of Mathematics	Aug. 2019-May 2021
Summer Mathematics Undergraduate Research Fellow, Furman University	May 2020-July 2020
Professional Athletes Foundation Family Scholarship, NFL Players Association	Aug. 2017-May 2018
Charlie Harville Memorial Scholarship, Community Foundation of Greater Greensboro	Aug. 2017-May 2018
Earle Scholarship, Walter Hines Page High School	Aug. 2017-May 2018

TEACHING EXPERIENCE

Lab Instructor, Earth's Dynamic Environment (GSCI/ERTH 1050/1052) <i>Department of Geosciences, University of Connecticut, Storrs</i> Instructed 20-25 undergraduate students per section in introductory level geology labs.	Fall 2021/Spring 2023
Teaching Assistant, Creating and Sustaining National Parks (ERTH 2310E) <i>Department of Geosciences, University of Connecticut, Storrs</i> Assisted with grading for 150 undergraduates and provided study assistance during office hours. Topics included plate tectonics, climate and biotic change, natural hazards, Earth materials and resources, environmental conservation, and the interactions between human society and the natural world. Guest lectured once.	Spring 2023/Spring 2024

AWARDS

Nalwalk Award for Excellence in Research, UConn Earth Sciences Department	April 2024
Outstanding Oral Presentation Award, UConn Geoscience Day Research Symposium	April 2022 & 2023
Excellence in Environmental Studies, Furman University	May 2021

PROFESSIONAL DEVELOPMENT

PaleoCAMP 2-week summer school for graduate students: Paleoclimate Training in Climate Archives, Models, and Proxies	June 2024
Paleoclimate Data Assimilation Workshop Virtual workshop led by Michael Erb on data assimilation in Python for paleoclimate data	Aug. 2023
Community Earth System Model Tutorial Tutorial by the National Center for Atmospheric Research on the usage of the Community Earth System Model with the Cheyenne supercomputer.	Aug. 2022
Thompson Field Forum Field forum by the Geological Society of America led by Elizabeth Cassel, Chris Henry, Craig Jones, and John Wakabayashi. Took place in Nevada and	June 2022

California and discussed the topic: Old or Young? The Topographic Evolution of the Sierra Nevada.

PROFESSIONAL EXPERIENCE

Information Technology Staff

Furman University

Provided technical support for Furman students, staff, alumni, and faculty

Aug. 2019-May 2021

Mathematics Tutor

Furman University

Tutored Furman students in calculus and statistics

Jan. 2019-Aug. 2020

LEADERSHIP AND COMMITTEES

Graduate Student Advisory Committee, College of Liberal Arts and Sciences

Aug. 2024-present

President, UConn Geoscience Graduate Group

May 2024-present

Co-Chair of Advertising and Communications, Graduate Climate Conference

Jan. 2024-present

Vice President, UConn Geoscience Graduate Group

May 2023-May 2024

Events Coordinator, UConn Geoscience Graduate Group

Aug. 2022-May 2023

Faculty Search Committee Member, UConn Earth Science Department

Aug. 2022-May 2023

HARD SKILLS

Python, R/RStudio, Julia, MATLAB, Java, Linux, High Performance Computing, Machine Learning, Git/GitHub, VS Code, ArcGIS products, Microsoft Office Suite, Community Earth System Model, Data Visualization

OTHER ACTIVITIES

Student Athlete

Furman University

Practiced 20 hours/week and traveled for games (~55 games per season in spring) for the NCAA Division I Women's Softball Team in addition to other team activities throughout the academic year while carrying a full course load.

Aug. 2017-May 2019