

PUBLICATIONS

Malloy, K.M. and Kirtman, B.P. (2021). East Asian monsoon forcing and North Atlantic subtropical high modulation of summer Great Plains low-level jet. *J. Climate*, under review.

Malloy, K.M. and Kirtman, B.P. (2020). Predictability of Midsummer Great Plains Low-Level Jet and Associated Precipitation. *Wea. Forecasting*, 35, 215–235, <https://doi.org/10.1175/WAF-D-19-0103.1>.

Mahoney, K., Swales, D., Mueller, M.J., Alexander, M., Hughes, M., and Malloy, K. (2018). An Examination of an Inland-Penetrating Atmospheric River Flood Event under Potential Future Thermodynamic Conditions. *J. Climate*, 31, 6281–6297, <https://doi.org/10.1175/JCLI-D-18-0118.1>.

EDUCATION

University of Miami Rosenstiel School of Marine & Atmospheric Science Expected: Spring 2022
Ph.D. Program

Thesis: Predictability of Great Plains Summer Hydroclimate via Extratropical Teleconnections

Advisor: Ben Kirtman

Bachelor of Science: University of Maryland, College Park 2017

Atmospheric & Oceanic Science

Minor: Remote Sensing of Environmental Change

RELEVANT GRADUATE-LEVEL COURSES

Univ. Miami. (27 credits)

Intro to ATM, Climate Change, Geophysical Fluid
Dynamics I & II, General Circulation of
Atmosphere, Data Analysis Methods, Advanced
Weather Forecasting, Predictability, ENSO
Dynamics, Computational Fluid Dynamics

Univ. Maryland (6 credits)

Physical Oceanography
Analysis Methods in Atmospheric & Oceanic
Sciences

RESEARCH EXPERIENCE

Graduate Research Assistant, Univ. Miami Rosenstiel School

Fall 2017-Present

Ph.D. Advisor: Dr. Benjamin Kirtman

- Predictability of summer Great Plains / North American low-level jet and associated precipitation on S2S and interannual timescales through understanding of large-scale dynamics and climate variability
- Using Python for reading and visualizing data
- High-level data analysis on:
 - NASA, ECMWF, and NOAA reanalysis and observational datasets (ERA-5, MERRA-2, ERSST, NCEP/NCAR, etc.)
 - Community Climate System Model, v4 (CCSM4) forecast output
 - Dry nonlinear baroclinic atmospheric model output
 - Community Atmospheric Model, v5 (CAM5) output
- Community Earth System Model (CESM1.2) and CAM5 setup, build, & run four different experiment
- Setup, write code for monsoon forcing, and run idealized forcing with a dry nonlinear baroclinic model
- Oral presentation at 2021 AMS annual meeting
- Oral presentation at Rosenstiel School Student Seminar series in 2019, 2020, 2021
- Poster presentation at 2020 AMS annual meeting

Intern, NOAA Climate and Weather Prediction Center, Ocean Prediction Center Fall 2016-Spring 2017

- Building case study analysis of stratospheric air intrusion events and improving hurricane-force wind forecasts of extratropical cyclones in Atlantic Ocean using satellite imagery
- Give presentations or instructional kits to Alaskan Weather Forecast Offices and Ocean and Weather Prediction Centers
- Research defended for senior thesis:
 - oral prospectus defense in Fall 2016
 - poster presentation in Spring 2017
- Research presented at 2017 AMS Annual Meeting, poster presentation

Intern, NOAA Earth System Research Lab Physical Sciences Division (ESRL/PSD) Summer 2016

- Diagnosed case study of atmospheric river event by comparing “present-day” precipitation and moisture transport over western US with simulated “future” case using pseudo-global warming approach
 - Work with Weather and Research Forecasting (WRF) output to compare control (present-day) run with pseudo-global warming (future) run
- Research presented at NOAA Hollings Research Symposium, oral presentation
- Research presented at 2017 AMS Annual Meeting, poster presentation

Intern, UC San Diego Scripps Undergraduate Research Fellowship (SURF) Summer 2015

- Compared vertical profiles of Feb. 6th 2015 atmospheric river event using NCEP/NCAR Final Reanalysis model and dropsonde data
- Research presented at SIO SURF Student Symposium, poster presentation
- Research presented at 2016 AMS Annual Meeting, poster presentation

RELEVANT EXTRACURRICULARS

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| Co-founder, <i>Seasoned Chaos</i> blog about subseasonal-to-seasonal forecasting | Present |
| • https://seasonedchaos.github.io | |
| Lead Coordinator, Students for Students Outreach | Present |
| Rosenstiel School Graduate-Undergraduate Mentoring (GUM) program | Present |
| Rosenstiel School Climate Group | Present |
| Rosenstiel School Marine Science Graduate Student Organization’s Sustainability Initiative | Present |
| Rosenstiel School Marine Science Graduate Student Organization’s Earth Week Committee | Present |
| Rosenstiel School COMPASS Seminar Committee | 2019-2020 |
| Presenter/Collaborator, Rosenstiel School Lunch Bytes Seminar | Spring 2019 |

SKILLS & AWARDS

- Attended the 2021 NCAR Advanced Summer Program “The Science of Subseasonal-to-Seasonal Predictions” Colloquium and Workshop
- Languages (in order of proficiency): Python, Matlab, Shell, Git Bash, Fortran, Markdown/HTML, NCAR Command Language (NCL), C
- Software/Operating Systems (no particular order): Linux/Unix, Git Bash, Microsoft Office (Word, Excel, Powerpoint, etc.)
- Involved in Machine Learning/Artificial Intelligence literature reading group with some experience in applying to climate data
- Accepted into 2020 Swiss Climate Summer School (canceled because of COVID-19)
- Attended Summer 2018 Weather and Climate Extremes NCAR Tutorial/Workshop
- 2017 University of Maryland Undergraduate Researcher of the Year
- 2017 University of Maryland Philip Merrill Presidential Scholar
- 2017 Richard Jordan Scholar (for atmospheric & oceanic science senior thesis presentations)

- 2015-2016 NOAA Ernest F. Hollings Scholar