

Dr. Matthew C. Brown (*he/him*)

CONTACT INFORMATION

Clifford Hall Room 458
4149 University Ave Stop 9006,
Grand Forks, ND 58201

(717) 575-1696
m.c.brown@und.edu

EDUCATION

Ph.D. in Atmospheric Sciences, 2021

Texas A&M University, College Station, TX
Advisor: Dr. Christopher J. Nowotarski
• Thesis: *Multiscale Evolution of Southeast US Storms and Their Environments*

M.S. in Atmospheric Sciences, 2018

Texas A&M University, College Station, TX
Advisor: Dr. Christopher J. Nowotarski
• Thesis: *The Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms*

B.S. in Meteorology (with distinction), 2016

Pennsylvania State University, State College, PA
• Minor: Mathematics

RESEARCH & PROFESSIONAL EXPERIENCE

Assistant Professor - University of North Dakota

Department of Atmospheric Sciences - John D. Odegard School of Aerospace Sciences 08/26 - present

OU Graduate Faculty (Special Member)

OU School of Meteorology – College of A&GS 02/25 - present

NSF Atmospheric and Geospace Sciences Postdoctoral Research Fellowship (AGS-PRF)

National Severe Storms Laboratory (NSSL) 06/24 - present
• Advisor: Dr. Patrick S. Skinner

National Research Council (NRC) Postdoctoral Fellow

National Severe Storms Laboratory (NSSL) 01/22 - 06/24
• Advisor: Dr. Michael C. Coniglio

Graduate Research Assistant

Texas A&M University, Department of Atmospheric Sciences Fall 2016 - Fall 2021
• Advisor: Dr. Christopher J. Nowotarski

Penn State Air Quality Forecast Office (PSAQFO) Intern

Pennsylvania State University, Department of Meteorology Summer 2016
• Advisors: Dr. Amy K. Huff and William F. Ryan
• Composed and issued air quality forecasts for the Philadelphia metropolitan area and State of Delaware.

Undergraduate Research Intern

Earth System Science Interdisciplinary Center (ESSIC) Summer 2015
• NOAA Center for Atmospheric Sciences (NCAS)
Undergraduate Summer Internship Program (USIP)

FIELD WORK
EXPERIENCE

Targeted Observations by Radars and UAS of Supercells (TORUS)

NOAA National Severe Storms Laboratory

Spring 2023

- Helped lead NSSL lidar, mobile mesonet and radiosonde observations.

Propagation, Evolution and Rotation in Linear Storms (PERiLS)

NOAA National Severe Storms Laboratory

Spring 2022, 2023

- Helped lead NSSL lidar, mobile mesonet and radiosonde observations, assisted with balloonsonde operations.
- Served as Visual Observer (VO) and Ground Station Operator (GSO) with OU BLISS small unmanned system (sUAS) CopterSonde operations.
- Assisted fixed wing small unmanned system (sUAS) damage surveys.

MESO18–19 Graduate Coordinator

Texas A&M University, Department of Atmospheric Sciences

Fall 2018 - Spring 2019

- Supervised weather balloon launches and data collection.

TEACHING &
MENTORING
EXPERIENCE

Guest Lecturer

Oklahoma University, School of Meteorology

Spring 2024 - 2026

- METR 1003 (Introduction to the Atmospheric Sciences)
- Topics covered: Severe storms research, undergraduate/graduate school preparation and tips
- Contact (instructor): Dr. Chenghao Wang

Guest Lecturer

Oklahoma University, School of Meteorology

Spring 2023

- METR 3123 (Dynamics II)
- Topics covered: Vertical vorticity equation, development of rotation in supercell thunderstorms and squall lines
- Contact (instructor): Dr. James Ruppert

Guest Lecturer

Oklahoma University, School of Meteorology

Fall 2022

- METR 3113 (Dynamics I)
- Topics covered: Thermal wind balance and its applications, low-level jets
- Contact (instructor): Dr. James Ruppert

Guest Lecturer

Oklahoma University, School of Meteorology

Spring 2022

- METR 3123 (Dynamics II)
- Topics covered: Low-level/nocturnal jet mechanisms and meteorological impacts
- Contact (instructor): Dr. James Ruppert

Guest Lecturer

Texas A&M University, Department of Atmospheric Sciences

Spring 2022

- ATMO 658 (Synoptic Meteorology)
- Topics covered: Low-level/nocturnal jet mechanisms and meteorological impacts
- Contact (instructor): Dr. Erik Nielsen

Graduate Teaching Assistant/Daily Instructor

Texas A&M University, Department of Atmospheric Sciences

Fall 2019

- ATMO 203 (Weather Forecasting Laboratory)
- Prepared and delivered daily lessons, exercises, and quizzes.
- Contact (advisor): Dr. Don Conlee

Graduate Teaching Assistant

Texas A&M University, Department of Atmospheric Sciences Spring 2019

- ATMO 456 (Practical Weather Forecasting)
- Assisted lectures and in-class activities, and provided grades and detailed feedback on forecast discussions.
- Contact (instructor): Dr. Don Conlee

Graduate Mentor

Texas A&M University, Department of Atmospheric Sciences Summer 2017 - 2019

- Research Experience for Undergraduates (REU) program

REFEREED PUBLICATIONS

[8] Hua, Z., Anderson-Frey, A., Jiang, Q., and **Brown, M. C.** (2025). Clustering of Right-Moving Tornadoic Supercell Proximity Soundings using an Explainable Framework, *J. Geophys. Res.*, **131**(17). ([DOI](#))

[7] Britt, K. C., Skinner, P. S., **Brown, M. C.**, Heinselman, P. L., and Clark, A. J. (2025). System-Relative Prediction of Quasi-Linear Convective System Mesovortices in the Warn-on-Forecast System (WoFS), *Wea. Forecasting*, **41**(4), 843-87 ([DOI](#))

[6] **Brown, M. C.**, Marion, G. R., and Coniglio, M. C. (2025). Influence of Low-Level Shear Orientation and Magnitude on the Evolution and Rotation of Idealized Squall Lines. Part II: Storm Propagation and Dynamic Feedbacks, *Mon. Wea. Rev.*, **154**(2), 203-225. ([DOI](#))

[5] Wheeler, K., Schenkel, B. A., **Brown, M. C.**, Edwards, R., and Dickinson, T. (2025). Impacts of Extratropical Transition on Tropical Cyclone Tornado Occurrence, *Mon. Wea. Rev.*, **153**(11), 2333-2352. ([DOI](#))

[4] **Brown, M. C.**, Marion, G. R., and Coniglio, M. C. (2024). Influence of Low-Level Shear Orientation and Magnitude on the Evolution and Rotation of Idealized Squall Lines. Part I: Storm Morphology and Bulk Updraft/Mesovortex Attributes, *Mon. Wea. Rev.*, **152**(9), 2089-2110. ([DOI](#))

[3] **Brown, M. C.**, Nowotarski, C. J., Dean, A. R., Smith, B. T., Thompson, R. L., and Peters, J. M. (2021). The Early Evening Transition in Southeastern U.S. Tornado Environments, *Wea. Forecasting*, **36**(4), 1431-1452. ([DOI](#))

[2] **Brown, M. C.**, and Nowotarski, C. J. (2020). Southeastern US Tornado Outbreak Likelihood Using Daily Climate Indices. *J. Climate*, **33**(8), 3229-3252. ([DOI](#))

[1] **Brown, M.**, and Nowotarski, C. J. (2019). The Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms. *J. Atmos. Sci.*, **76**(5), 1349-1372. ([DOI](#))

MANUSCRIPTS IN REVIEW OR PREPRINTS

Hua, Z., Anderson-Frey, A., **Brown, M. C.** and Jiang, Q. (2025). A Data-Driven Explainable Framework for Diagnosing Cluster Assignments of Right-Moving Tornadoic Supercell Soundings, *In preprints*. ([Link](#))

MANUSCRIPTS IN PREPARATION

Brown, M. C., Coniglio, M. C., Marion, G. R., Marion, G. R., Schaumann, J. S., Ungar, M. D., Sherburn, K. D., and Black B. (2026). Blurring The Lines: The Issues and Complexity of Anticipating Linear Mode Tornadoes Within the Current Forecasting Paradigm, *Bulletin of the American Meteorological Society (BAMS)*, *In preparation (proposal approved)*.

Brown, M. C., Fricker, T., and Murillo, E. M. (2026). Development and Application of an Integrated Radar-Socioeconomic Dataset Using GridRad-Severe Observations, *In preparation*.

Marion, G. R., **Brown, M. C.**, Coniglio, M. C, and Galarneau, T. J. (2026). Evolution and maintenance of mesovortices in a high shear, low CAPE squall line simulation, *In preparation*.

Brown, M. C., Nowotarski, C. J., Davenport, C. E., and Peters, J. M. (*TBD*). Impacts of the Early Evening Transition on Updraft Forcing and Evolution in Idealized Simulations of High-Shear, Low-CAPE Supercells, *In preparation*.

INVITED
TALKS

“ Tweaking the Recipe: New Perspectives on QLCS Mesovortex Prediction from Models and Observations”, National Weather Service, Foundations Friday Webinar Series, 08/2026

“ Still Figuring it Out? Passion Discovery for Early Career Scientists”, AMS Board for Early Career Professionals, AMS Webinar Series, 06/2026

“ Recipe for Confusion: Challenges and Limitations of the Ingredients-Based QLCS Tornado Forecast Paradigm”, VORTEX-USA 10th Anniversary Workshop, National Weather Center, Norman, OK; 03/2026

“ On the Cusp: The Next Wave of QLCS Science (and how I plan to ride it)”, Department of Atmospheric Sciences, University of North Dakota, Grand Forks, ND; 10/2025

“Toeing the Line: How to Build a Risky Science Question (And Answer It Correctly)”, Oklahoma Weather Lab (OWL), Oklahoma University, Norman, OK; 10/2025

“So You Want To Be a Severe Storms Researcher?”, School of Meteorology REU Program, Oklahoma University, Norman, OK; 07/2024 and 07/2025

“It’s (Squ)all in the Details: Rethinking our conceptual model for squall line rotation”, Department of Atmospheric and Environmental Sciences, University at Albany-SUNY, Albany, NY; 03/2024

“I Walk The Line: Advances in QLCS Research (And Lessons Learned Along the Way)”, Oklahoma Weather Lab (OWL), Oklahoma University, Norman, OK; 09/2023

“Southeast US Thunderstorms: Dynamics, Predictability, and Steps Forward”, School of Meteorology, Oklahoma University, Norman, OK; 03/2022

“Evolution of Southeast US Storm Environments Across Scales and its Impact on Tornadoogenesis”, Department of Atmospheric Sciences, Texas A&M University, College Station, TX; 01/2021

“Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms”, Department of Atmospheric Sciences, Texas A&M University, College Station, TX; 02/2019

CONFERENCE
PROCEEDINGS

Oral Presentations (* indicates student mentee)

Brown, M. C., and Coniglio, M. C.: “Recipe for Confusion: Challenges and Limitations of the Ingredients-Based QLCS Tornado Forecast Paradigm”, 32nd AMS Conf. on Severe Local Storms, Madison, WI; 08/2026

Britt, K. C., Skinner, P. S., **Brown, M. C.**, and Clark, A. J.: “QTor: A New Parameter for Forecasting QLCS Tornado Potential”, 32nd AMS Conf. on Severe Local Storms, Madison, WI; 08/2026

Wheeler, K. M.*, Schenkel, B. A., Ruppert, J. H., **Brown, M. C.**, Homeyer, C. R., and Galarneau, T. J.: “How Does Extratropical Transition Impact the Diurnal Variability of Tropical Cyclone Convection?”, 37th Conference on Hurricanes and Tropical Meteorology, San Diego, CA; 04/2026

Mullinix, S.*, Schenkel, B. A., Mendeke, R. N., Ruppert, J. H., **Brown, M. C.**, Homeyer, C. R., Wheeler, K. M.*, and Galarneau, T. J.: “How Does Extratropical Transition Impact the Diurnal Variability of Tropical Cyclone Convection?”, 37th Conference on Hurricanes and Tropical Meteorology, San Diego, CA; 04/2026

Britt, K. C., Skinner, P. S., **Brown, M. C.**, Heinselman, P. L., and Clark, A. J.: “QTor: A New Parameter for Forecasting QLCS Tornado Potential”, VORTEX-USA 10th Anniversary Workshop, National Weather Center, Norman, OK; 03/2026

Britt, K. C., Skinner, P. S., **Brown, M. C.**, Heinselman, P. L., and Clark, A. J.: “Forecasting Quasi-Linear Convective System Tornado Potential using the Warn-on-Forecast System (WoFS)”, 106th Annual AMS Meeting, Third Symposium on the Future of Weather, Forecasting, and Practice, Houston, TX; 01/2026

Brown, M. C., Coniglio, M. C., Marion, G. R., Marion, G. R., Schaumann, J. S., Ungar, M. D., Sherburn, K. D., and Black B.: “Out of Balance: The Shifting Paradigm for Predicting Squall Line Rotation”, 21st AMS Conf. on Mesoscale Processes, Boise, ID; 06/2025

Britt, K. C., **Brown, M. C.**, Skinner, P. S., Heinselman, P. L., and Clark, A. J.: “System-Relative Probabilistic Forecasts of QLCS Mesovortex Tornado Potential within the Warn-on-Forecast System (WoFS)”, 21st AMS Conf. on Mesoscale Processes, Boise, ID; 06/2025

Brown, M. C., Marion, G. R. and Coniglio, M. C.: “Influence of Low-Level Shear Variability on Propagation and Inflow Attributes of Idealized Squall Lines”, 31st AMS Conf. on Severe Local Storms, Virginia Beach, VA; 10/2024

Wheeler, K. M.*, Schenkel, B. A., Yussouf, N., **Brown, M. C.**, Edwards, R.: “Does Extratropical Transition Impact Tropical Cyclone Tornado Environments?”, 31st AMS Conf. on Severe Local Storms, Virginia Beach, VA; 10/2024

Schenkel, B. A., Sloan, I. M., **Brown, M. C.**, Ruppert, J. H., Edwards, R. and Waugh, S. M.: “Diurnal Variability of Tropical Cyclone Tornadoes Strengthens with Increasing Distance from the Coast”, AMS 36th Conference on Hurricanes and Tropical Meteorology, Long Beach, CA; 05/2024

Brown, M. C.: “It’s (Squ)all in the Details: Rethinking our conceptual model for squall line rotation”, National Weather Center Convective Seminar Series, Oklahoma University, Norman, OK; 02/2024

Marion, G. R., **Brown, M. C.**, Galarneau, T. J. and Coniglio, M. C.: “Understanding Mesovortices in High Shear, Low CAPE Environments”, PERiLS Field Campaign Workshop, Memphis, TN; 11/2023

Brown, M. C., Marion, G. R. and Coniglio, M. C.: “Impacts of Low-Level Shear Orientation and Magnitude on Structure and Mesovortex Production in Idealized Squall Lines”, 20th AMS Conf. on Mesoscale Processes, Madison, WI; 07/2023

Brown, M. C., Nowotarski, C. J., Davenport, C. E., and Peters, J. M. : “Assessing Impacts of the Early Evening Transition on Updraft Forcing and Evolution in Idealized Simulations of High-Shear, Low-CAPE Supercells”, Student and Early Career Scientist Conference in Severe Local Storms, virtual format, 11/2021

Brown, M. C., C. J. Nowotarski, A. R. Dean, R. L. Thompson, B. T. Smith, and J. M. Peters : “Investigating the Early Evening Transition of Southeast U.S. Storm Environments and Its Consequences for Tornadogenesis”, 101st AMS Annual Meeting, Mesoscale Processes Symposium, virtual format, 01/2021

Brown, M. C. : “Investigating Teleconnections Between Southeastern US Tornado Outbreaks and Daily Climate Indices”, Graduate Student Seminar series, Texas A&M University, College Station, TX; 11/2020

Brown, M. C. : “Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms”, Graduate Student Seminar series, Texas A&M University, College Station, TX; 11/2018

Brown, M. and C. J. Nowotarski : “Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms”, Texas Weather Conference, University of Texas at Arlington, Arlington, TX, 09/2018

Brown, M. : “Influence of Arctic Oscillation evolution on eastern and southeastern US tornado likelihood”, Graduate Student Seminar series, Texas A&M University, College Station, TX; 02/2018

Brown, M. : “Influence of AO/NAO on eastern US storm environment”, Graduate Student Seminar series, Texas A&M University, College Station, TX; 04/2017

Poster Presentations (* indicates student mentee)

Center, G.*, **Brown, M. C.**, Schenkel, B. A., and Ruppert, J. H.: “Impact of Free-Tropospheric Moisture on Simulated Tropical Cyclone Supercell Structure”, 32nd AMS Conf. on Severe Local Storms, Madison, WI; 08/2026

Schenkel, B. A., Ruppert, J. H., **Brown, M. C.**, B. A., Sandmael, T., Calhoun, K. M., Homeyer, C. R., Galarneau, T. J., Edwards, R. : “A Multi-Scale Analysis of Tropical Cyclone Supercells and Their Environments”, 32nd AMS Conf. on Severe Local Storms, Madison, WI; 08/2026

Wheeler, K. M.*, Schenkel, B. A., Ruppert, J. H., and **Brown, M. C.**: “The Diurnal Cycle of Tornadoes, Rainfall, and Precipitating Cloud Types within Landfalling Tropical Cyclones”, 32nd AMS Conf. on Severe Local Storms, Madison, WI; 08/2026

Brown, M. C., Coniglio, M. C., Marion, G. R.: “Resurgence: New Perspectives on the Role of Bow Echoes in QLCS Mesovortexgenesis”, 106th Annual AMS Meeting, Third Symposium on the Future of Weather, Forecasting, and Practice, Houston, TX; 01/2026

Schenkel, B. A., **Brown, M. C.**, B. A., Ruppert, J. H., Sandmael, T., Calhoun, K. M., Homeyer, C. R., Galarneau, T. J., Edwards, R.: “How Does Extratropical Transition Impact Tropical Cyclone Supercell Characteristics?”, 106th Annual AMS Meeting, First Symposium on Tropical Meteorology and Climate, Houston, TX; 01/2026

Wheeler, K. M.*, Schenkel, B. A., Ruppert, J. H., **Brown, M. C.**, and Edwards, R.: “Diurnal Variability of Tropical Cyclone Tornadoes during Extratropical Transition”, 105th AMS Annual Meeting, 7th Special Symposium on Tropical Meteorology and Tropical Cyclones, New Orleans, LA; 01/2025

Mullinix, Sadie, Schenkel, B. A., Mendeke, R. N., Ruppert, J. H., **Brown, M. C.**, and Homeyer, C. R.: “How Does the Diurnal Cycle Affect Tropical Cyclone Precipitation Structure after Landfall?”, 105th AMS Annual Meeting, 7th Special Symposium on Tropical Meteorology and Tropical Cyclones, New Orleans, LA; 01/2025

Brown, M. C., Fricker, T. and Murillo, E. M.: “Towards the Development of a Multi-Year, Integrated Radar-Socioeconomic Dataset Using GridRAD Observations”, 31st AMS Conf. on Severe Local Storms, Virginia Beach, VA; 10/2024

Britt, K. C.*, Skinner, P. S., **Brown, M. C.**, and Heinselman, P. L.: “Investigating the Potential of Using Upstream Line-Parallel and Line-Normal Shear to Predict QLCS Mesovortices in the Warn-on-Forecast System (WoFS)”, 31st AMS Conf. on Severe Local Storms, Virginia Beach, VA; 10/2024

Brown, M. C., Coniglio, M. C.: “Influence of Low-Level Shear Orientation on Mesovortex Maintenance and Forcing in Idealized Squall Lines”, 30th AMS Conf. on Severe Local Storms, Santa Fe, NM; 10/2022

Brown, M. C., Nowotarski, C. J., Davenport, C. E., and Peters, J. M. : “Impacts of the Early Evening Transition on Updraft Forcing and Evolution in Idealized Simulations of High-Shear, Low-CAPE Supercells”, 102nd Annual AMS Meeting, 19th Conference on Mesoscale Processes, virtual format; 01/2022

Brown, M. C. and C. J. Nowotarski : “Identifying Teleconnections Between South-eastern US Tornado Outbreaks and Daily Climate Indices”, 100th Annual AMS Meeting, Severe Local Storms Symposium, Boston, MA; 01/2020

Riggin, R. R.*, **Brown, M. C.**, M. Breckenkamp, and C. J. Nowotarski : “3D Analysis of Low-Level Shear and LCL Height Influences on Outflow and Surface Rotation in Simulated Supercell Thunderstorms”, 100th Annual AMS Meeting, Severe Local Storms Symposium, Boston, MA; 01/2020

Cheatham, R.*, C. J. Nowotarski, and **M. Brown** : “A Comparison of Tornadic and False Alarm Convective Cells in the Outer Rainbands of Hurricane Harvey” 99th Annual AMS Meeting, 18th Annual Student Conference, Phoenix, AZ; 01/2019

Brown, M. and C. J. Nowotarski : “Influence of Lifting Condensation Level on Low-Level Outflow and Rotation in Simulated Supercell Thunderstorms”, 29th AMS Conf. on Severe Local Storms, Stowe, VT; 10/2018

Brown, M. and C. J. Nowotarski : “Influence of AO/NAO/PNA evolution on eastern and southeastern US storm environment”, 98th Annual AMS Meeting, 31st Conf. on Climate Variability and Change, Austin, TX; 01/2018

Brown, M. and C. J. Nowotarski : “Development of a predictive tool for tornadoes downwind of the Appalachian Mountains using AO and NAO indices” (edited with new results), 97th Annual AMS Meeting, Special Symposium on Severe Local Storms, Seattle, WA; 01/2017

Brown, M. and C. J. Nowotarski : “Development of a predictive tool for tornadoes downwind of the Appalachian Mountains using AO and NAO indices”, AMS 28th Conf. on Severe Local Storms, Portland, OR; 11/2016

AWARDS
AND HONORS

Post-Graduate Awards

(*N = National, U = University, C = College, D = Department*)

- AMS Editor's Award - MWR/WAF 2026
American Meteorological Society (N)
- Very Early Career Outstanding Presentation Award 2023
AMS 20th Conference on Mesoscale Processes (N)
- Selected as participant in 2023 Class of AMS Early Career 2023
Leadership Academy (N)

Graduate Awards

(*N = National, U = University, C = College, D = Department*)

- Academic Excellence Award – Charles P. and Jill G. 2021
Murphy Scholarship (U)
- Mr. & Mrs. Kenneth P. Pipes Endowed Fellowship (C) 2020-2021
- Academic Excellence Award – Maxey C. Chenault '37 2020-2021
Memorial Scholarship (U)
- Outstanding Student Research Award (D) 2020
- Outstanding Graduate Student Seminar Award (D) 2020
- Outstanding Graduate Teaching Assistant Award (D) 2019
- M.T. Halbouty '30/AAPG Foundation Endowed Fellowship (C) 2018-2019
- Outstanding Graduate Student Seminar Award (D) 2018
- Best Student Poster Presentation – 29th AMS Severe 2018
Local Storms Conference (N)
- Lechner Graduate Scholarship (U) 2017-2018,
2016-2017

Undergraduate Awards

(*N = National, U = University, C = College, D = Department*)

- John A. Dutton Award in Atmospheric Dynamics (D) 2016
- 2nd place Upperclassmen Forecaster (Nationally) – 2016
WxChallenge Forecasting Competition (N)
- National Team Champion– 2016
WxChallenge Forecasting Competition (N)
- Dean's List (U) 2012
2014-2016
- John and Elizabeth Tea Holmes Scholarship (U) 2015
- Charles L. and Anna R. Scholarship in Meteorology (D) 2015
- Hans A. Panofsky Scholarship (D) 2015
- 1st place Upperclassmen Forecaster (Nationally) – 2015
WxChallenge Forecasting Competition (N)
- National Team Champion– 2015
WxChallenge Forecasting Competition (N)
- Induction into Chi Epsilon Pi Honors Society (N) 2014

GRADUATE STUDENTS ADVISED	• Evan Gustafson - M.S. (in progress), University of North Dakota • Amy Conner - M.S. (in progress), University of North Dakota • Kyle Gillett - Ph.D. (in progress), University of North Dakota • Gabe Cenker - M.S. (in progress), Oklahoma University	
OTHER GRADUATE STUDENT COMMITTEES	• Kayla Wheeler - Ph.D. (in progress), Oklahoma University [<i>committee member through 2025</i>] • Kelsey Britt Ph.D. (2024) [<i>informal committee member, now CIWRO research scientist</i>]	
UNDERGRADUATE STUDENTS MENTORED	• Cole Gabos (UND Senior Capstone) • Sadie Mullinix (OU SoM Undergraduate) • Peyton Stevenson (Texas A&M Undergraduate) • Joshua Ostaszewski (Texas A&M Undergraduate) • Roger Riffin (Texas A&M REU mentee) • Rebekah Cheatham (Texas A&M REU mentee) • Charles Sassaman (Texas A&M Undergraduate) • Erin Jones (REU mentee) • Various Penn State meteorology students (via tutoring service offered by Chi Epsilon Pi)	8/2026 - <i>present</i> 8/2024 - 8/2026 8/2021 - 11/2021 6/2020 - 8/2020 6/2019 - 8/2019 6/2018 - 8/2018 5/2017 - 12/2017 6/2017 - 8/2017 2016
SERVICE AND OUTREACH	Professional Service • Associate Editor AMS Monthly Weather Review (<i>starting Jan. 2026</i>), • Conference Co-Chair AMS 21st Conference on Mesoscale Processes (Aug. 2024 – Jun. 2025), • AMS STAC Committee on Mesoscale Processes Full Committee Member (Nov. 2023 – <i>present</i>), Vice-Chair (Apr. 2025 – <i>present</i>), • Article Peer Reviews <i>npj Climate and Atmospheric Science</i> <i>Geophysical Research Letters</i> <i>Journal of Atmospheric Sciences</i> <i>Journal of Geophysical Research</i> <i>Monthly Weather Review</i> <i>Weather and Forecasting</i> <i>Journal of Applied Meteorology & Climatology</i> <i>Journal of Atmospheric & Oceanic Technology</i> <i>AGU Earth and Space Science</i> <i>Atmosphere</i> • Proposal Ad-Hoc Reviews <i>NSF Physical and Dynamic Meteorology Program</i> • Student Oral/Poster Presentation Judging <i>AMS 32nd Conference on Severe Local Storms</i>, Madison, WI, 08/2026 <i>106th AMS Annual Meeting</i>, Houston, TX, 01/2026 <i>AMS 21st Conference on Mesoscale Processes</i>, Boise, ID, 06/2025	

Professional Service (continued)

AMS 31st Conference on Severe Local Storms,
Virginia Beach, VA, 10/2024

AMS 20th Conference on Mesoscale Processes,
Madison, WI, 07/2023

AMS 30th Conference on Severe Local Storms,
Santa Fe, NM, 10/2022

- Conference Program Committee Member

AMS 30th Conference on Severe Local Storms,
Santa Fe, NM, 10/2022

- Conference Session Chair

AMS 32nd Conference on Severe Local Storms,
Madison, WI, 08/2026

AMS 17th Conference on Cloud Physics,
Madison, WI, 08/2026

AMS 21st Conference on Mesoscale Processes,
Boise, ID, 06/2025

AMS 31st Conference on Severe Local Storms,
Virginia Beach, VA, 10/2024

AMS 19th Conference on Mesoscale Processes
(virtual), 01/2022

- Research Experiences for Undergraduates (REU)
Selection Committee

OU School of Meteorology – 2023-2025

- AMS Board on Representation, Accessibility, Inclusion, and
Diversity (BRAID)

AMS BRAID Member, 01/2022-present

AMS BRAID Coriolis Member, 01/2022-present

AMS BRAID Coriolis Outreach Chair, 06/24-present

Graduate Service

- TAMU Graduate Seminar Committee Chair 2018-2021
- TAMU AMS Meeting Recruitment Committee Spring 2020
- Graduate Representative - TAMU ATMO Website Design Committee 2019
- TAMU Prospective Student Visit Committee Spring 2019

Undergraduate Service

- Secretary/Historian for PSU Chapter of Chi Epsilon Pi Honors Society 2015-2016
- Forecast Shift Manager - PSU Campus Weather Service 2015-2016

PROFESSIONAL DEVELOPMENT	AMS Early Career Leadership Academy (ECLA)	Spring/Summer 2023
	Center for the Integration of Research, Teaching, and Learning (CIRTL) Practitioner Certificate	2020
	Completion of GEOS 677 - College Classroom Teaching: Integration of Research, Teaching, and Learning	
	Center for the Integration of Research, Teaching, and Learning (CIRTL) Associate Certificate	2019
	Completion of 2019-2020 Summer Course: An Introduction to Evidence-Based Undergraduate STEM Teaching	
PROFESSIONAL MEMBERSHIPS	American Geophysical Union (AGU)	2019 - Present
	American Meteorological Society (AMS)	2014 - Present
GRANTS AWARDED	NSF AGS-2426296	
	8/1/2024-7/31/2027, \$698,967, "How does the extratropical transition of tropical cyclones impact tornadoes and supercells?" Role: Co-PI, Co-Investigators: B. Schenkel (Lead-PI; CIWRO/NSSL), J. Ruppert (Co-PI; Oklahoma University)	
	NSF AGS-2414969	
	Peer-reviewed research proposal for NSF AGS-PRF fellowship, \$202,000, "A Unified Conceptual Model for the Development of Near-Surface Rotation in Squall Lines"	2024-2026
	National Research Council Postdoctoral Grant	
	Peer-reviewed research proposal for NRC postdoctoral fellowship, \$120,000, "Impacts of Storm-Relative Flow and its Origins on Low-Level Updrafts and Vorticity Generation in Supercell Thunderstorms"	2022-2024
GRANTS IN PREP/ SUBMITTED	NASA Early Career Investigator Program (ECIP)	
	1/1/2027-1/1/2030, \$296,662, "Assessing supercell thunderstorm mergers and their impact on tornadogenesis using satellite-based observations of storm-top interactions" Role: PI, Co-Investigators: A. Conner (student; UND), J. Cooney (collaborator; NASA) – <i>submitted Summer 2026</i>	
	DOE Biological and Environmental Research	
	8/1/2027-7/31/2030, \$990,874, "Investigating the role mass-dimension and velocity-dimension relationships on cold pool formation in mesoscale convective systems" Role: Co-PI, Co-Investigators: A. Dzambo (Lead-PI; CIWRO), G. McFarquhar (Co-PI; CIWRO/OU) – <i>submitted Spring 2026</i>	
	NOAA WPO VORTEX-USA	
	8/1/2025-7/31/2028, \$618,441, "System-Relative Probabilistic Forecasts of Q LCS Mesovortex Tornado Potential" Role: Collaborator, Co-Investigators: K. Britt (Lead-PI; CIWRO), P. Skinner (Co-PI; CIWRO/NSSL), T. Sandmael (CO-I; CIWRO/OU) – <i>submitted Spring 2025, funding postponed</i>	

TECHNICAL
SKILLS

Operating Systems

Mac, Linux, Windows

Programming Languages

MATLAB (*advanced*), Python (*intermediate*), Fortran (*intermediate*), Shell scripting (*familiar*), R (*familiar*)

Other Skills

L^AT_EX, Microsoft Word/Excel/Powerpoint, JMP Statistical Software