Kelsey Malloy

267-304-8685 (cell)
kelsey.malloy@rsmas.miami.edu

PUBLICATIONS

Malloy, K.M. and B.P. Kirtman, 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., D. Swales, M.J. Mueller, M. Alexander, M. Hughes, and K. Malloy, 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 defense: 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. (24 credits)
Intro to ATM, Climate Change, Geophysical Fluid Dynamics I & II, General Circulation of Atmosphere, Data Analysis Methods, Advanced Weather Forecasting, Predictability, ENSO Dynamics

Univ. Maryland (6 credits)
Physical Oceanography
Analysis Methods in Atmospheric & Oceanic Sciences

ACADEMIC AWARDS AND HONORS

Univ Maryland Departmental Honors
Richard Jordan Scholarship — 2017
Univ. of Maryland Undergraduate Research of the Year — 2017
Outstanding Student Service in Department — 2016-2017
Philip Merrill Presidential Scholar — 2016-2017
Jeffrey and Lily Chen Scholarship Award — 2014-2017
University of Maryland University Honors Program — 2013-2017
NOAA Ernest F. Hollings Scholar — 2015-2016

RESEARCH EXPERIENCE

Graduate Research Assistant, Univ. Miami Rosenstiel School — Fall 2018-Present
Ph.D. Advisor: Dr. Benjamin Kirtman

- Prediction of summertime continental United States southerly low-level jets and associated precipitation 3-4 weeks in advance
  - Using Python for reading and visualizing data
  - Low-frequency variability analysis on:
    - NASA and NOAA reanalysis and observational datasets (MERRA-2, ERSST, NCEP/NCAR, etc.)
    - Community Climate System Model, v4 (CCSM4) output
  - Community Earth System Model (CESM1.2) setup, build, & run
  - Setup and run idealized forcing with an in-house dry nonlinear baroclinic model
  - Research presented at RSMAS Student Seminar

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
    - Primary channels/products: Himawari-8 Airmass RGB product; AIRS, IASI, and ATMS/CrIS total column ozone; Himawari-8 Water Vapor (6.2 μm, 6.9 μm, 7.3 μm); ASCAT winds; AMSR winds; NUCAPS profiles of moisture and temperature
    - MERRA-2 Global Reanalysis time-averaged and instantaneous 3-hourly data for cross-sectional analysis
- Give presentations or instructional kits to Alaskan Weather Forecast Offices and Ocean and Weather Prediction Centers
- Working with GEMPAK/AWIPS software, Python language for analyzing/visualizing data, Linux/Unix environment
- 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
    - Read papers about Community Earth System Model-Large Ensemble, which was run to produce delta moisture and temperature values to add to WRF
- Research presented at NOAA Hollings Research Symposium, oral presentation
- Research presented at 2017 AMS Annual Meeting, poster presentation
- Published in Mahoney et al. 2018, https://doi.org/10.1175/JCLI-D-18-0118.1.

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
    - Wrote Matlab scripts to read and organize dropsonde and reanalysis data
    - Wrote Matlab scripts to plot vertical profiles of moisture flux and surface analyses of atmospheric river development
- Simulated GPS radio occultation techniques (Doppler shift, bending angles, refractivity profiles)
- Research presented at SIO SURF Student Symposium, poster presentation
- Research presented at 2016 AMS Annual Meeting, poster presentation

RELEVENT EXTRACURRICULARS

Founder, *Seasoned Chaos* blog about subseasonal-to-seasonal forecasting Present

- https://seasonedchaos.github.io
- Develop scientific writing & communication skills for scientists and non-scientist audiences
- Collaborate with lab members and outside "guest" scientists for blog post material
- Create engaging figures with Microsoft Powerpoint and Adobe Illustrator
- Maintain blog website and social media presence

Lead Coordinator, Students for Students Outreach Present

- Organize presentations for K-12 and public audiences as person-of-contact
- Design or edit atmospheric science, programming, STEM talks
- Communicate with outside groups that request Rosenstiel School student outreach presentations

    - Many of these outside groups cannot afford field trips to Rosenstiel School so Students for Students members offer their time to visit school

Member, Rosenstiel School Marine Science Graduate Student Organization's Sustainability Initiative
Present

- Collaborate on ways to promote sustainability practices on Rosenstiel campus
- Raise awareness on individual and campus sustainability

Member, Rosenstiel School Marine Science Graduate Student Organization's Earth Week Committee
Present

- Organized webinar talks and activities for various lunchtime and evening events
- Promoted sustainability topics for both Univ. Miami and general public
- Took notes at meetings

Member, Rosenstiel School COMPASS Seminar Committee
Present

- Work together to create scoresheets, schedule speakers, choose seminar speaker winners, etc.
- Introduce speakers
- Log and organize speaker scores

Rosenstiel School Climate Group Present

- Present updates on research for peer feedback, practicing presentation skills
- Present on topics relevant for group
    - Presented on Forecast Skill Scores in Spring 2019
- Give feedback to peers about research figures, learn about their topic

Presenter/Collaborator, Rosenstiel School Lunch Bytes Seminar Spring 2019

- Present on relevant and/or desirable skills in regard to coding, data analysis, research organization, etc.
    - Presented on Python Data Analysis for Beginners and Matlab Converts

Univ. Miami Atmospheric Science Dept. Student Ambassador 2018-2019

- Representative of graduate students in departmental meetings
- Take official minutes and relay information to other graduate students

President, American Meteorological Society – UMD Undergraduate Chapter Fall 2016-Spring 2017

- Organize speakers, tours, and workshops relating to meteorology and oceanography in private and public sector
- Relay information about internships, jobs, graduate programs, etc. to undergraduates
- Help organize AMS Annual Meeting with AOSC department
- Representative of AOSC undergraduates for department

UMD Weather forecaster Fall 2016-Spring 2017

- Writes blogpost forecasts for website: weather.umd.edu/author/kmalloy

Secretary, American Meteorological Society – UMD Undergraduate Chapter Fall 2015-Spring 2016

- Take official minutes for AMS chapter meetings
- Help build and organize AMS website

Co-founder, TERP Climate, Co-Founder Fall 2015-Spring 2016

- Student organization that encourages multidisciplinary discussion about climate change issues
    - Social media (Facebook) effort to ask students across campus to talk about issues or ask questions: www.facebook.com/TERPClimate
    - Organized student forum with student moderators for discussion of prominent climate change issues
    - Organized campus wide forum with professional outside and university faculty for Earth Day 2016

SERVICE ACTIVITY (paid or unpaid)

Teaching Assistant for Data Analysis Methods (graduate course)	Spring 2020
SEGUE Student Reviewer (for UCAR Comet modules)	Fall 2019-Spring 2020
Teaching Assistant for Weather Forecasting	Spring 2019
Middle through high school tutor, Algebra & standardized tests	Fall 2017-Present
Teaching Assistant for Large-scale Atmospheric & Oceanic Dynamics	Spring 2017
Teaching Assistant for Atmospheric Thermodynamics	Fall 2016
College of Computer, Mathematical, & Natural Sciences Student Ambassador	Fall 2015-Spring 2017
Student athlete tutor for atmospheric science and geography courses	Fall 2015-Spring 2017
First-year Innovation and Research Experience (FIRE) peer mentor	Fall 2014

SKILLS

Tutoring and teaching experience from middle school to graduate level
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.), Adobe Illustrator
Participated in Summer 2018 NCAR Tutorial on Climate and Weather Extremes