

Erik R. Nielsen

Department of Atmospheric Sciences
Texas A&M University
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College Station, TX 77843
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EDUCATION

- Ph.D., Atmospheric Science, Colorado State University, Fort Collins, CO, May 2019
Dissertation: *Insights into Extreme Short-Term Precipitation Associated with Supercells and Mesovortices*
Advisor: Russ S. Schumacher
- M.S., Atmospheric Science, Colorado State University, Fort Collins, CO, May 2016
Thesis: *Using Convection-Allowing Ensembles to Understand the Predictability of Extreme Rainfall*
Advisor: Russ S. Schumacher
- B.S., *summa cum laude*, Texas A&M University, College Station, TX, May 2013
Major: Meteorology
Minors: Mathematics, Oceanography

RESEARCH/WORK EXPERIENCE

August 2020-present

Instructional Assistant Professor

Department of Atmospheric Sciences, Texas A&M University, College Station, TX

June 2019-August 2020

Postdoctoral Researcher

Department of Atmospheric Science, Colorado State University, Fort Collins, CO

Advisor: Russ S. Schumacher

August 2013-May 2019

Graduate Research Assistant

Department of Atmospheric Science, Colorado State University, Fort Collins, CO

Advisor: Russ S. Schumacher

May 2012 – July 2012

Internship

National Hurricane Center, Storm Surge Unit, Miami, FL,

Supervisor: Jamie R. Rhome

January 2011- May 2013

Undergraduate Research Assistant

Department of Atmospheric Sciences, Texas A&M University, College Station, TX

Advisor: Don Collins

November 2010 – May 2013

Undergraduate Research Assistant

Department of Oceanography, Texas A&M University, College Station, TX

Advisor: Jack Baldauf

FELLOWSHIPS

- 2014-2018 National Science Foundation (NSF) Graduate Research Fellowship Program (GRFP) Fellowship Award Recipient in Physical and Dynamic Meteorology
- 2013-2014 American Meteorological Society Graduate Fellowship Recipient

HONORS AND AWARDS

2022	Texas A&M University, Department of Atmospheric Sciences, Outstanding Faculty Teaching Award
2020	“Paper of Note,” Bulletin of the American Meteorological Society
2016	Federal Alliance for Safe Homes (FLASH) John Jefferies Scholarship in Meteorology Recipient
2013	Texas A&M University, College of Geoscience Distinguished Graduate in Meteorology
2013	Texas A&M University, Department of Atmospheric Sciences, Ed Felder Memorial Award Recipient
2013	Texas A&M University, Association of Former Students, Thomas S. Gathright Academic-Excellence Award Recipient
2012	Texas A&M, Department of Atmospheric Sciences Outstanding Undergraduate
2012-2013	American Meteorological Society Senior Named Scholarship Recipient
2011-2012	National Oceanic and Atmospheric Administration (NOAA) Ernest F. Hollings Undergraduate Scholarship Program Recipient
2009-2010	American Meteorological Society Underclassman Scholarship

REFEREED PUBLICATIONS

SUBMITTED

16. Gupta, S. and Co-Authors (Including **E. R. Nielsen**), 2024: A Unique Interagency Weather Forecasting Collaboration to support the TRACER+ Experiments near Houston, Texas. *Bulletin of the American Meteorological Society*.
15. O’Reilly, H., J. Spinney, M. Bica, J. Henderson, and **E. R. Nielsen**, 2024: “This isn’t a hurricane, this is a flood event”: A Qualitative Analysis of National Weather Service Forecaster Messaging During Hurricane Florence. *Weather and Forecasting*.

Published

14. Rapp, A.D., S. D. Brooks, C. J. Nowotarski, M. Sharma, S. A. Thompson, B. Chen, B. H. Matthews, M. Etten-Bohm, **E. R. Nielsen**, and R. Li, 2024: TAMU TRACER: Targeted Mobile Measurements to Isolate the Impacts of Aerosols and Meteorology on Deep Convection. *Bulletin of the American Meteorological Society*. **105** (9), E1685-E1702, doi: [10.1175/BAMS-D-23-0218.1](https://doi.org/10.1175/BAMS-D-23-0218.1)
13. Mulholland, J. P., C. J. Nowotarski, J. M. Peters, H. Morrison, and **E. R. Nielsen**, 2024: How does vertical wind shear influence hydrometeor characteristics in supercell thunderstorms? *Monthly Weather Review*. **152** (7), 1663-1687, doi: [10.1175/MWR-D-23-0166.1](https://doi.org/10.1175/MWR-D-23-0166.1)
12. Bica, M., L. Palen, J. Henderson, J. Spinney, J. Weinberg, and **E. R. Nielsen**, 2023: “Can’t think of anything more to do”: Public displays of power, privilege, and surrender in social media disaster monologues *Human-Computer Interaction*. **38** (5-6), 300-321. doi:[10.1080/07370024.2021.1982390](https://doi.org/10.1080/07370024.2021.1982390)
11. van den Heever, S.C., L.D. Grant, S.W. Freeman, P.J. Marinescuc, J. Barnum, J. Bukowski, E. Casas, E. R. Dellaripa, A. Drager, B. Fuchs, G. R. Herman, S. M. Hitchcock P. Kennedy, **E. R.**

- Nielsen, J.** Park, K. L. Rasmussen, R. Riesenber, N. Reisin, C. Slocum, B. Toms, and A. van den Heever, 2021: Diving into Cold Pools and Flying into Updrafts using Drones and Other Technology. *Bulletin of the American Meteorological Society*. E1283–E1305. doi: [10.1175/BAMS-D-19-0013.1](https://doi.org/10.1175/BAMS-D-19-0013.1)
10. Henderson, J., **E.R. Nielsen**, G.R. Herman, and R.S. Schumacher, 2020: A hazard multiple: Overlapping tornado and flash flood warnings in a National Weather Service forecast office in the southeastern U.S. *Weather and Forecasting*, **35** (4), 1459–1481, doi: [10.1175/WAF-D-19-0216.1](https://doi.org/10.1175/WAF-D-19-0216.1)
 9. **Nielsen, E.R.** and R.S. Schumacher, 2020: Observations of extreme short-term precipitation associated with supercells and mesovortices. *Monthly Weather Review*, **148** (1), 159–182, doi: [10.1175/MWR-D-19-0146.1](https://doi.org/10.1175/MWR-D-19-0146.1)
 8. **Nielsen, E.R.** and R.S. Schumacher, 2020: Dynamical Mechanisms Supporting Extreme Rainfall Accumulations in the Houston “Tax Day” 2016 Flood. *Monthly Weather Review*. **148** (1), 83–109, doi: [10.1175/MWR-D-19-0206.1](https://doi.org/10.1175/MWR-D-19-0206.1)
 - Selected as “Paper of Note” by *Bulletin of the American Meteorological Society*
 7. **Nielsen, E.R.** and R.S. Schumacher, 2018: Dynamical insights into extreme short-term precipitation associated with supercells and mesovortices. *Journal of the Atmospheric Sciences*, **75** (9), 2983–3009, doi: [10.1175/JAS-D-17-0385.1](https://doi.org/10.1175/JAS-D-17-0385.1)
 6. Herman, G.R., **E.R. Nielsen**, and R.S. Schumacher, 2018: Probabilistic verification of the Storm Prediction Center Forecasts. *Weather and Forecasting*, **33** (1), 161–184, doi: [10.1175/WAF-D-17-0104.1](https://doi.org/10.1175/WAF-D-17-0104.1)
 5. Peters, J.M., **E.R. Nielsen**, M.D. Parker, S.M. Hitchcock, and R.S. Schumacher, 2017: The impact of low-level moisture errors on model forecasts of an MCS observed during PECAN. *Monthly Weather Review*, **145** (9), 3599–3624, doi: [10.1175/MWR-D-16-0296.1](https://doi.org/10.1175/MWR-D-16-0296.1)
 4. **Nielsen, E.R.**, G.R. Herman, R.C. Tournay, J.M. Peters, and R.S. Schumacher, 2016: Reply to “Comments on ‘Double impact: When both tornadoes and flash floods threaten the same place at the same time’”. *Weather and Forecasting*, **31** (5), 1723–1727, doi: [10.1175/WAF-D-16-0151.1](https://doi.org/10.1175/WAF-D-16-0151.1)
 3. **Nielsen, E.R.** and R.S. Schumacher, 2016: Using convection-allowing ensembles to understand the predictability of an extreme rainfall event. *Monthly Weather Review*, **144** (10), 3651–3676, doi: [10.1175/MWR-D-16-0083.1](https://doi.org/10.1175/MWR-D-16-0083.1)
 2. **Nielsen, E.R.**, R.S. Schumacher, and A.M. Kecklik, 2016: The effect of the Balcones Escarpment on three cases of extreme precipitation in central Texas. *Monthly Weather Review*, **144** (1), 119–138, doi: [10.1175/MWR-D-15-0156.1](https://doi.org/10.1175/MWR-D-15-0156.1)
 1. **Nielsen, E.R.**, G.R. Herman, R.C. Tournay, J.M. Peters, and R.S. Schumacher, 2015: Double impact: When both tornadoes and flash floods threaten the same place at the same time. *Weather and Forecasting*, **30** (6), 1673–1693, doi: [10.1175/WAF-D-15-0084.1](https://doi.org/10.1175/WAF-D-15-0084.1)

SELECTED OTHER PUBLICATIONS

10. Porter, M., R. Hernandez, B. Checkoway, E. R. Nielsen, C. Williamsberg, G. Eosco, K. Christian, A. Morris, E. Grow Cei, K. Patelski, and J. Henderson, 2024; Expanding the Concept of Knowledge Transition through Social Science Research. *Bulletin of the American Meteorological Society*. <https://doi.org/10.1175/BAMS-D-23-0310.1>
9. Henderson, J. Bica, M. Palen, L. Spinney, J. **Nielsen, E.** Weinberg, J. Obermeier, H. Anderson, K. Anderson, J. (2021) "Hurricane Florence Twitter Data", in *Compound Wind and Water Hazards Embedded in Landfalling Hurricanes and Continental Convection*. DesignSafe-CI. <https://doi.org/10.17603/ds2-qy0d-wv59>.
8. Henderson, J. Spinney, J. **Nielsen, E.** Bica, M. (2021) "Semi-Structured Interview Protocol", in *Compound Wind and Water Hazards Embedded in Landfalling Hurricanes and Continental Convection*. DesignSafe-CI. <https://doi.org/10.17603/ds2-vzpa-a735>.
7. Henderson, J. **Nielsen, E.** Gartner, H. (2021) "Semi-Structured Interviews with National Weather Service Forecasters Impacted by Hurricane Harvey", in *Compound Wind and Water Hazards Embedded in Landfalling Hurricanes and Continental Convection*. DesignSafe-CI. <https://doi.org/10.17603/ds2-1fb5-kn59>.
6. Henderson, J. **Nielsen, E.** Spinney, J. Obermeier, H. Mazurek, A. Palen, L. Anderson, K. Saez, G. (2021) "Hurricane Harvey Twitter Data", in *Compound Wind and Water Hazards Embedded in Landfalling Hurricanes and Continental Convection*. DesignSafe-CI. <https://doi.org/10.17603/ds2-3rc2-qy38>.
5. **Nielsen, E.** Schumacher, R. (2021) "Overlapping Tornado and Flash Flood Warnings for the US", in *Compound Wind and Water Hazards Embedded in Landfalling Hurricanes and Continental Convection*. DesignSafe-CI. <https://doi.org/10.17603/ds2-1vwk-rp47>.
4. **Nielsen, E.R.**, and R.S. Schumacher, 2020: Storm rotation leads to extreme rainfall, too. Papers of Note, *Bulletin of the American Meteorological Society*, 101, 14. https://doi.org/10.1175/BAMS_1011_11-28_Nowcast
3. **Nielsen, E.R.**, S.M. Hitchcock, A.J. Drager, J.J. Alland, and K.C. Carter, 2017: Finding the Right Match: Tips on the Job Search and Application Process, *Bulletin of the American Meteorological Society*, 98 (11), 2238—2240
2. Schumacher, R., and **E. Nielsen**, 2017: CSU Mobile Radiosonde Data. Version 2.0. doi:[10.5065/d62j69kp](https://doi.org/10.5065/d62j69kp), Accessed 10 Aug 2018.
1. **Nielsen, E.R.**, 2016: When Tornadoes and Flash Floods Occur at the Same Place at the Same Time, *Physics Today: Down to Earth*, doi: [10.1063/PT.5.4020](https://doi.org/10.1063/PT.5.4020)

FIELD PROJECT EXPERIENCE

Mobile Radiosonde Launch Team Lead and Lead Forecaster, **Tracking Aerosol Convection Interactions Experiment (TRACER)**, June-September 2022, Radiosondes Launched: ~25

Mobile Radiosonde Launch Team Lead and Forecaster, **Remote Sensing of Electrification, Lighting, and Mesoscale/Microscale Processes with Adaptive Ground Observations (RELAMPAGO)**, October-December 2018, Radiosondes Launched: ~40

Lead Nowcaster and Participant **Western Wildfire Experiment for Cloud Chemistry, Aerosol Absorption and Nitrogen (WE-CAN)**, July-August 2018

Mobile Radiosonde Launch Team Lead, **V**erification of the **O**rigins of **R**otation in **T**ornadoes **E**xperiment—Southeast U.S. (**VORTEX-SE**), March-April 2017, Radiosondes Launched: ~40

Mobile Radiosonde Team Lead, Forecaster, Colorado State University (**CSU**) **C**onvective **C**loud **O**utflows and **U**p**D**rafts **E**xperiment (**C³LOUD-Ex**), June 2016-August 2017, Radiosondes Launched: ~70

Mobile Radiosonde Launch Team Lead/Organizer, NOAA Unique **C**riS/**A**TMS **P**rocessing System (**NUCAPS**) ground validation experiment, May-June 2016, Radiosondes Launched: ~20

NASA S-Band Dual-Polarimetric Radar (NPOL) Radiosonde Launch Team Member, **O**lympic **M**ountains **E**xperiment (**OLYMPEX**) Field Experiment, December 2015, Radiosondes Launched: ~30

Mobile Radiosonde Launch Team Member, **P**lains **E**levated **C**onvection **A**t **N**ight (**PECAN**) Field Experiment, June-July 2015, Radiosondes Launched: ~90

Assistant Lead Nowcaster, **F**ront **R**ange **A**ir **P**ollution and **P**hotochemistry **E**xperiment (**FRAPPE**) Field Experiment, July-August 2014.

Texas A&M Student Operated Upper-Air Program (**SOUP**), Launched radiosondes on demand for NWS/SPC/various scientists and experiments, August 2009-May 2013, Radiosondes Launched: ~50

MEETINGS AND WORKSHOPS

Session Chair, 32nd Conference on Weather Analysis and Forecasting/28th Conference on Numerical Weather Prediction/20th Conference on Mesoscale Processes, Madison, WI, July 2023

Session Chair, 3rd Symposium on Mesoscale Processes, American Meteorological Society (AMS) Annual Conference, January 2023

Participant, University Corporation for Atmospheric Research (UCAR) Members Meeting, Boulder, Colorado, October 2022

Session Chair, American Meteorological Society (AMS) 19th Conference on Mesoscale Processes: “Mesoscale Processes near Orography,” January 2022

Participant, **F**lash **F**lood and **I**ntense **R**ainfall Experiment (FFaIR): Weather Prediction Center, Maryland, June 2019 and June 2020.

Session Chair, American Meteorological Society (AMS) 29th Conference on Weather Analysis and Forecasting: “Mesoscale Meteorology and Severe Local Storms II: Observational Analysis from VORTEX-SE and other Events”, June 2018

Participant, American Meteorological Society (AMS) Summer Public Colloquium, June 2016, Washington D.C.

Session Chair, American Meteorological Society (AMS) 15th Annual Student Conference: “Embracing the Interface of Science and Society,” January 2016

Session Chair, Young Scientist Symposium on Atmospheric Research (YSSAR), “Mesoscale Meteorology and Extreme Weather”, Fort Collins, CO, October 2015

Session Chair, American Meteorological Society (AMS) 14th Annual Student Conference: “Getting the Word Out: Science Policy and Communication,” January 2015

Participant, **S**tudies of **P**recipitation, flooding, and **R**ainfall **E**xtrêmes **A**cross **D**isciplines workshop (SPREAD): Fort Collins, CO, June 2013, and Boulder, CO July 2014.

GRANTS AND CONTRACTS

External Current

2024: *Wet Bulb Globe Temperature Intercomparison*. Perry Weather, Inc. PI: **Erik R. Nielsen**, Co-PI: William Baule

2023-2025: *Hurricane Naming Conventions and Bilingual Audiences: Characterizing Spanish-Speaking Broadcast Meteorologists' Challenges Communicating Multiple Hazards in Landfalling Tropical Cyclones.* National Oceanic and Atmospheric Administration Weather Program Office. PI: Jen Henderson, **Erik R. Nielsen**; Co-PI: Rodolfo Hernandez

2022-2025: *Collaborative Research: Understanding Downdrafts in Deep Convection.* National Science Foundation. PI: Christopher Nowotarski, John Peters, Gregory Elsaesser; Co-PI: **Erik R. Nielsen**

External Completed

2015-2016: *Collaborative Research: Multi-disciplinary investigation of concurrent tornadoes and flash floods in the Southeastern U.S.* Part of the Verification of the Origins of Rotation in Tornadoes Experiment—Southeast U.S. (VORTEX-SE). National Oceanic and Atmospheric Administration Weather Program Office. PI: Russ Schumacher. Co-Investigators: Jen Henderson, **Erik R. Nielsen**, Greg Herman, John Peters, and Robert Tournay

2016-2018: *Improving understanding and prediction of concurrent tornadoes and flash floods with numerical models and VORTEX-SE observations.* National Oceanic and Atmospheric Administration Weather Program Office. PI: Russ Schumacher. Co-Investigators: **Erik R. Nielsen** and Greg Herman.

2018-2021: *Multi-disciplinary investigation of concurrent tornado and flash flood threats in landfalling tropical cyclones.* National Oceanic and Atmospheric Administration Weather Program Office. PI(s): Russ Schumacher and Jennifer Henderson. Co-PI(s): **Erik R. Nielsen** and Jennifer Spinney

2021-2024: *Improving Knowledge about NWS Forecaster Core Partner Needs for Reducing Vulnerability to Compound Threats in Landfalling Tropical Cyclones Amid Covid-19.* National Oceanic and Atmospheric Administration Weather Program Office. PI: Jen Henderson. Co-PI: **Erik R. Nielsen**

Internal College Undergraduate Research/Education Grants

2023-2024: *Undergraduate Research in conjunction with SEA-Met 8: Barbados.* College of Arts and Sciences, Texas A&M University. Project Leaders: **Erik R. Nielsen** and Don Conlee

2021-2022: *Student Research in Micro Temperature Inversion Sampling.* College of Geosciences, Texas A&M University. Project Leaders: **Erik R. Nielsen**, Don Conlee, and Scott Nolte

CURRENT GRADUATE STUDENTS

Fadli Nauval (M.S., Atmospheric Science, Texas A&M University, Co-Advised with Courtney Schumacher)

CURRENT GRADUATE STUDENT COMMITTEES

Grace Van Patter (M.S., Atmospheric Science, Texas A&M University)
David Topping (M.S., Atmospheric Science, Texas A&M University)
Sarah Wessinger (Ph.D., Atmospheric Science, Texas A&M University)

FORMER GRADUATE STUDENT COMMITTEES

Pauline Karanja (Ph.D., Infrastructure and Environmental Systems, University of North Carolina – Charlotte)

UNDERGRADUATE STUDENTS MENTORED

Anthony Longenette, Andrew Shepherd-Keys, Aidan Duarte, Amariss Hill, and Menya Bird (Summer 2024 - Fall 2024)

-Resulted in student poster at the Texas Weather Conference: "Summertime Evaluation and Intercomparison of Wet Bulb Globe Temperature Observing Systems on Texas A&M Campus, Poster presentation, College Station, TX, November 2024

-Won the first-place student poster award

Leah Mata-Rodriguez (Spring 2024)

Kenzie Allen (Fall 2023)

Michelle Mancilla (Spring 2023 – Fall 2023)

Katelyn Rose (Summer 2022 – Fall 2022, Summer 2023 – Fall 2023)

-Resulted in AMS Student Poster: "Environmental and Storm Mode Characteristics of Severe Wind Producing Thunderstorms in the Central Plains and Southeastern U.S.," 22nd Annual Student Conference, Poster Presentation, Denver, CO, January 2023

Abigail Thornton (Spring 2022 – Summer 2022)

Ashley Palm (Spring 2021 – Spring 2022)

-Resulted in AMS Student Poster: "Practical Micro-Inversion Identification to Reduce Agricultural Herbicide Overspray," 21st Annual Student Conference, Poster Presentation, Virtual Presentation, January 2022

INVITED PRESENTATIONS

"Compound Wind and Water Hazards at Multiple Scales: Perspectives from Forecasters, Broadcasters, Emergency Managers, and the Public," Texas Weather Conference, College Station, TX, Invited Keynote Speaker, November 2024

"Compound Tornado and Flash Flood Hazards: What we know and still need to know," Weather Prediction Center, College Park, MD, Invited Seminar Speaker, June 2022

"Double Impact: When Tornadoes and Flash Floods Threaten the Same Place at the Same Time," Texas A&M University, College Station, TX, Invited Seminar Speaker, July 2019

"Double Impact: When Tornadoes and Flash Floods Threaten the Same Place at the Same Time," National Weather Service Forecast Office Cheyenne, WY, Invited Seminar Speaker, April 15/22, 2016

"Improving Storm Surge Forecasting Using Probabilistic SLOSH Output," Texas A&M University, College Station, TX, Invited Seminar Speaker, March 2013

"Using Probabilistic SLOSH Output to Improve Storm Surge Forecasting," National Hurricane Center, Miami, FL, Invited Seminar Speaker, July 2012

OTHER SELECTED PRESENTATIONS

"Compound Hazards at Multiple Scales: A National Survey of Emergency Managers." American Meteorological Society 7th Conference on Warning Communications, Myrtle Beach, SC, June 2024

"Compound Tornado & Flash Flood (TORFF) Hazards: What We Know and Still Need to Know." 11th Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events, Denver, CO, January 2023

"Exploring Multihazard Joint Probability Forecasts through the Lens of Tornadoes and Flash Floods." American Meteorological Society 31st Conference on Weather Analysis and Forecasting (WAF)/27th Conference on Numerical Weather Prediction (NWP). Oral Presentation, Virtual Presentation, January 2022

"Using Twitter to Understand Public Experiences with Compound Threats during Hurricane Harvey." American Meteorological Society 16th Symposium on Societal Applications: Policy, Research and Practice - Risk Communication in the Weather Forecast and Warning Process. Oral Presentation, Virtual Presentation, January 2021

- “Investigation of the Dynamics of the Extreme Rainfall in Hurricane Florence (2018).” American Meteorological Society Mesoscale Processes Across Scales: Engaging with Communities in the Physical and Social Sciences Symposium, Oral Presentation, Virtual Presentation, January 2021
- “Investigation of the Dynamics of Extreme Rainfall in Landfalling Tropical Cyclones.” American Meteorological Society Tropical Meteorology and Tropical Cyclones Symposium, Poster Presentation, Boston, MA January 2020
- “The Influence of Mesovortices on Precipitation Accumulations in the Houston ‘Tax Day’ 2016 Flood.” American Meteorological Society 18th Conference on Mesoscale Processes, Oral Presentation, Savannah, GA, July 2019
- “Examination of Recent TORFF Events in and around Houston, Texas.” American Meteorological Society Special Symposium on Mesoscale Meteorological Events: Understanding Prediction, and Projection, Poster Presentation, Phoenix, AR, January 2019
- “Dynamical Insights into Extreme Short-Term Precipitation Associated with Supercells and Mesovortices,” American Meteorology Society 25th Conference on Numerical Weather Prediction, Poster Presentation, Denver, CO June 2018, [Selected as one of the Best Student Poster Presentations](#)
- “Observations of Extreme Short-Term Precipitation Associated with Supercells and Mesovortices,” American Meteorology Society 29th Conference on Weather and Forecasting, Oral Presentation, Denver, CO, June 2018
- “Dynamic Insights into Extreme Short-Term Precipitation Associated with Supercells and Mesovortices.” American Meteorological Society 17th Conference on Mesoscale Processes, Oral Presentation, San Diego, CA, July 2017
- “Observations of Extreme Short-Term Precipitation Associated with Supercells and Mesovortices,” American Meteorological Society 28th Conference on Weather Analysis and Forecasting/24th Conference on Numerical Weather Prediction, Oral Presentation, Seattle, WA, January 2017, [Awarded 2nd Place Student Oral Presentation Award](#)
- “An Updated U.S. Geographic Distribution of Concurrent, Collocated Tornado and Flash Flood Events and Look at those Observed during the First Year of VORTEX-SE,” American Meteorological Society Special Symposium on Severe Local Storms: Observation Needs to Advance Research, Prediction, and Communication, Poster Presenter, Seattle, WA, January 2017, [Awarded 2nd Place Student Poster Presentation Award](#)
- “Observations of Extreme Short-Term Precipitation Associated with Supercells and Mesovortices,” American Meteorological Society 28th Conference on Severe Local Storms, Oral Presentation, Portland, OR, November 2016
- “A Closer Look at Concurrent, Collocated Tornado and Flash Flood Events Observed during the First Year of VORTEX-SE.” American Meteorological Society 28th Conference on Severe Local Storms, Poster Presenter, Portland, OR, November 2016
- “Double Impact: When both Tornadoes and Flash Floods Threaten the Same Place at the Same Time,” American Meteorological Society Fourth Symposium on Building a Weather-Ready Nation: Enhancing our Nation’s Readiness, Responsiveness, and Resilience to High Impact Weather Events, Oral Presenter, New Orleans, LA, January 2016
- “Using Convection-Allowing Ensembles to Understand the Predictability of Extreme Rainfall,” American Meteorological Society Special Symposium on Seamless Weather and Climate Prediction—Expectations and Limits of Multi-Scale Predictability, Poster Presenter, New Orleans, LA, January 2016
- “Downscaled Ensemble Reforecasts of Mesoscale Vortices and their Associated Precipitation,” 17th Cyclone Workshop, Oral Presenter, Monterey, CA, October 2015
- “Downscaled Ensemble Reforecasts of Extreme Rainfall Events,” American Meteorological Society 29th Conference on Hydrology, Poster Presenter, Phoenix, AZ, January 2015
- “Comparisons of Precipitation Forecasts for the September 2013 Colorado Front Range Flooding Events and Possible Hydrologic Sensitivities”, American Meteorological Society 26th Conference on

Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction, Poster Presenter, Atlanta, GA, February 2014
“Using Probabilistic SLOSH Output to Improve Storm Surge Forecasting “, American Meteorological Society 11th Symposium on the Coastal Environment, Oral Presenter, Austin, TX, January 2013
“PIBAL: Still a Cost-Effective Research and Learning Tool”, American Meteorological Society 12th Annual Student Conference, Poster Presenter, New Orleans, LA, January 2012

TEACHING EXPERIENCE

Co-Instructor, Texas A&M University, ATMO-370: Student High Impact Experiences in Meteorology
-*Spring 2022, Summer 2022, Spring 2023, Spring 2024*
-*Includes Co-leading SEA-Met study abroad program and Convective Storms Field Study*

Instructor, Texas A&M University, ATMO-456: Practical Weather Forecasting (Capstone Course and Writing Intensive)
-*Spring 2022, Spring 2023, Spring 2024*

Instructor, Texas A&M University, ATMO-201: Weather and Climate
-*Spring 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023 (majors), Fall 2024*

Instructor, Texas A&M University, ATMO-352: Severe Weather and Mesoscale Forecasting
-*Spring 2021, Spring 2024*

Co-Instructor, Texas A&M University, ATMO-489: Convective Storms Field Study
-*Spring 2021*

Instructor, Texas A&M University, ATMO-203: Weather Forecasting Lab
-*Fall 2020, Fall 2021, Fall 2022, Spring 2023, Fall 2023, Fall 2024*

Instructor, Texas A&M University, ATMO-251: Weather Observation and Analysis
-*Fall 2020, Fall 2021, Fall 2022, Fall 2023, Fall 2024*

Teaching Assistant, Colorado State University, ATS-641: Mesoscale Meteorology
- *Spring 2018*

Teaching Assistant, Colorado State University, ATS-602: Atmospheric Dynamics II
- *Spring 2015*

Teaching Assistant, Texas A&M University Research Experience for Undergraduate (REU) Field Phase
- *July 2013*

DEPARTMENTAL/UNIVERSITY SERVICE

Liaison, Climavision/Texas A&M University Department of Atmospheric Sciences O&M Radar Install, College of Arts and Sciences, July 2023 – June 2024

Member, Faculty Affairs Council – Academic Professional Track, Texas A&M University, College of Arts and Sciences, October 2022 – September 2023, September 2024 - Present

Member, Texas A&M University, Department of Atmospheric Sciences, Undergraduate Program Committee, January 2022-December 2022, August 2023-Present

Member, Texas A&M University, Department of Atmospheric Sciences, Department APT Faculty Search Committee, Spring 2023-Fall 2023

Organizer, Texas A&M University, Department of Atmospheric Sciences, ATMO Help Desk, Fall 2022-Present

Primary Faculty Advisor, Texas A&M University Student Chapter of the American Meteorological Society (TAMSCAMS), Fall 2021-Present

Co-Coordinator, Texas A&M University, Department of Atmospheric Sciences, SEA-Met Study Abroad Program, Fall 2021-Present

Co-Coordinator, Texas A&M University, Department of Atmospheric Sciences, Convective Storms Field Study, Spring 2021-Present

Co-Coordinator, Texas A&M University, Department of Atmospheric Sciences, Student Operated Upper-Air Program (SOUP), Fall 2020-Present

Co-Coordinator, Texas A&M University, Department of Atmospheric Sciences, Weekly Weather Map Discussion, Fall 2020-Present

Colorado State University, Department of Atmospheric Science, Student Radiosonde Outreach Team, August 2014-August 2020, Radiosonde Launches: ~35

Graduate Student Representative to Faculty, Colorado State University, August 2014-August 2016 and August 2017-2018

Colorado State University, Department of Atmospheric Science, Graduate Representative to College of Engineering Student Technology Committee, August 2015-August 2016 and August 2017-August 2018

PROFESSIONAL SERVICE:

Editor, *Journal of Operational Meteorology*, March 2024 - Present

Program Co-Chair, Session Chair, 3rd Symposium on Mesoscale Processes, American Meteorological Society (AMS) Annual Conference, January 2023

Chair, American Meteorological Society (AMS), Scientific and Technologies Activities Commission, Committee on Mesoscale Processes, 2023-2025; Vice-Chair 2021-2023; Member 2020-Present

Associated Editor, *Monthly Weather Review*, 2020-2021

Program Co-Chair, 17th American Meteorological Society Student Conference, Austin, TX, January 2018

Member, American Meteorological Society (AMS) Annual Conference Planning Committee, June 2016-January 2018

American Meteorological Society (AMS) Beacon, 2016-Present

Member, American Meteorological Society (AMS) Student Conference Planning Committee, Member Agenda Subcommittee, May 2013-January 2019

Reviewer of Scientific Articles For:

Monthly Weather Review

Journal of Hydrometeorology

Weather and Forecasting

Journal of Applied Meteorology and Climatology

Journal of the Atmospheric Sciences

Physical Geography

Water Resources Research

Journal of Geophysical Research-Atmospheres

Geophysical Research Letters

Atmosphere

Transactions of Geoscience and Remote Sensing

International Journal of Disaster Risk Reduction

Natural Hazards

Weather, Climate, and Society

Natural Hazards and Earth System Sciences

Bulletin of the American Meteorological Society

Journal of Operational Meteorology

Theoretical and Applied Climatology

Climate and Atmospheric Science

Quarterly Journal of the Royal Meteorological Society

Reviewer of Grant Proposals For:

National Aeronautics and Space Administration

National Science Foundation

PROFESSIONAL SOCIETIES

Member, American Meteorological Society

Member, National Weather Association

2009-Present

2010-2011, 2023-Present