

ALEXANDER K. MITCHELL

Department of Atmospheric and Environmental Sciences
University at Albany, SUNY, ETEC-412, akmitchell@albany.edu
1220 Washington Avenue, Albany, NY, 12210 | Phone: (252) 642-5377
Website: www.alex-mitchell.com

Curriculum Vitae

EDUCATION

- Ph.D. candidate (expected Spring 2025), Atmospheric Sciences** January 2023 – present
University at Albany, SUNY, Albany, NY
- M.S., Atmospheric Sciences** December 2022
University at Albany, SUNY, Albany, NY
- B.S., Meteorology – *Magna Cum Laude*** May 2018
North Carolina State University, Raleigh, NC

RESEARCH AND EXPERIENCE

- Graduate Research Assistant** June 2021 – Present
University at Albany, SUNY; Albany, NY
- Utilizing reanalysis datasets for investigating extreme precipitation in Central America and intraseasonal tropical cyclone behavior in the eastern North Pacific
 - Documenting and preparing materials for submission to the National Science Foundation
 - Presenting research at regional/national/international conferences
- Teaching Assistant** Aug 2018 – May 2021
University at Albany, SUNY; Albany, NY
- Assisting in teaching outside of instructional hours
 - Developing and grading course examinations and assignments respectively
- Student Intern** Feb 2018 – May 2018
National Weather Service; Raleigh, NC
- Instructed on the baseline understanding of the duties at the National Weather Service as an operational meteorologist
 - Organized and prepared written area forecast discussions using the Advanced Weather Interactive Processing System (AWIPS)
- Undergraduate Research Assistant** May 2017 – May 2018
State Climate Office of North Carolina; Raleigh, NC
- Collected and examined solar radiation data from surface observations
 - Prepared and extracted internal data requests for various clients
 - Identified effective methods to evaluating solar radiation models for the updated National Fire Danger Rating System

INVITED PRESENTATIONS

Mitchell, A. K. and L. F. Bosart, 2020: Large-Scale Flow Patterns Conducive to Central American Extreme Precipitation Events during Autumn. *101st American Geophysical Union Meeting*, Virtual.

SEMINARS

Mitchell, A. K. and L. F. Bosart, 2023: The Influence of North Pacific Large-Scale Variability on Recurring EPAC Tropical Cyclones. Seminar at the Mesoscale & Microscale Meteorology (MMM) Laboratory - NCAR, Boulder, CO.

Mitchell, A. K. and L. F. Bosart, 2022: The Governing Dynamics and Predictability of Recurring EPAC Tropical Cyclones. Seminar at the Mesoscale & Microscale Meteorology (MMM) Laboratory - NCAR, Boulder, CO.

Mitchell, A. K. and L. F. Bosart, 2022: Large-scale and Topographic Influences on the evolution of eastern North Pacific Tropical Cyclones during the Autumn. *TAFB Tropical Workshop*. Seminar at the National Hurricane Center, Miami, FL.

Mitchell, A. K. and L. F. Bosart, 2022: The Governing Dynamics and Predictability of Recurring EPAC Tropical Cyclones. Seminar at the NOAA/AOML Hurricane Research Division (HRD)/Atlantic Oceanographic & Meteorological Laboratories (AOML), Miami, FL.

FIRST-AUTHORED ORAL PRESENTATIONS

Mitchell, A. K., K. L. Corbosiero and L. F. Bosart, 2023: Intraseasonal Variability of Recurring EPAC Tropical Cyclones. *10th Northeast Tropical Meteorology Workshop*, Albany, NY.

Mitchell, A. K. and **T. C. Leicht**, 2023: Representative Experiences of Current Synoptic Meteorology Education. *103rd American Meteorological Society Meeting*, Denver, CO.

Mitchell, A. K. and L. F. Bosart, 2022: The Governing Dynamics and Variability of Recurring EPAC Tropical Cyclones. *103rd American Geophysical Union Meeting*, Chicago, IL.

Mitchell, A. K., N. Mastrantonas, D. Nash, W. Scheftic, J. R. Joshi, M. J. DeFlorio, A. C. Subramanian, and J. Berner, 2022: Subseasonal Predictions during the 2017 Oroville Dam Crisis: Role of Atmospheric Rivers and Antecedent Synoptic Conditions. *102nd American Meteorological Society Meeting*, Virtual. (*oral presenter of collaborated work). <https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/398922>

Mitchell, A. K. and L. F. Bosart, 2021: Synoptic and topographic influences on the formation of Tropical Storm Hermine (2010). *34th Conference on Hurricanes and Tropical Meteorology*, Virtual.

Mitchell, A. K. and L. F. Bosart, 2021: Large-Scale Flow Patterns Conducive to Central American Extreme Precipitation Events during Autumn. *101st American Meteorological Society Meeting*, Virtual.

Mitchell, A. K. and L. F. Bosart, 2020: Synoptic and topographic influences on the formation of Tropical Storm Hermine (2010). *45th Annual Northeastern Storm Conference*, Saratoga Springs, NY.

Mitchell, A. K. and L. F. Bosart, 2020: The Relationship between Autumn Cold Surge Activity and Tropical Cyclones in the Eastern North Pacific. *100th American Meteorological Society Meeting*, Boston, MA.

Mitchell, A. K. and L. F. Bosart, 2019: The Relationship between Autumn Cold Surge Activity and Tropical Cyclones in the Eastern North Pacific. *19th Annual Cyclone Workshop*, Seon, Germany.

Mitchell, A. K. and L. F. Bosart, 2019: The Dynamical Influences of Large-Scale Flow on the Formation of Tropical Storm Selma in October 2017. *9th Northeast Tropical Meteorology Workshop*, Dedham, MA.

Mitchell, A. K. and L. F. Bosart, 2019: The Influence of Central American Gap Winds on the Formation of Tropical Storm Selma in October 2017. *44th Annual Northeastern Storm Conference*, Saratoga Springs, NY.

FIRST-AUTHORED POSTER PRESENTATIONS

Mitchell, A. K., K. L. Corbosiero, and L. F. Bosart, 2024: The Influence of North Pacific Variability on Recurring EPAC Tropical Cyclones. *104th American Meteorological Society Meeting*, Baltimore, MD.

Mitchell, A. K., K. L. Corbosiero, and L. F. Bosart, 2023: The Influence of North Pacific Variability on Recurring EPAC Tropical Cyclones. *104th American Geophysical Union Meeting*, San Francisco, CA.

Mitchell, A. K., K. L. Corbosiero, and L. F. Bosart, 2023: Intraseasonal Variability of Recurring EPAC Tropical Cyclones. *32nd Conference on Weather Analysis and Forecasting (WAF)/28th Conference on Numerical Weather Prediction (NWP)/20th Conference on Mesoscale Processes*, Madison, WI.

Mitchell, A. K. and L. F. Bosart, 2023: The Governing Dynamics and Variability of Recurring EPAC Tropical Cyclones. *103rd American Meteorological Society Meeting*, Denver, CO.

Mitchell, A. K. and L. F. Bosart, 2022: Identifying Sources of Large-Scale Variability Linked to Forecasted Track Error of Tropical Cyclone Marie (2020). *Tropical Cyclones, Convection and Climate: A Symposium in Honor of Kerry Emanuel*, Boston, MA. https://web.mit.edu/~twcronin/www/emanuel_symposium/poster_abstracts.pdf

Mitchell, A. K. and L. F. Bosart, 2022: Identifying Sources of Large-Scale Variability Linked to Forecasted Track Errors of Tropical Cyclone Sergio (2018). *102nd American Meteorological Society Meeting*, Virtual.

Mitchell, A. K. and L. F. Bosart, 2021: Identifying Sources of Large-Scale Variability Linked to Forecasted Track Errors of Tropical Cyclone Sergio (2018). *102nd American Geophysical Union Meeting*, New Orleans, LA.

Mitchell, A. K. and L. F. Bosart, 2020: A Case Study of Heavy Rainfall Associated with Weak Subtropical Disturbances in the Gulf of Mexico. *101st American Geophysical Union Meeting*, Virtual.

Mitchell, A. K., T. C. Leicht, L. F. Bosart, 2019: The Downstream Impacts of West Coast Ridge Regimes over Northern and Central America. *100th American Geophysical Union Meeting*, San Francisco, CA.

CO-AUTHORED ORAL AND POSTER PRESENTATIONS

Piper, M. K. and **A. K. Mitchell**, 2023: A Climatology of Tropical Cyclone Interactions with Deformation *Steering Flows in the Atlantic*. *103rd American Meteorological Society Meeting*, Denver, CO.

Bosart L. F., T. C. Leicht, **A. K. Mitchell**, 2022: The Relative Contributions of Subsidence and Horizontal Advection to the Western European Heat Waves of June and July 2022. *103rd American Geophysical Union Meeting*, Chicago, IL.

N. Mastrantonas, D. Nash, W. Scheftic, **A. K. Mitchell**, J. R. Joshi, M. J. DeFlorio, A. C. Subramanian, and J. Berner, 2022: Subseasonal Predictions during the 2017 Oroville Dam Crisis: Role of Atmospheric Rivers and Antecedent Synoptic Conditions. *102nd American Meteorological Society Meeting*, Virtual. (*oral presenter of collaborated work)

Bosart L. F., T. C. Leicht, **A. K. Mitchell**, M. Zhou, 2021: The Contributions of Recurring EPAC and WPAC Tropical Cyclones to an Extreme Weather Event over the Western CONUS in September 2020. NCAR ASP S2S Colloquium, Virtual.

Bosart L. F., T. C. Leicht, **A. K. Mitchell**, 2021: Synoptic-Dynamic Meteorology Concepts Relevant to S2S Time Scales. NCAR ASP S2S Colloquium, Virtual.

Bosart L. F., T. C. Leicht, **A. K. Mitchell**, 2020: The Intense High Plains “Bomb” Cyclone of 12–14 March 2019. *100th American Meteorological Society*, Boston, MA.

Leicht T. C., **A. K. Mitchell**, L. F. Bosart, 2019: The Structure and Evolution of Persistent Ridge Regimes across Western North America during the Transition Seasons. *100th American Geophysical Union Meeting*, San Francisco, CA.

AWARDS AND HONORABLE MENTIONS

2023	AMS WAF Travel grant
2022	SMART Scholarship Recipient
2021	Selected participant for NCAR Advanced Study Program Summer Colloquium “The Science of S2S Predictions”
2020	Outstanding Student Presentation Award 100 th American Geophysical Union Meeting
2019	Cyclone Workshop Travel grant
2018	Morrow, J. 2018. <i>NC State Students Complete Spring NWS Course</i> . Available online at https://www.weather.gov/media/rah/NWSRaleighNews/StudentVolunteers_Spring2018.pdf
2016	Rivers, G. 2016. Mitchell Uses Involvement to Explore Passions, Overcome Fears. Available online at https://studentinvolvement.dasa.ncsu.edu/mitchell-uses-involvement-to-explore-passions-overcome-fears/

TECHNICAL SKILLS

Computer Languages:	Python, MATLAB, NCL, RStudio, HTML, SQL, PHP
Applied skills:	Machine Learning (i.e., Self-organizing Maps), WRF
Datasets:	ECMWF fifth-generation reanalysis (ERA5), NECP NCAR Reanalysis, NECP-CFS (CFSR) Reanalysis, NCEP Global Ensemble Forecasting System (GEFS), PERSSIAN-CDR

PROFESSIONAL DEVELOPMENT AND SERVICE

Feb 2024 – Jan 2026	Student Member of the AMS STAC Committee on Weather Analysis and Forecasting
December 2023	Joint Peer Reviewer for EGU sphere
October 2023	Peer Reviewer for Proceedings of the National Academy of Sciences (PNAS)
September 2023	Volunteer for AOML/HRD map discussion
Fall 2023	Seminar in College Teaching. Explores teaching methods, emphasizing the skills and knowledge needed to design and deliver courses that enhance student learning
August 2023 – Present	Co-organizer of weekly Climate Group Seminars
January 2023 – Present	Monthly volunteer at the Latham Food Pantry
August 2022, April 2023	Co-hosted and delivered first-year graduate seminars on graduate fellowships and website development
July 2022 – Jan 2023	Session Chair of 32nd Conference on Education: Reinvigorating and Modernizing Synoptic-Dynamic Meteorology Education, Teaching, Science, and Research
Dec 2021 – June 2022	Collaboratively contributed to a successful NSF proposal securing funding for my Ph.D. research
January 2022	Joint Peer Reviewer for an NSF Proposal
April 2020 – May 2021	President of the UAlbany Atmospheric Science Graduate Student Organization
Jan 2019 – May 2021	Presenter at Weekly <i>Friday Map Discussion</i> led by Lance F. Bosart
2018 – 2020, 2021 – 2022	Atmospheric Science Graduate Student Organization Representative for the UAlbany Graduate Student Association

May 2019	Volunteer at the NOAA HWT Spring Forecasting Experiment at the SPC
August 2019	Volunteer for the Student Rapporteur Program at the AMS Summer Community Meeting
2019, 2020	Member of Planning Committee for University at Albany “Earth Day” event
Jan 2019 – Jan 2020	Student Member of the AMS Board for Operational Government Meteorologists
2018	Student Volunteer at the Annual American Meteorological Society Conference
2017 – 2018	President of the American Meteorological Society Student Chapter at NC State

ARTICLES

Mitchell, A. K., B. J. Stutsrim, L. C. Gaudet, and E. Wilson, 2019: Panel Discussion 4: History and Future of Weather, Water, and Climate Enterprise Valuation. *Conference Report: 2019 AMS Summer Community Meeting*, A. Raghavendra and L.C. Gaudet, Eds., Amer. Meteor. Soc., 31–32. [Available online at https://2521b23f-9174-470d-a176-c76dc2df3b61.filesusr.com/ugd/3e8f6b_8b31d4315fef453ab6f730c346b72cae.pdf]

Capute, P., D. R. Card, **A. K. Mitchell**, and M. Farrar, 2019: Banquet Keynote: A Highly Capable and Responsive Observation Architecture: Can We Really Have It All? *Conference Report: 2019 AMS Summer Community Meeting*, A. Raghavendra and L.C. Gaudet, Eds., Amer. Meteor. Soc., 22–24. [Available online at https://2521b23f-9174-470d-a176-c76dc2df3b61.filesusr.com/ugd/3e8f6b_8b31d4315fef453ab6f730c346b72cae.pdf]

Gaudet, L. C., P. Capute, **A. K. Mitchell**, and B. Gail, 2019: Session 5: Weather Enterprise Keynote. *Conference Report: 2019 AMS Summer Community Meeting*. *Conference Report: 2019 AMS Summer Community Meeting*, A. Raghavendra and L.C. Gaudet, Eds., Amer. Meteor. Soc., 25–28. [Available online at https://2521b23f-9174-470d-a176-c76dc2df3b61.filesusr.com/ugd/3e8f6b_8b31d4315fef453ab6f730c346b72cae.pdf]