

# Alyssa M. Stansfield

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## Education

- 2022 Ph.D. in Atmospheric Science, Stony Brook University  
2021 Science Training & Research to Inform Decisions Graduate Certificate  
2017 B.S. in Meteorology and Marine Science (*Summa Cum Laude*), Rutgers University

## Research Experience

- 2022-Present NSF AGS Postdoctoral Research Fellow, Colorado State University  
Mentor: Dr. Kristen Rasmussen, Department of Atmospheric Science  
  
2017-2022 Graduate Research Assistant, Stony Brook University  
Advisor: Dr. Kevin Reed, School of Marine and Atmospheric Sciences  
Committee Members: Drs. Hyemi Kim, Edmund Chang, Kenneth Kunkel, and Michael Wehner

## Peer-Reviewed Publications

\*Underlined names denote undergraduate students

13. Silvers, L. G., **A. M. Stansfield**, and K. A. Reed. The impact of rotation on tropical climate, the hydrologic cycle, and climate sensitivity. Submitted to *Geophysical Research Letters*.
12. Huprikar, A., **A. M. Stansfield**, and K. A. Reed. Hurricane Storylines for Quantifying the Impact of Climate Change on Future Rainfall. Under review at *Geophysical Research Letters*.
11. Jones, A. D., D. Rastogi, P. Vahmani, **A. M. Stansfield**, K. A. Reed, T. Thurber, P. A. Ullrich, & J. Rice: Continental United States Climate Projections based on Thermodynamic Modification of Historical Weather. In revision at *Scientific Data*.
10. Reed, K. A., **A. M. Stansfield**, W.-C. Hsu, G. J. Kooperman, A. A. Akinsanola, W. M. Hannah, A. G. Pendergrass, and B. Medeiros (2023): Evaluating the simulation of CONUS precipitation by storm type in next-generation configurations of E3SM. *Geophysical Research Letters*, 50, e2022GL102409, doi:[10.1029/2022GL102409](https://doi.org/10.1029/2022GL102409)
9. **Stansfield, A. M.** and K. A. Reed (2023): Global Tropical Cyclone Precipitation Scaling with Sea Surface Temperature. *npj Climate and Atmospheric Science*, 6(60), doi:[10.1038/s41612-023-00391-6](https://doi.org/10.1038/s41612-023-00391-6)
8. Reed, A. T., **A. M. Stansfield**, and K. A. Reed (2022): Characterizing Long Island's Extreme Precipitation and its Relationship to Tropical Cyclones. *Atmosphere*, 13(7), doi:[10.3390/atmos13071070](https://doi.org/10.3390/atmos13071070)
7. **Stansfield, A. M.** and K. A. Reed (2021): Tropical Cyclone Precipitation Response to Surface Warming in Aquaplanet Simulations with Uniform Thermal Forcing. *JGR: Atmospheres*, 126, e2021JD035197, doi:[10.1029/2021JD035197](https://doi.org/10.1029/2021JD035197)

6. Reed, K.A., M. F. Wehner, **A. M. Stansfield** and C. M. Zarzycki (2021): Anthropogenic Influence on Hurricane Dorian's Extreme Rainfall. [in "Explaining Extreme Events of 2019 from a Climate Perspective"]. *Bull. Amer. Meteor. Soc.*, 102(1), S9-S16, doi:[10.1175/BAMS-D-20-0160.1](https://doi.org/10.1175/BAMS-D-20-0160.1)
5. Ullrich, P.A., C.M. Zarzycki, E.E. McClenny, M.C. Pinheiro, **A.M. Stansfield** and K.A. Reed (2021): TempestExtremes v2.0: A Community Framework for Feature Detection, Tracking and Analysis in Large Datasets. *Geophys. Model Dev.*, **14**(8), 5023-5048. doi:[10.5194/gmd-14-5023-2021](https://doi.org/10.5194/gmd-14-5023-2021)
4. **Stansfield, A. M.**, K. A. Reed, and C. M. Zarzycki (2020): Changes in Precipitation from North Atlantic Tropical Cyclones under RCP Scenarios in the Variable-Resolution Community Atmosphere Model. *Geophysical Research Letters*, 47. doi: [10.1029/2019GL086930](https://doi.org/10.1029/2019GL086930)
3. **Stansfield, A. M.**, K. A. Reed, C. M. Zarzycki, P. A. Ullrich, and D. R. Chavas (2020): Assessing Tropical Cyclones' Contribution to Precipitation over the Eastern United States and Sensitivity to the Variable-Resolution Domain Extent. *Journal of Hydrometeorology*, 21, 1425-1445. doi: [10.1175/JHM-D-19-0240.1](https://doi.org/10.1175/JHM-D-19-0240.1)
2. Reed, K. A., **A. M. Stansfield**, M. F. Wehner, and C. M. Zarzycki (2020): Forecasted attribution of the human influence on Hurricane Florence. *Science Advances*, 6 (1). doi:[10.1126/sciadv.aaw9253](https://doi.org/10.1126/sciadv.aaw9253)
1. Lintner, B. R., D. K. Adams, K. A. Schiro, **A. M. Stansfield**, A. A. Amorim Rocha, and J. D. Neelin (2017): Relationships among climatological vertical moisture structure, column water vapor, and precipitation over the central Amazon in observations and CMIP5 models. *Geophys. Res. Lett.*, 44, 1981–1989. doi:[10.1002/2016GL071923](https://doi.org/10.1002/2016GL071923)

## Other Publications and Reports

U.S. Department of the Interior Bureau of Ocean Energy Management (2023). Effects of Greenhouse Gas Emissions and Climate Change on U.S. Coastal and Marine Environments: A High-level Harm Summary (Report No.: OCS Study BOEM 2023-009 and ANL-22/87. )

[https://espis.boem.gov/final%20reports/BOEM\\_2023-009.pdf](https://espis.boem.gov/final%20reports/BOEM_2023-009.pdf)

U.S. Department of Energy Office of Science. (2021). FY 2021 Second Quarter Performance Metric: Improve and Validate Earth System Model Simulations of Precipitation Related to Landfalling Hurricanes in the CONUS (Report No. DOE/SC-CM-21-002).

[https://climatemodeling.science.energy.gov/system/files/attachments/FY2021\\_2nd\\_Quarter\\_Metrics.pdf](https://climatemodeling.science.energy.gov/system/files/attachments/FY2021_2nd_Quarter_Metrics.pdf)

## Honors and Awards

2023-2024	CSU SoGES Sustainability Leadership Fellow
2022-2024	NSF AGS Postdoctoral Research Fellowship Award (\$190,000)
2022	AMS Tropical Meteorology Conference Outstanding Oral Presentation Award
2022	SBU Nuria Protopopescu Memorial Teaching Award (\$1,000)
2022	SBU Alumni Association's Dean's Choice Award for Leadership (\$1,000)
2022	Finalist in the SBU Three-Minute Thesis Competition

2021	AGU Precipitation Technical Committee Student Presentation Award (\$200)
2019-2021	SBU STRIDE Fellowship (\$68,000)
2020	Maze-Landau Graduate Student Fund for Excellence Travel Award (\$1,000)
2019	Jerry R. Schubel Graduate Fellowship Award (\$3,000)
2019	Workshop on Risk Analysis for Extremes in the Earth System Travel Grant
2019	Columbia University Correlated Extremes Workshop Travel Grant
2018	Wu Xiangding Memorial Award for Academic Achievement
2017-2022	SBU Graduate Council Fellowship (\$50,000)
2017	RU Matthew Leydt Society
2017	RU Meteorology Student of the Year
2014	RU Academic Achievement Award
2013-2017	RU Presidential Scholarship
2013-2017	RU School of Environmental and Biological Sciences Honors Program

## Invited Presentations

2023	Meteorology Seminar Series, Department of Earth, Ocean, & Atmospheric Science, Florida State University (virtual)
2023	Climate & Global Dynamics (CGD) Lab Weekly Seminar Series, NCAR
2022	Special Seminar Series, Cooperative Institute for Research in the Atmosphere (CIRA)
2022	AGU ECSPrecip Seminar Series (virtual)
2021	Ocean & Climate Physics Seminar Series, Lamont-Doherty Earth Observatory
2019	GRADTALKS Physics Grad Student Association Seminar Series, Stony Brook University

## Conference Presentations

2023	ICMCS-XV, "Tropical Cyclone Precipitation Structure Response to Sea Surface Temperature Warming in Idealized WRF", Fort Collins, Colorado (poster)
2022	AGU Fall Meeting, "Exploring the Relationship between Tropical Cyclone Precipitation and Sea Surface Temperature on Different Time Scales", Chicago, Illinois (talk)
2022	27th Annual CESM Workshop, "Understanding the Relationship between Tropical Cyclone Precipitation and SST Utilizing a CAM Hierarchical Framework" (virtual talk)
2022	EGU Annual Meeting, "Projecting Future Tropical Cyclone Precipitation Increases using a Hierarchical Modeling Framework", Vienna, Austria (talk)
2022	35th Conference on Hurricanes and Tropical Meteorology, "Projecting the Response of Tropical Cyclone Precipitation to Climate Change using a Hierarchical Modeling Framework", New Orleans, Louisiana (talk)
2021	AGU Fall Meeting, "Thermodynamic and Dynamic Contributions to Tropical Cyclone Precipitation Increases in Observations and Models", New Orleans, Louisiana (talk)
2021	26th Annual CESM Workshop, "What can simplified CAM simulations reveal about the response of tropical cyclone rainfall to climate change?" (virtual talk)
2021	34th Conference on Hurricanes and Tropical Meteorology, "Projected Changes in North Atlantic Tropical Cyclone Characteristics under Future RCP Scenarios using Climate Model Ensembles" (virtual talk)

- 2020 AGU Fall Meeting, “Investigating Changes in Tropical Cyclone Rainfall in Aquaplanet Simulations Under Idealized Warming” (virtual talk)
- 2020 25th Annual CESM Workshop, “Tropical Cyclones in Variable-Resolution CAM: Impacts of High-Resolution Grid Extent and Climate Change Forcing” (virtual talk)
- 2019 AGU Fall Meeting, “An Exploration of Extreme Precipitation from Tropical Cyclones over the Eastern United States in Variable-Resolution CAM”, San Francisco, California (poster)
- 2019 9<sup>th</sup> Northeast Tropical Workshop, “Tropical Cyclone Contribution to Extreme Precipitation over the Eastern United States”, Dedham, Massachusetts (poster)
- 2019 AMS Annual Meeting, “Diagnosing Potential Climate Change Impacts on Recent Major Hurricanes in Variable-Resolution CAM”, Phoenix, Arizona (talk)
- 2018 33<sup>rd</sup> Conference on Hurricanes and Tropical Meteorology, “Verifying hindcast simulations of recent major hurricanes in variable-resolution CAM”, Ponte Vedra, Florida (poster)
- 2017 16<sup>th</sup> Annual AMS Student Conference, “Comparison of Observed and Model-simulated Atmospheric Moisture Vertical Profiles in the Amazon Rainforest”, Seattle, Washington (poster)

## Teaching and Mentoring Experience

- 2022-Present Mentor, [Geosciences Education & Mentorship Support](#)
- 2022-Present Guest Lecturer, Colorado State University Department of Atmospheric Science  
Courses: Synoptic Meteorology (ATS 640), Tropical Meteorology (ATS 742)
- Spring 2022 Main Instructor, Stony Brook University  
Course: Prospects for Planet Earth (ENS 101)
- 2019-Present Research Mentor, Stony Brook University  
Students: Annika Huprikar, Justin Willson, Austin Reed, Justin Bettenhauser
- 2018-2020 Guest Lecturer, Stony Brook University  
Courses: Extreme Weather (ATM 103), Global Atmospheric Change (ATM 305)
- Fall 2021 Course Developer and Instructor, Stony Brook University  
Course: “How to Apply to Grad School” Unofficial Seminar Course
- 2017-2021 Graduate Student Mentor, SBU Women in Science and Engineering Program
- 2017-2018 Teaching Assistant, Stony Brook University  
Courses: Extreme Weather (ATM 103), Weather and Climate (ATM 102)

## Professional Service

Co-organizer and session chair:

2023 AGU Fall Meeting: Bridging the Gap Between Climate and Extreme Events, A Discussion with Program Managers for Early-Career Scientists Town Hall

2023 Natural Hazards Researchers Meeting

2022 AGU Fall Meeting: Advancing Understanding of the Hydrological Cycle and its Extremes Through Objective Tracking of Weather Phenomena, Successful Proposal Writing for Early-Career Scientists in Atmospheric Sciences Town Hall

2021 AGU Fall Meeting: Atmospheric Sciences OSPA Highlights I eLightning

Journal Reviewer: *Geophysical Research Letters*, *Nature Communications*, *Journal of Geophysical Research: Atmospheres*, *Quarterly Journal of the Royal Meteorological Society*, *Journal of Hydrometeorology*, *Journal of Applied Meteorology and Climatology*, *Journal of Advances in Modeling Earth Systems*, *Journal of Climate*

- 2021-Present AGU Atmospheric Science Section Early Career Committee  
2021-Present: Chair of Professional Development Subcommittee  
Starting Jan. 2024: Full Committee Chair
- 2023 Panelist, Professional Development Event on Networking  
Department of Atmospheric Science, Colorado State University
- 2021-2022 Graduate Student Representative, Strategic Planning Committee  
School of Marine and Atmospheric Sciences, Stony Brook University
- 2018-2022 Board Member, Graduate Student Club  
School of Marine and Atmospheric Sciences, Stony Brook University

## Science Communication Outreach

- 2020-2021 Contributing Writer, AGU [GeoBites](#)
- 2020 Guest Scientist, [BioBus Live Student Town Hall on Climate Science](#) (virtual)
- 2020 Meet with an Oceanographer Program at the Long Island Aquarium, Riverhead, NY

## Workshops and Training

- 2021 ADVANCEGeo Implicit Bias and Active Bystander Training Workshop
- 2021 Women in Science and Engineering Leadership Workshop Series, SBU
- 2020 GRD 510 - Career Planning for Graduate Students
- 2019 JRN 501 - Communicating Science: Distilling Your Message
- 2019 JRN 503 - Communicating Science: Improvisation for Scientists
- 2019 Workshop on Risk Analysis for Extremes in the Earth System, LBNL
- 2016 Research Intern, Geophysical Fluid Dynamics Laboratory
- 2016 Undergraduate Leadership Workshop, National Center for Atmospheric Research

## Professional Affiliations

- 2022-Present European Geophysical Union
- 2018-Present American Geophysical Union
- 2015-Present American Meteorological Society
- 2015 Open Water Scuba Certification, Prof. Assoc. of Diving Instructors