Casey E. Davenport

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EDUCATION

Ph.D. in Atmospheric Sciences (May 2013)
Dissertation: "Observed and Simulated Supercell Demise Depicted by VORTEX2 Observations"
Department of Marine, Earth & Atmospheric Sciences
North Carolina State University
Raleigh, NC, USA

M.S. in Atmospheric Sciences (August 2009)
Thesis: "Mesoscale Convective Systems Crossing the Appalachian Mountains"
Department of Marine, Earth & Atmospheric Sciences
North Carolina State University
Raleigh, NC, USA

B.S. in Meteorology (May 2007) *Summa Cum Laude*
Department of Geography and Meteorology
Valparaiso University
Valparaiso, IN, USA

ACADEMIC POSITIONS

Associate Professor (July 2022 – present)
Department of Geography & Earth Sciences
University of North Carolina at Charlotte
Charlotte, NC, USA

Assistant Professor (August 2014 – June 2022)
Department of Geography & Earth Sciences
University of North Carolina at Charlotte
Charlotte, NC, USA

Assistant Professor (June 2013 – June 2014), **Lecturer** (June 2012 – May 2013)
Department of Physics
United States Air Force Academy
Colorado Springs, CO, USA

Graduate Research Assistant (August 2008 – May 2009; August 2010 – May 2012)
Department of Marine, Earth & Atmospheric Sciences
North Carolina State University
Raleigh, NC, USA

Graduate Teaching Assistant (August 2007 – May 2008; August 2009 – May 2010)
Department of Marine, Earth & Atmospheric Sciences
North Carolina State University
Raleigh, NC, USA

RESEARCH

Peer-Reviewed Publications (*denotes student co-author)

1. Purpura, S.M.*, **C.E. Davenport**, MD. Eastin, K.E. McKeown*, and R.R. Riggin*, 2023: Environmental Evolution of Supercell Thunderstorms Interacting with the Appalachian Mountains. *Weather and Forecasting*, 179 – 198. doi: 10.1175/WAF-D-22-0115.1
2. Handlos, Z., **C.E. Davenport**, and D. Kopacz, 2022: The "State" of Active Learning in the Atmospheric Sciences: Strategies Instructors Use and Directions for Future Research, *Bulletin of the American Meteorological Society*, E1197 – E1212. doi: 10.1175/BAMS-D-20-0239.1
3. **Davenport, C.E.**, 2021: Environmental Evolution of Long-Lived Supercell Thunderstorms in the Great Plains. *Weather and Forecasting*, **36**, 2187 – 2209. doi: 10.1175/WAF-D-21-0042.1
4. Gropp, M.E.* and **C.E. Davenport**, 2021: A Python-Based Tracking Algorithm for Coarse Temporal Resolution WRF-Simulated Supercells, *Journal of Atmospheric and Oceanic Technology*, **38**, 1551 – 1559. doi: 10.1175/JTECH-D-20-0122.1
5. **Davenport, C.E.**, and A.J. French, 2020: The Fundamentals in Meteorology Inventory: Validation of a Tool Assessing Basic Meteorological Conceptual Understanding. *Journal of Geoscience Education*, **68**, 152 – 167. doi: 10.1080/10899995.2019.1629193.
6. Magee, K.M.* and **C.E. Davenport**, 2020: An Observational Analysis Quantifying the Distance of Supercell-Boundary Interactions in the Great Plains. *Journal of Operational Meteorology*, **8**, 15 – 38.
7. **Davenport, C.E.**, C.L. Ziegler, and M.I. Biggerstaff, 2019: Creating a More Realistic Idealized Supercell Thunderstorm Evolution via Incorporation of Base-

State Environmental Variability. *Monthly Weather Review*, **147**, 4177 – 4198. doi: 10.1175/MWR-D-18-0447.1

8. **Davenport, C.E.**, 2019: Using Worked Examples to Improve Student Understanding of Atmospheric Dynamics. *Bulletin of the American Meteorological Society*, **100**, 1653 – 1664. doi: 10.1175/BAMS-D-18-0226.1
9. Sherburn, K.D., M.D. Parker, **C.E. Davenport**, R.A. Sirico*, J.L. Blaes, B. Black, S.E. McLamb, M.C. Mugrage, and R.M. Rackliffe, 2019: Partnering Research, Education, and Operations via a Cool Season Severe Weather Soundings Program. *Bulletin of the American Meteorological Society*, **100**, 307 – 320. doi: 10.1175/BAMS-D-17-0186.1
10. Gropp, M.E.* and **C.E. Davenport**, 2018: The Impact of the Nocturnal Transition on the Lifetime and Evolution of Supercell Thunderstorms in the Great Plains. *Weather and Forecasting*, **33**, 1045 – 1061. doi: 10.1175/WAF-D-17-0150.1
11. **Davenport, C.E.**, 2018: Evolution in Student Perceptions of a Flipped Classroom in a Computer Programming Course. *Journal of College Science Teaching*, **47**, 30 – 35.
12. **Davenport, C.E.** and M.D. Parker, 2015b: Impact of Environmental Heterogeneity on the Dynamics of a Dissipating Supercell Thunderstorm. *Monthly Weather Review*, **143**, 4244 – 4277. doi: 10.1175/MWR-D-15-0072.1.
13. **Davenport, C.E.** and M.D. Parker, 2015a: Observations of the 9 June 2009 Dissipating Supercell from VORTEX2. *Weather and Forecasting*, **30**, 368 – 388. doi: 10.1175/WAF-D-14-00087.1.
14. **Davenport, C.E.,** C.S. Wohlwend, and T.L. Koehler, 2015: Motivation for and Development of a Standardized Introductory Meteorology Assessment Exam. *Bulletin of the American Meteorological Society*, **96**, 305 – 312. doi: 10.1175/BAMS-D-13-00157.1.
15. **Letkewicz, C.E.**, A.J. French, and M.D. Parker, 2013: Base-State Substitution: An Idealized Modeling Technique for Approximating Environmental Variability. *Monthly Weather Review*, **139**, 3062 – 3086. doi: 10.1175/MWR-D-12-00200.1.
16. **Letkewicz, C.E.** and M.D. Parker, 2011: Impact of Environmental Variations on Simulated Squall Lines Interacting with Terrain. *Monthly Weather Review*, **139**, 3163 – 3183. doi: 10.1175/2011MWR3635.1.
17. **Letkewicz, C.E.** and M.D. Parker, 2010: Forecasting the Maintenance of Mesoscale Convective Systems Crossing the Appalachian Mountains. *Weather and Forecasting*, **25**, 1179 – 1195. doi: 10.1175/2010WAF2222379.1.

Professional Conference Presentations and Proceedings (since 2013; *denotes student co-author)

1. **Davenport, C.E.**, 2023: Idealized Simulations of Changes in Supercell Morphology Following the Nocturnal Transition. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 14-15 April. Abstracts available at: https://sites.google.com/view/sawcworkshop/abstracts
2. Greco, J.*, and **C.E. Davenport**, 2023: Idealized Simulation of Supercell Thunderstorm Interactions Near Stationary Boundaries. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 14-15 April. Abstracts available at: https://sites.google.com/view/sawcworkshop/abstracts
3. Riggin, R.*, **C.E. Davenport**, M. Eastin, S. Purpura*, K. McKeown*, and B. Katona, 2023: Idealized Supercell Thunderstorms Interacting with the Appalachian Mountains. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 14-15 April. Abstracts available at: https://sites.google.com/view/sawcworkshop/abstracts
4. Twohey, L.*, and **C.E. Davenport**, 2023: Evaluating the Sensitivity of Supercell Thunderstorm Behavior near Complex Terrain in the Central and Southern Appalachians Using Idealized Simulations. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 14-15 April. Abstracts available at: https://sites.google.com/view/sawcworkshop/abstracts
5. Barlow, M., **C.E. Davenport**, W.J. Flynn, Z.J. Handlos, A.M. Klees, and E.D. Mullens, 2023: What Does a Modern Atmospheric Dynamics Course Look Like? Part II: Curricula and Assessments. *32nd Conference on Education*, American Meteorological Society Annual Meeting, 6.2, AMS, 8-12 January 2023, Denver, CO. Abstract available at: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/421240
6. Barlow, M., **C.E. Davenport**, W.J. Flynn, Z.J. Handlos, A.M. Klees, and E.D. Mullens, 2023: What Does a Modern Atmospheric Dynamics Course Look Like? Part I: Course Content. *32nd Conference on Education*, American Meteorological Society Annual Meeting, 6.2A, AMS, 8-12 January 2023, Denver, CO. Abstract available at: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/420276
7. **Davenport, C.E.**, Z.J. Handlos, and J. A. Knox, 2023: Building a Community of Atmospheric Dynamics Educators to Effect Positive Change in Instruction. *32nd Conference on Education*, American Meteorological Society Annual Meeting, 15.2, AMS, 8-12 January 2023, Denver, CO. Abstract available at: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/418316
8. Decker, L.* and **C.E. Davenport**, 2023: Quantifying Spatial Thinking Abilities in Meteorology Students Across the Curriculum. *32nd Conference on Education*, American Meteorological Society Annual Meeting, poster 69, AMS, 8-12 January

2023, Denver, CO. Abstract available at: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/414912

9. Coffer, B.E., M.D. Parker, and **C.E. Davenport**, 2022: How Quickly Do Supercell Low-Level Mesocyclones Respond to Changes in Their Environment? *30th Conference on Severe Local Storms*, poster 64, AMS, 24-28 October 2022, Santa Fe, NM. Abstract available at: https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/407119
10. Riggin, R.R.*, **C.E. Davenport**, M.D. Eastin, K.E. McKeown*, S.M. Purpura*, and B. Katona, 2022: Idealized Simulations of Supercells Thunderstorms Interacting with the Appalachian Mountains. *30th Conference on Severe Local Storms*, poster 74, AMS, 24-28 October 2022, Santa Fe, NM. Abstract available at: https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/407306
11. Eastin, M.D., S.M. Purpura*, K.E. McKeown*, R.R. Riggin*, and **C.E. Davenport**, 2022: Synoptic-Mesoscale Conditions Associated with Supercells That Cross the Central and Southern Appalachians. *30th Conference on Severe Local Storms*, poster 73, AMS, 24-28 October 2022, Santa Fe, NM. Abstract available at: https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/407329
12. Eastin, M.D., K.E. McKeown*, S.M. Purpura*, R.R. Riggin*, and **C.E. Davenport**, 2022: Radar-based Evolution of Supercells crossing Prominent Ridges in the Central and Southern Appalachians. *30th Conference on Severe Local Storms*, poster 72, AMS, 24-28 October 2022, Santa Fe, NM. Abstract available at: https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/407333
13. Decker, L.* and **C.E. Davenport**, 2022: Quantifying Spatial Thinking Abilities in Meteorology Students Across the Curriculum. *Earth Educators' Rendezvous*, National Association of Geoscience Teachers, Twin Cities, MN, 11-15 July 2022. Abstract available at: https://serc.carleton.edu/earth_rendezvous/2022/program/posters/friday/249481.html
14. Greco, J.* and **C.E. Davenport**, 2022: Comparing High-Shear, Low-CAPE Supercell Weather Events in the Southeastern United States vs. the Great Plains. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.
15. Riggin, R.*, **C.E. Davenport**, and M.D. Eastin, 2022: A Numerical Study Investigating Idealized Supercell Thunderstorms Interacting with the Appalachian Mountains. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 25-26 March. Abstracts available at: https://vlab.noaa.gov/web/southern-appalachian-weather-and-climate-workshop/poster-presenter-abstracts

16. **Davenport, C.E.**, 2022: Environmental Evolution of Long-Lived Supercells in the Great Plains. *Southern Appalachian Weather and Climate Workshop*, Asheville, NC, 25-26 March. Abstracts available at: https://vlab.noaa.gov/web/southern-appalachian-weather-and-climate-workshop/oral-presenter-abstracts

17. **Davenport, C.E.**, 2022: Environmental Evolution of Long-Lived Supercells in the Great Plains. *19th Conference on Mesoscale Processes, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/392731.

18. **Davenport, C.E.**, 2022: The Benefits and Challenges of Paired Programming in a Meteorological Computer Applications Course. *31st Conference on Education, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/392743.

19. Barlow, M., **C.E. Davenport**, W.J. Flynn, Z.J. Handlos, A.M. Klees, and E. Mullens, 2022: How Can We Make Teaching Atmospheric Dynamics More Dynamic? *31st Conference on Education, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/398880.

20. Eastin, M.D., K.E. McKeown*, S.M. Purpura*, R. Riggin*, and **C.E. Davenport**, 2022: Radar-Based Evolution of Supercells Crossing Prominent Ridges in the Central and Southern Appalachians. *19th Conference on Mesoscale Processes, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January, Poster 558. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/390963.

21. Eastin, M.D., S.M. Purpura*, K.E. McKeown*, R. Riggin*, and **C.E. Davenport**, 2022: Synoptic-Mesoscale Conditions Associated with Supercells that Cross the Central and Southern Appalachians. *19th Conference on Mesoscale Processes, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January, Poster 559. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/390965.

22. Riggin, R.*, **C.E. Davenport**, Eastin, M.D., S.M. Purpura*, and K.E. McKeown*, 2022: A Numerical Study Investigating Idealized Supercell Thunderstorms Interacting with the Appalachian Mountains. *19th Conference on Mesoscale Processes, 102nd Annual Meeting of the American Meteorological Society (virtual)*,

American Meteorological Society, 23-27 January, Poster 562. Abstract available at: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/392794.

23. Brown, M.C., C.J. Nowotarski, **C.E. Davenport**, J.M. Peters, 2022: Impacts of the Early Evening Transition on Updraft Forcing and Evolution in Idealized Simulations of High-Shear, Low-CAPE Supercells. *19th Conference on Mesoscale Processes, 102nd Annual Meeting of the American Meteorological Society (virtual)*, American Meteorological Society, 23-27 January, Poster 561. Abstract available at https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/392600.

24. Riggin, R.*, **C.E. Davenport**, and M.D. Eastin, 2021: A Numerical Study Investigating Idealized Supercell Thunderstorms Interacting with the Appalachian Mountains. *Student and Early Career Scientist Virtual Severe Local Storms Conference*, American Meteorological Society, 4-5 November 2021.

25. McKeown, K.*, **C.E. Davenport**, S. Purpura*, and M.D. Eastin, 2021: Radar Characteristics of Observed Supercell Thunderstorms Interacting with the Appalachian Mountains. *National Weather Association Annual Meeting,* National Weather Association, Paper 118. Abstract available at: https://nwas.org/wp-content/uploads/2021/07/NWA-46th-Annual-Meeting-Poster-Presentation-Abstracts-2.pdf

26. Purpura, S.*, **C.E. Davenport**, K. McKeown*, and M.D. Eastin, 2021: Environmental Evolution of Supercells Interacting with the Appalachian Mountains. *A National Weather Association Annual Meeting,* National Weather Association, Paper 136. Abstract available at: https://nwas.org/wp-content/uploads/2021/07/NWA-46th-Annual-Meeting-Poster-Presentation-Abstracts-2.pdf

27. Riggin, R.*, **C.E. Davenport**, and M.D. Eastin, 2021: Idealized Simulations of Supercell Thunderstorms Interacting with the Appalachian Mountains. *National Weather Association Annual Meeting,* National Weather Association, Paper 138. Abstract available at: https://nwas.org/wp-content/uploads/2021/07/NWA-46th-Annual-Meeting-Poster-Presentation-Abstracts-2.pdf

28. Hochstatter, L.N.* and **C.E. Davenport**, , 2021: The Temporal Evolution of Tornadic vs. Non-Tornadic High Shear Low CAPE Environments. *National Weather Association Annual Meeting,* National Weather Association, Paper 78. Abstract available at: https://nwas.org/wp-content/uploads/2021/07/NWA-46th-Annual-Meeting-Poster-Presentation-Abstracts-2.pdf

29. Handlos, Z., **C.E. Davenport**, and D. Kopacz, 2021: The State of Active Learning in the Atmospheric Sciences: Strategies Instructors Use and Directions for Future Research. *Earth Educators' Rendezvous 2021 (virtual)*, National Association of

Geoscience Teachers. Abstract available at: https://serc.carleton.edu/earth_rendezvous/2021/program/talks/session6/242648.html.

30. **Davenport, C.E.**, 2021: Incorporating Pair Programming in a Meteorological Computer Applications Course. *Earth Educators' Rendezvous 2021 (virtual)*, National Association of Geoscience Teachers. Abstract available at: https://serc.carleton.edu/earth_rendezvous/2021/program/posters/wednesday/session1/242737.html.
31. Decker, L.* and **C.E. Davenport**, 2021: Case Study of the EF-4 Tornado Produced in the 2 March 2012 Tornado Outbreak. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.
32. Hochstatter, L.* and **C.E. Davenport**, 2021: The Temporal Evolution of Tornadic vs. Non-tornadic HSLC Environments. *20th Annual Student Conference, 101st American Meteorological Society Annual Meeting*, American Meteorological Society, Paper #111. Abstract available at: https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/385213.
33. McKeown, K.E.*, **C.E. Davenport**, S.M. Purpura*, and M.D. Eastin, 2021: Radar Characteristics of Observed Supercell Thunderstorms Interacting with the Appalachian Mountains. *20th Annual Student Conference, 101st American Meteorological Society Annual Meeting*, American Meteorological Society, Paper #109. Abstract available at: https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/385001.
34. Purpura, S.M.*, **C.E. Davenport**, K.E. McKeown*, and M.D. Eastin, 2021: Environmental Evolution of Supercells Interacting with the Appalachian Mountains. *20th Annual Student Conference, 101st American Meteorological Society Annual Meeting*, American Meteorological Society, Paper #110. Abstract available at: https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/385061.
35. Handlos, Z., **C.E. Davenport**, and D. Kopacz, 2021: The "State" of Active Learning Implementation in the Atmospheric Sciences: What Strategies Do Instructors Use and What Can We Do to Improve?" *30th Conference on Education, 101st American Meteorological Society Annual Meeting (Virtual)*, American Meteorological Society, Paper 13.6. Abstract available at: https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/382056.
36. **Davenport, C.E.** and M. Gropp*, 2020: "Comparing Idealized Simulations of Supercell Thunderstorms in Current vs. "Business as Usual" Future Environments. *American Geophysical Union Fall Meeting (Virtual),* American

Geophysical Union, Paper A160-03. Abstract available at: https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/661446.

37. Hochstatter, L.* and **C.E. Davenport**, 2020: The Temporal Evolution of Severe vs. Non-Severe High Shear Low CAPE Environments. *American Geophysical Union Fall Meeting (Virtual),* American Geophysical Union, Paper A121-0008. Abstract available at: https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/684653.
38. McKeown, K.*, **C.E. Davenport**, S. Purpura*, and M.D. Eastin, 2020: Radar Characteristics of Observed Supercell Thunderstorms Interacting with the Appalachian Mountains. *American Geophysical Union Fall Meeting (Virtual),* American Geophysical Union, Paper A122-0008. Abstract available at: https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/696847.
39. Purpura, S.*, **C.E. Davenport**, K. McKeown*, and M.D. Eastin, 2020: Environmental Evolution of Supercells Interacting with the Appalachian Mountains. *American Geophysical Union Fall Meeting (Virtual),* American Geophysical Union, Paper A122-0009. Abstract available at: https://agu.confex.com/agu/fm20/meetingapp.cgi/Paper/697825.
40. McKeown, K.E.*, **C.E. Davenport**, S.M. Purpura*, and M.D. Eastin, 2020: Radar Characteristics of Observed Supercell Thunderstorms Interacting with the Appalachian Mountains. *Midwest Student Conference on Atmospheric Research (Virtual)*, University of Illinois Urbana-Champaign Department of Atmospheric Sciences. Program booklet available at https://atmos.illinois.edu/system/files/2020-09/FULL_PROGRAM_MSCAR2020_6.pdf.
41. Purpura, S.M.*, **C.E. Davenport**, K.E. McKeown*, and M.D. Eastin, 2020: Environmental Evolution of Supercells Interacting with the Appalachian Mountains. *Midwest Student Conference on Atmospheric Research (Virtual)*, University of Illinois Urbana-Champaign Department of Atmospheric Sciences. Program booklet available at https://atmos.illinois.edu/system/files/2020-09/FULL_PROGRAM_MSCAR2020_6.pdf.
42. **Davenport, C.E.**, Z.J. Handlos, and D. Kopacz, 2020: Characterizing Instructional Strategies within Atmospheric Science Courses. *Annual Meeting of the North Carolina Academy of Sciences*. Presentation fully prepared but not presented due to COVID-related issues.
43. Handlos, Z., **C.E. Davenport**, and D. Kopacz, 2020: Characterizing Instructional Strategies within Atmospheric Science Courses. *29th Conference on Education, 100th American Meteorological Society Annual Meeting*, Boston, MA, American Meteorological Society, Paper 2.5. Extended abstract available at https://ams.confex.com/ams/2020Annual/meetingapp.cgi/Paper/366986.

44. Gropp, M.* and **C.E. Davenport**, 2020: The Impacts of "Business as Usual" Climate Change on Supercell Thunderstorms. *Severe Local Storms Symposium, 100th American Meteorological Society Annual Meeting*, Boston, MA, American Meteorological Society, Paper 2.6. Extended abstract available at https://ams.confex.com/ams/2020Annual/meetingapp.cgi/Paper/367204.

45. Ising, J.* and **C.E. Davenport**, 2019: Terrain Influence on Supercell Thunderstorms within the Appalachian Mountains. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.

46. Gropp, M.E.* and **C.E. Davenport**, 2019: Storm-Scale Impacts of "Business as Usual" Climate Change on Supercell Thunderstorms. *Earth System Observations and Modeling Graduate Symposium*, Fairfax, VA, Center for Ocean-Land-Atmosphere Studies, George Mason University.

47. **Davenport, C.E.**, 2019: Engaging Students with Theory and Real-World Data to Enhance Learning through Worked Examples. *28th Symposium on Education, 99th American Meteorological Society Annual Meeting*, Phoenix, AZ, American Meteorological Society, Paper 1.6. Extended abstract available at https://ams.confex.com/ams/2019Annual/meetingapp.cgi/Paper/350918.

48. **Davenport, C.E.**, 2018: Environmental Evolution of Long-Lived Supercells. *29th Conference on Severe Local Storms*, Stowe, VT, American Meteorological Society, Paper 8.2. Extended abstract available at https://ams.confex.com/ams/29SLS/meetingapp.cgi/Paper/348358.

49. Gropp, M.E.* and **C.E. Davenport**, 2018: A Python-Based Tracking Algorithm for Coarse Temporal Resolution WRF-Simulated Supercells. *29th Conference on Severe Local Storms*, Stowe, VT, American Meteorological Society, Paper 130. Extended abstract available at https://ams.confex.com/ams/29SLS/meetingapp.cgi/Paper/348476.

50. Mansfield, A.D.* and **C.E. Davenport**, 2018: The Temporal Evolution of Tornadic and Non-Tornadic VORTEX2 Environments. *29th Conference on Severe Local Storms*, Stowe, VT, American Meteorological Society, Paper 59. Extended abstract available at https://ams.confex.com/ams/29SLS/meetingapp.cgi/Paper/348605.

51. Sirico, R.A.* and **C.E. Davenport**, 2018: Assessing Spatial and Temporal Changes in the Environment on the Evolution of Convection in a High Shear, Low Instability Event in North Carolina. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.

52. **Davenport, C.E.**, 2018: Using Worked Examples in an Upper-Level Meteorology Class to Enhance Student Learning. *114th Annual Meeting of the North Carolina*

Academy of Science, Raleigh, NC, North Carolina Academy of Science. Meeting website: https://www.waketech.edu/about-wake-tech/divisions/mathematics-sciences-engineering/ncas.

53. **Davenport, C.E.** and A.J. French, 2018: The Fundamentals in Meteorology Inventory: Results from the Development of a New Meteorology Education Tool. *27th Symposium on Education, 98th American Meteorological Society Annual Meeting*, Austin, TX, American Meteorological Society, Paper 5.5. Extended abstract available at https://ams.confex.com/ams/98Annual/webprogram/Paper328680.html.

54. **Davenport, C.E.**, 2018: Using Worked Examples to Teach Atmospheric Dynamics. *27th Symposium on Education, 98th American Meteorological Society Annual Meeting*, Austin, TX, American Meteorological Society, Paper 8.8. Extended abstract available at https://ams.confex.com/ams/98Annual/webprogram/Paper328667.html.

55. **Davenport, C.E.**, M.I. Biggerstaff, and C.L. Ziegler, 2017: Qualitative and Quantitative Comparisons of a Base-State Substitution Simulation with Dual-Doppler Observations of the 29 May 2012 Kingfisher Supercell. *17th Conference on Mesoscale Processes*, San Diego, CA, American Meteorological Society, Paper 10.1. Extended abstract available at https://ams.confex.com/ams/17MESO/webprogram/Paper319728.html.

56. Gropp, M.* and **C.E. Davenport**, 2017: Assessing the Impact of the Evening Transition on the Evolution and Lifetime of Supercell Thunderstorms in the Great Plains. *17th Conference on Mesoscale Processes*, San Diego, CA, American Meteorological Society, Paper 46. Extended abstract available at https://ams.confex.com/ams/17MESO/webprogram/Paper319916.html.

57. Ledbetter, C.J.* and **C.E. Davenport**, 2017: Analyzing Supercell Intensity Changes in a Heterogeneous Environment in the VORTEX2 Supercell Pair in Southeastern Colorado on 11 June 2009. *17th Conference on Mesoscale Processes*, San Diego, CA, American Meteorological Society, Paper 45. Extended abstract available at https://ams.confex.com/ams/17MESO/webprogram/Paper319804.html.

58. Magee, K.M.* and **C.E. Davenport**, 2017: An Observational Study on Quantifying the Distance to Supercell-Boundary Interactions in the Great Plains. *17th Conference on Mesoscale Processes*, San Diego, CA, American Meteorological Society, Paper 38. Extended abstract available at https://ams.confex.com/ams/17MESO/webprogram/Paper319834.html.

59. **Davenport, C.E.**, 2017: The Fundamentals in Meteorology Inventory: Results from the Development of a New Meteorology Education Tool. *114th Annual*

Meeting of the North Carolina Academy of Science, High Point, NC, North Carolina Academy of Science. Abstract available at http://www.highpoint.edu/ncas2017/files/2017/03/book-of-abstracts.pdf.

60. **Davenport, C.E.**, M.I. Biggerstaff, and C.L. Ziegler, 2016: Assessment of the Base-State Substitution Idealized Modeling Technique. *28th Conference on Severe Local Storms*, Portland, OR, American Meteorological Society, Paper 129. Extended abstract available at https://ams.confex.com/ams/28SLS/webprogram/Paper300698.html.
61. Gropp, M.* and **C.E. Davenport**, 2016: Assessing the Impact of the Nocturnal Transition on the Lifetime and Evolution of Supercell Thunderstorms in the Great Plains. *28th Conference on Severe Local Storms*, Portland, OR, American Meteorological Society, Paper 32. Extended abstract available at https://ams.confex.com/ams/28SLS/webprogram/Paper300965.html.
62. Magee, K.M.* and **C.E. Davenport**, 2016: Quantifying the Distance to Supercell-Boundary Interactions. *28th Conference on Severe Local Storms*, Portland, OR, American Meteorological Society, Paper 33. Extended abstract available at https://ams.confex.com/ams/28SLS/webprogram/Paper300810.html.
63. Bunker, E.*, C. Ledbetter*, **C.E. Davenport**, and M.D. Eastin, 2016: The Interaction of Supercell Thunderstorms with the Appalachian Mountains. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.
64. **Davenport, C.E.**, 2016: Using Worked Examples to Improve Student Understanding and Problem-Solving Skills. *25th Symposium on Education, 96th American Meteorological Society Annual Meeting*, New Orleans, LA, American Meteorological Society, Paper 6.7. Extended abstract available at https://ams.confex.com/ams/96Annual/webprogram/Paper280167.html.
65. **Davenport, C.E.**, 2015: Addressing the Efficacy of the Base-State Substitution Technique: A Comparison of Simulations. *16th Conference on Mesoscale Processes*, Boston, MA, American Meteorological Society, Paper 25. Extended abstract available at https://ams.confex.com/ams/16Meso/webprogram/Paper274326.html.
66. Ledbetter, C.*, E. Bunker*, **C.E. Davenport**, and B.I. Magi, 2015: Arduino Weather Station. *UNC Charlotte Undergraduate Research Conference*, Charlotte, NC.
67. **Davenport, C.E.**, A.J. French, T.L. Koehler, and D.R. Vollmer, 2015: The Fundamentals in Meteorology Inventory: Motivation and Development of a New Meteorology Education Tool. *24th Symposium on Education, 95th American Meteorological Society Annual Meeting*, Phoenix, AZ, American Meteorological

Society, Paper 7.2. Extended abstract available at https://ams.confex.com/ams/95Annual/webprogram/Paper258622.html.

68. **Davenport, C.E.**, C.S. Wohlwend, and T.L. Koehler, 2013: The Fundamentals in Meteorology Inventory. *U.S. Air Force Academy Scholarship of Teaching and Learning Forum*, Colorado Springs, CO.

69. **Letkewicz, C.E.** and M.D. Parker, 2012: Idealized Simulations of Supercell Demise Based on VORTEX2 Observations. *26th Conference on Severe Local Storms*, Nashville, TN, American Meteorological Society, Paper 167. Extended abstract available at https://ams.confex.com/ams/26SLS/webprogram/Paper211728.html.

70. **Letkewicz, C.E.** and M.D. Parker, 2011: Comparison of Supercell Maintenance and Dissipation Processes Observed During VORTEX2. *14th Conference on Mesoscale Processes*, Los Angeles, CA, American Meteorological Society, Paper 24. Extended abstract available at https://ams.confex.com/ams/14Meso15ARAM/webprogram/Paper191044.html.

71. **Letkewicz, C.E.** and M.D. Parker, 2011: Idealized Simulations of Supercell Demise Based on VORTEX2 Observations. *14th Conference on Mesoscale Processes*, Los Angeles, CA, American Meteorological Society, Paper 4.3. Extended abstract available at https://ams.confex.com/ams/14Meso15ARAM/webprogram/Paper191043.html.

72. **Letkewicz, C.E.** and M.D. Parker, 2010: Supercell Dissipation Observed by VORTEX2 on 9 June 2009. *25th Conference on Severe Local Storms*, Denver, CO, American Meteorological Society, Paper P8.9. Extended abstract available at https://ams.confex.com/ams/25SLS/techprogram/paper_175916.htm.

73. Parker, M.D., A.J. French, **C.E. Letkewicz**, M.J. Morin, K. Rojowsky, D. Stark, and G.H. Bryan, 2009: Mobile Sounding Measurements of the Near-Storm Environment During VORTEX2. *5th European Conference on Severe Storms*, Landshut, Germany, European Meteorological Society, Paper 09.07. Extended abstract available at https://www.essl.org/ECSS/2009/preprints/P09-07-parker.pdf.

74. Parker, M.D., A.J. French, **C.E. Letkewicz**, M.J. Morin, K. Rojowsky, D. Stark, and G.H. Bryan, 2009: Mobile Sounding Measurements of the Near-Storm Environment During VORTEX2. *13th Conference on Mesoscale Processes*, Salt Lake City, UT, American Meteorological Society, Paper P1.3. Extended abstract available at https://ams.confex.com/ams/13Meso/techprogram/paper_154936.htm.

75. **Letkewicz, C.E.** and M.D. Parker, 2009: Mesoscale Convective Systems Crossing the Appalachian Mountains. *13th Conference on Mesoscale Processes*, Salt Lake

City, UT, American Meteorological Society, Paper 2.4. Extended abstract available at https://ams.confex.com/ams/13Meso/techprogram/paper_154952.htm.

76. **Letkewicz, C.E.** and M.D. Parker, 2008: An Observational Investigation of Mesoscale Convective Systems Crossing the Appalachian Mountains. *24th Conference on Severe Local Storms*, Savannah, GA, American Meteorological Society, Paper P4.7. Extended abstract available at https://ams.confex.com/ams/24SLS/techprogram/paper_141574.htm.

Grants Awarded

1. **Evaluating the Sensitivity of Supercell Thunderstorm Behavior Near Complex Terrain Using Idealized Simulations**
   UNC Charlotte Faculty Research Grant
   July 2023—June 2024
   $8,000
   Principal Investigator: **C.E. Davenport**
2. **Characterizing the Growth of Spatial Thinking Abilities Across Meteorology Courses**
   UNC Charlotte Scholarship of Teaching and Learning Grant
   January 2022—June 2023
   $10,090
   Principal Investigator: **C.E. Davenport**
3. **Characteristics and Evolution of Observed and Simulated Supercell Thunderstorms in the Central and Southern Appalachians**
   National Oceanic and Atmospheric Administration: Collaborative Science, Technology, and Applied Research
   June 2019—May 2024
   $429,089
   Principal Investigators: **C.E. Davenport** and M. Eastin (UNC Charlotte)
4. **Quantifying the Impact of Climate Change on the Characteristics and Local Environments of Supercell Thunderstorms**
   UNC Charlotte Faculty Research Grant
   January 2019—May 2020
   $8,000
   Principal Investigator: **C.E. Davenport**
5. **Using Worked Examples to Enhance Learning in an Upper-Level Meteorology Course**
   UNC Charlotte Scholarship of Teaching and Learning Grant
   January 2018—May 2019

$8,700
Principal Investigator: **C.E. Davenport**

6. **Measuring Thunderstorm Environment Variability in North Carolina**
   UNC Charlotte Faculty Research Grant
   January 2015—May 2016
   $5,814
   Principal Investigator: **C.E. Davenport**

TEACHING & INSTRUCTIONAL ACTIVITY

Courses Taught (UNC Charlotte only)

Semester	Course Title	Course Number	Enrollment
Spring 2023	Dynamic Meteorology I (3 cr)	METR 3250	18 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	14 undergrad
	Independent Study (3 cr)	GEOG 8005	1 grad
Fall 2022	Advanced Dynamic Meteorology (3 cr)	METR 4250/ESCI 5250	10 undergrad
	Teaching & Learning in the Geosciences (3 cr)	ESCI 6000/GEOG 6005/GEOG 8005	8 grad
Spring 2022	Dynamic Meteorology I (3 cr)	METR 3250	13 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	16 undergrad
	Independent Study (1 cr)	METR 4800	1 undergrad
Fall 2021	Advanced Dynamic Meteorology (3 cr)	METR 4250/ESCI 5250	9 undergrad
	Numerical Modeling of the Earth System (3 cr)	ESCI 6120/INES 8090	7 grad
	Independent Study (1 cr)	METR 4800	1 undergrad
Spring 2021	Dynamic Meteorology I (3 cr)	METR 3250	12 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	16 undergrad/1 grad
	Independent Study (3 cr)	METR 4800	1 undergrad
Fall 2020	Advanced Dynamic Meteorology (3 cr)	METR 4250/ESCI 5250	10 undergrad/2 grad
	Numerical Modeling of the Earth System (3 cr)	ESCI 6120/INES 8090	8 grad
Spring 2020	Dynamic Meteorology I (3 cr)	METR 3250	11 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	15 undergrad/3 grad
Spring 2019	Dynamic Meteorology I (3 cr)	METR 3250	8 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	15 undergrad/4 grad
	Independent Study (3 cr)	METR 4800	1 undergrad
Spring 2018	Dynamic Meteorology I (3 cr)	METR 3250	15 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	15 undergrad/2 grad
	Independent Study (3 cr)	METR 4800	1 undergrad
Fall 2017	Advanced Dynamic Meteorology (3 cr)	METR 4250	7 undergrad
	Numerical Modeling of the Earth System (3 cr)	ESCI 6000/INES 8090	5 grad
	Independent Study (3 cr)	METR 4800	1 undergrad
Spring 2017	Dynamic Meteorology I (3 cr)	METR 3250	10 undergrad
	Meteorological Computer Applications (3 cr)	METR 4105/ESCI 5105	15 undergrad
Spring 2016	Dynamic Meteorology I (3 cr)	METR 3250	14 undergrad
	Meteorological Computer Applications (3 cr)	METR 4000/ESCI 5000	10 undergrad/3 grad
	Independent Study (3 cr)	METR 4800	1 undergrad
Fall 2015	Advanced Dynamic Meteorology (3 cr)	METR 4250	14 undergrad
	Numerical Modeling of the Earth System (3 cr)	ESCI 6000/INES 8090	6 grad
Spring 2015	Dynamic Meteorology I (4 cr)	METR 3250	16 undergrad
	Independent Study (1 cr)	METR 4800	1 undergrad
Fall 2014	Advanced Dynamic Meteorology (3 cr)	METR 4250	8 undergrad

Students Advised

In Progress

Advisor

1. Matthew Gropp, Ph.D. Infrastructure and Environmental Systems,
   Fall 2017 – present (currently ABD; final defense anticipated Summer 2022).
   Dissertation: "Storm Scale Impacts of Business as Usual Climate Change on Supercell Thunderstorms"
2. Logan Twohey, Ph.D. Geography, Fall 2022 – present.
   Thesis: "Evaluating the Sensitivity of Supercell Thunderstorms Interacting with the Appalachian Mountains Using Idealized Simulations"
3. Jasen Greco, MS. Earth Sciences, Fall 2022 – present.
   Topic: "Idealized Simulations of Supercells Interacting with Stationary Boundaries."

Completed

Advisor

1. Lauren Decker, M.S. Earth Sciences, Fall 2021 – Spring 2023.
   Thesis: "Characterizing the Growth in Spatial Thinking Abilities in Meteorology Students Across the Curriculum"
2. Roger Riggin, M.S. Earth Sciences, Fall 2020 – Fall 2022.
   Thesis: "Idealized Simulations of Supercell Thunderstorms Interacting with the Appalachian Mountains"
3. Jasen Greco, Independent study, B.S. Meteorology, Spring 2022.
   Topic: "Comparison of High-Shear, Low-CAPE Severe Events in the Great Plains and Southeastern U.S.
4. Jasen Greco, Independent study, B.S. Meteorology, Fall 2021.
   Topic: "Case Study of the 6 February 2020 Charlotte Region Tornadoes"
5. Lauren Decker, Independent study, B.S. Meteorology, Spring 2021.
   Topic: "Case Study of the 2 March 2012 Southern Indiana Tornado Outbreak"
6. Lindsay Hochstatter, M.S. Earth Sciences, Fall 2019 – Spring 2021.
   Thesis: "The Temporal Evolution of Tornadic vs. Non-Tornadic High Shear Low CAPE Environments"

7. Katie McKeown, M.S. Earth Sciences, Fall 2019 – Spring 2021.
   Thesis: "Radar Characteristics of Observed Supercell Thunderstorms Interacting with the Appalachian Mountains"
8. Sarah Purpura, M.S. Earth Sciences, Fall 2019 – Spring 2021.
   Thesis: "Environmental Evolution of Supercells Interacting with the Appalachian Mountains"
9. Luke Rosamond, B.S. Meteorology, Summer 2020.
   Topic: "Evaluation of Tornadoes in Hurricane Dorian"
10. Richard Sirico, M.S. Earth Sciences, Fall 2018 – Spring 2020.
    Thesis: "Investigation of the Environmental Influences Related to the Precipitation Structure of Supercell Thunderstorms and Their Evolution"
11. Austin Mansfield, M.S. Earth Sciences, Fall 2017 – Spring 2019.
    Thesis: "The Temporal Evolution of Tornadic and Non-tornadic VORTEX2 Near-storm Environments"
12. Jan Ising, Honors Thesis, B.S. Meteorology, Fall 2018 – Spring 2019.
    Thesis: "Investigating Causes for Crossing Potential of Supercell Thunderstorms Within the Appalachian Mountains"
13. Cody Ledbetter, M.S. Earth Sciences, Fall 2016 – Fall 2018.
    Thesis: "Analyzing Supercell Intensity Changes in a Heterogeneous Environment in the VORTEX2 Supercell Pair in Southeastern Colorado on 11 June 2009"
14. Kathleen Magee, M.S. Earth Sciences, Fall 2015 – Spring 2017.
    Thesis: "An Observational Study on Quantifying the Distance of Supercell-Boundary Interactions in the Great Plains"
15. Matthew Gropp, M.S. Earth Sciences, Fall 2015 – Spring 2017.
    Thesis: "Assessing the Impact of the Evening Transition on the Evolution and Lifetime of Supercell Thunderstorms in the Great Plains"
16. Richard Sirico, Independent Study, B.S. Meteorology, Fall 2017 – Spring 2018.
    Topic: "Assessing Spatial and Temporal Changes in the Environment on the Evolution of Convection in a High Shear, Low Instability Event in North Carolina"
17. Cody Ledbetter, Honors Thesis, B.S. Meteorology, Fall 2015 – Spring 2016.
    Thesis: "The Interaction of Supercell Thunderstorms with the Appalachian Mountains"
18. Cody Ledbetter, Independent Study, B.S. Meteorology, Spring 2015.
    Topic: "Arduino Weather Station"

Committee Member

1. Christian Boyer, Ph.D. Earth and Ecosystem Science (Central Michigan University; Committee Chair, J. Keeler), graduated Spring 2023.
   Dissertation: "Idealized Simulations of Destabilization and Convection Initiation in Coastal Regions"
2. Xiaoyu Bai, Ph.D. Infrastructure and Environmental Systems (J. Scheff, Committee Chair), graduated May 2022.
   Dissertation: "Energetic Theory and Hadley Cells at a Seasonal Scale: How Will ITCZ Respond to a Warming Climate"
3. Matt Toadvine, M.S. Earth Sciences (M. Eastin, Committee Chair), graduated May 2022.
   Thesis: "Comparing the Tornadic Environments Among East Coast and Gulf Coast Landfalling Tropical Cyclones"
4. Maya Robinson, M.S. Earth Sciences (J. Scheff, Committee Chair), graduated December 2021.
   Thesis: "Constraining the Northern Hemisphere Mid-Latitude Jet Response to Climate Change in CMIP6 Using the Arctic Minus Subtropical Warming"
5. Scott Dennstaedt, Ph.D. Infrastructure and Environmental Systems (M. Eastin, Committee Chair), graduated May 2021.
   Dissertation: "Targeted Approach to Providing Weather Guidance to General Aviation Pilots Based on Estimated Time of Departure and Personal Weather Minimums"
6. Anna Stuck, M.S. Earth Sciences (M. Eastin, Committee Chair), graduated December 2020.
   Thesis: "Development of a Forecasting Technique for the Charlotte Urban Heat Island Intensity"
7. Rachel Cucinotta, M.S. Earth Sciences (M. Eastin, Committee Chair), graduated August 2019.
   Thesis: "Diagnosing Thunderstorm Induced Power Outages with the Rapid Refresh Model"
8. Stephanie Edwards, M.S. Earth Sciences (B. Magi, Committee Chair), graduated May 2018.
   Thesis: "Analyzing the Use of Satellite Microwave Remote Sensing Data for Lightning Estimations in the Southeastern United States"
9. Ryan Hubler, M.S. Earth Sciences (M. Eastin, Committee Chair), graduated May 2016.

Thesis: "Initiation and Enhancement of Local Precipitating Convection by the Charlotte Urban Heat Island"

10. Thomas Winesett, M.S. Earth Sciences (B. Magi, Committee Chair), graduated May 2015.
    Thesis: "Using Microwave Remote Sensing to Estimate Cloud-to-Ground Lightning Over Land for the Contiguous United States"
11. Brandy Stimac, M.S. Earth Sciences (M. Eastin, Committee Chair), graduated May 2015.
    Thesis: "Structural Variation of Offshore Supercells in Outer Rainbands of Hurricane Rita (2005)"

SERVICE

Public and Community Service

Invited Presentations

1. American Meteorological Society Student Conference (January 2023): "Developing and Inspiring the Next Generation of Scientists: An Overview of Research in Teaching and Learning in the Atmospheric Sciences"
2. Department of Atmospheric Sciences, Texas A&M University (March 2022): "Be the Storm: Perspective Taking and Quantifying Environmental Changes Experienced by Long-Lived Supercells"
3. Department of Mathematical Sciences, University of Wisconsin-Milwaukee (October 2020): "Environmental Evolution of Long-Lived Supercell Thunderstorms"
4. Department of Oceanography, United States Naval Academy (February 2020): "Enhancing Student Success in Quantitatively-Intensive Courses Through Worked Examples"
5. Department of Marine, Earth, & Atmospheric Sciences, North Carolina State University (August 2018): "Embracing an Evidence-Based Approach to Teaching Quantitatively-Intensive Geoscience Courses"
6. Carolinas Aviation Museum Girls STEM Camp (April 2018; December 2018): "My Journey to STEM"
7. Cabarrus-Kannapolis Early College High School (October 2017): "Hurricanes"
8. Greensboro Science Café (September 2017): "Severe Thunderstorms"
9. Charlotte Weather Fest (March 2015, 2016, 2017, 2018, 2019): "Severe Thunderstorms"

10. Department of Atmospheric Science, Colorado State University (March 2014): **"**Base-State Substitution: An Idealized Modeling Technique for Approximating Environmental Heterogeneity"
11. Females Learning About Science Here, Discovery High School, Colorado Springs, Colorado (January 2014): "How Weather Works"

Television Interviews

1. Spectrum News (April 2017): Potential benefits of installing a new National Weather Service radar in Charlotte
2. Time Warner Cable News (January 2017): Increase in tornado deaths in 2017

Invited Guest Lectures

1. UNC Charlotte Camps on Campus (June 2015): "Storm Chasers!"

   Note: This was a week-long camp, wherein I gave numerous lectures and led daily activities designed for middle-school students
2. UNC Charlotte INES 8102 Infrastructure Systems (September 2014): "Structures and Severe Weather"
3. UNC Charlotte ESCI 6600 Earth Sciences Seminar (September 2014): "Supercell Evolution in a Temporally Varying Environment"

Other

1. *Panel Participant*, American Meteorological Society Webinar on Graduate School Applications (November 2022)
2. *Student Presentation and Poster Judge*, 30th Conference on Severe Local Storms (October 2022)
3. *Mentor*, National Weather Service Virtual Speed Mentoring Event (April 2022)
4. *Student Presentation Judge*, Final Project Presentations, MEA 507: Discipline-Based Education Research in the Geosciences, North Carolina State University (May 2021)
5. *Panel Participant*: Promoting Geoscience Research, Education, and Success Workshop, Charlotte, North Carolina (October 2015)
6. *Student Poster Judge*, Introduction to Meteorological Remote Sensing Final Project, North Carolina State University (April 2015)
7. *Volunteer*, UNC Charlotte STEM Day (October 2014)

8. *Volunteer*, Girls in the Middle Conference, Otero Junior College, La Junta, Colorado (March 2013, 2014)

University, College, and Departmental Service

1. **Committee Member**: Graduate Advisory Committee, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2021 – Spring 2023)
2. **Committee Member**: Diversity, Equity, Inclusion Working Group, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2020 – Spring 2022)
3. **Committee Chair**: CLAS Teaching Awards Committee, College of Liberal Arts and Sciences, UNC Charlotte (Spring 2020)
4. **Committee Member**: CLAS Teaching Awards Committee, College of Liberal Arts and Sciences, UNC Charlotte (Spring 2019)
5. **Committee Member**: Faculty Advisory Committee, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2017 – Spring 2018)
6. **Committee Member**: Search Committee for Hydrometeorologist/Ecohydrologist, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2015 – Spring 2016)
7. **Committee Member**: Web and Internet Technology, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2015 – Spring 2016)
8. **Committee Member**: McEniry Building Redesign (Computer Labs), Department of Geography and Earth Sciences, UNC Charlotte (Spring 2015)
9. **Committee Member**: Department Speaker Series, Department of Geography and Earth Sciences, UNC Charlotte (Fall 2014 – Spring 2016)

Professional Service

Journals

1. Editor, *Journal of Operational Meteorology*, 2022 – present
2. Associate Editor, *Monthly Weather Review* journal, 2015 – present
3. Associate Editor, *Weather and Forecasting* journal, 2016 – 2019
4. Manuscript Reviewer, *Atmosphere*, *Journal of Geoscience Education*, *Journal of Astronomy and Earth Sciences Education*, *Bulletin of the American Meteorological Society*, *Quarterly Journal of the Royal Meteorological Society*, ad-hoc since 2018

Committees

1. Committee Member, Unidata User's Committee, 2018 – present
2. Committee Member, American Meteorological Society Committee on Severe Local Storms, 2018 – present
3. Committee Member, North Carolina Academy of Sciences Publications Committee, May 2015 – May 2023
4. Faculty Co-Chair, American Meteorological Society Student Conference, 2020 – 2022

Grants and Applications

1. Grant Reviewer, National Science Foundation (Division of *Atmospheric and Geospace Sciences*), adhoc since 2016
2. Grant Reviewer, National Oceanic and Atmospheric Administration, ad-hoc since 2015
3. Scholarship Reviewer, American Meteorological Society, 2019
4. Application Reviewer, National Science Foundation (*Graduate Research Fellowship Program*), 2016

Conferences and Other Meetings

1. Co-Chair, American Meteorological Society Severe Local Storms Conference 2024, Fall 2022 – present
2. Co-Convener, "Teaching Atmospheric Dynamics to Improve Learning and Engagement" mini-workshop, Earth Educators' Rendezvous, July 2022
3. Co-Organizer, American Meteorological Society Severe Local Storms Virtual Conference for Students and Early Career Scientists, 2021
4. Poster Session Co-Chair, Earth Educators' Rendezvous, July 2021
5. Co-Organizer, American Meteorological Society Special Collection on Atmospheric Science Education Research, 2021
6. Student Presentation Judge, American Geophysical Union Fall Meeting, December 2020
7. Session Chair, American Meteorological Society 29th Conference on Severe Local Storms, October 2018
8. Student Presentation Judge, North Carolina Academy of Science 114th Annual Meeting, March 2017

9. Session Co-Chair, American Meteorological Society 16th Conference on Mesoscale Processes, August 2015
10. Student Presentation Judge, American Meteorological Society 16th Conference on Mesoscale Processes, August 2015
11. Session Chair, American Meteorological Society 26th Conference on Severe Local Storms, November 2012

RECOGNITION, HONORS, & AWARDS

1. **Cover Page, *Journal of Geoscience Education***, April 2020
2. **Editor's Award, *Weather and Forecasting***, American Meteorological Society (January 2020)
3. **"Papers of Note" Highlighted in *Bulletin of the AMS*:** Creating a More Realistic Idealized Supercell Thunderstorm Evolution via Incorporation of Base-State Environmental Variability (November 2019)
4. **Integration of Undergraduate Teaching and Research Award**, College of Liberal Arts and Sciences, UNC Charlotte (April 2018)
5. **Dr. Tyrel Moore Mentorship Award**, Department of Geography and Earth Sciences, UNC Charlotte (May 2017)
6. **Faculty Appointment**, UNC Charlotte Honors program (May 2016 – present)
7. **Faculty Appointment**, UNC Charlotte Infrastructure and Environmental Systems Ph.D. program (December 2014 – present)
8. **Faculty Appointment**, UNC Charlotte Graduate Faculty (October 2014 – present)
9. **Award for Civilian Achievement**, Department of the Air Force (May 2014)
10. **Basic Sciences Division Team of the Year** (*Member of the Department of Physics STEM Outreach Team*), United States Air Force Academy (May 2013)
11. **Best Student Poster**, 24th Conference on Severe Local Storms, American Meteorological Society (October 2008)

PROFESSIONAL MEMBERSHIPS

1. National Association of Geoscience Teachers, 2017—present

2. National Science Teachers Association, 2015—present
3. American Geophysical Union, 2014—present
4. National Weather Association, 2013—present
5. American Meteorological Society, 2003—present
6. North Carolina Academy of Science, 2015—2022