**Morgan E. Schneider**

University of Oklahoma

Cooperative Institute for Severe and High-Impact Weather Research and Operations

NOAA/OAR National Severe Storms Laboratory

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# Research Interests

* Severe convective storms
* Radar meteorology
* Observations and instrumentation
* Storm-scale modeling
* Planetary boundary layer (PBL) processes

# Education

Exp. 2025 **Ph.D. Meteorology**

*University of Oklahoma*

Dissertation:

Advisors: Dr. Matthew Flournoy, Dr. Michael Coniglio

2021 **M.S. Meteorology**

*University of Oklahoma*

Thesis: Quantifying and Mitigating Debris-Induced Bias in Radar Measurements of Tornadic Winds

Advisors: Dr. David Bodine, Dr. Robert Palmer

2019 **B.S. Meteorology** Summa Cum Laude

*University of Oklahoma*

Minors: Electrical and Computer Engineering, Mathematics

# Professional Experience

2021–Present**Graduate Research Assistant**

*University of Oklahoma/Cooperative Institute for Severe and High-Impact Weather Research and Operations/National Severe Storms Laboratory*

Advisors: Dr. Matthew Flournoy, Dr. Michael Coniglio

* Used high-resolution idealized numerical simulations to study the dynamics of QLCS-supercell mergers.
* Planned and led RaXPol data collection as a funded PI on the PERiLS and DELTA field campaigns.

2019–2021 **Graduate Research Assistant**

*University of Oklahoma/Advanced Radar Research Center*

Advisors: Dr. David Bodine, Dr. Robert Palmer

* Studied relationships between debris characteristics and centrifuging bias in tornadic Doppler velocities.
* Developed a novel signal processing technique to reduce debris centrifuging velocity bias.

2017–2019 **Undergraduate Research Assistant**

*University of Oklahoma/Advanced Radar Research Center*

Advisor: Dr. Phillip Chilson

* Calculated estimates of the temperature structure function parameter to quantify boundary layer turbulence using UAS in situ observations.

2018 **Ernest F. Hollings Undergraduate Scholar**

*NOAA Office of Education*

Advisors: Dr. Patrick Alken, Dr. Arnaud Chulliat

2016–2018 **Student Data Quality Analyst**

*Cooperative Institute for Mesoscale Meteorological Studies*

# Refereed Publications

## Lead Author

Schneider, M. E., D. J. Bodine, R. D. Palmer, S. M. Torres, B. Cheong, C. J. Fulton, C. B. Griffin, and T. Maruyama, 2025: A

novel technique to correct debris centrifuging bias in Doppler velocity measurements from tornadoes. *J. Atmos. Oceanic Technol.*, in revision.

## Coauthor

Kosiba, K. A., and Coauthors, 2024: The Propagation, Evolution, and Rotation in Linear Storms (PERiLS) project. *Bull. Amer.*

*Meteor. Soc.*, 105, E1768–E1799, https://doi.org/10.1175/BAMS-D-22-0064.1.

## In preparation

Schneider, M. E., M. D. Flournoy, and M. C. Coniglio, 2025: Mesovortex evolution in a simulated QLCS-supercell merger.

*Mon. Wea. Rev.*, in preparation.

# Conference Presentations

## Lead Author

Schneider, M. E., E. N. Rasmussen, D. J. Bodine, M. D. Flournoy, M. C. Coniglio, A. W. Lyza, and S. M. Waugh, 2024: Rapid-

scan radar observations of a QLCS mesovortex during PERiLS 2023. *31st Conf. on Severe Local Storms*, Virginia Beach, VA, Amer. Meteor. Soc., P.62, https://ams.confex.com/ams/31SLS/meetingapp.cgi/Paper/444974.

Schneider, M. E., M. D. Flournoy, and M. C. Coniglio, 2024: The genesis and evolution of mesovortices in idealized

simulations of a QLCS-supercell merger. *31st Conf. on Severe Local Storms*, Virginia Beach, VA, Amer. Meteor. Soc., 9.6, https://ams.confex.com/ams/31SLS/meetingapp.cgi/Paper/444972.

Schneider, M. E., D. J. Bodine, B. Cheong, and D. Schvartzman, 2023: Rapid-scan radar observations of two QLCSs during

the PERiLS 2023 field campaign. *40th Conf. on Radar Meteorology*, Minneapolis, MN, Amer. Meteor. Soc., P.102, https://ams.confex.com/ams/40RADAR/meetingapp.cgi/Paper/426268.

Schneider, M. E., D. J. Bodine, R. D. Palmer, S. M. Torres, B. Cheong, C. J. Fulton, C. B. Griffin, H. B. Bluestein, and R. N.

Cross, 2023: A novel technique to correct debris centrifuging bias in Doppler velocity measurements of tornadoes. *40th Conf. on Radar Meteorology*, Minneapolis, MN, Amer. Meteor. Soc., 15B.2, https://ams.confex.com/ams/40RADAR/meetingapp.cgi/Paper/426258.

Schneider, M. E., D. J. Bodine, R. D. Palmer, S. M. Torres, B. Cheong, C. J. Fulton, C. B. Griffin, H. B. Bluestein, R. N. Cross,

and J. Lujan, 2022: Mitigating the effects of debris on Doppler velocity measurements in tornadoes. *30th Conf. on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., P.120, https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/376163.

Schneider, M. E., D. J. Bodine, S. M. Torres, R. D. Palmer, B. Cheong, C. J. Fulton, C. B. Griffin, R. N. Cross, H. B. Bluestein, T.

Maruyama, and J. Lujan, 2022: The mitigation of debris-induced bias in tornadic Doppler velocity measurements. *11th European Conf. on Radar in Meteorology and Hydrology*, Locarno, Switzerland, MeteoSwiss, RSP.P9.

Schneider, M. E., D. J. Bodine, S. M. Torres, R. D. Palmer, B. Cheong, C. J. Fulton, C. B. Griffin, H. B. Bluestein, T. Maruyama,

R. N. Cross, and J. Lujan, 2022: A novel technique to correct debris-related bias in velocity measurements from tornadoes. *38th Conf. on Environmental Information Processing Technologies,* Virtual, Amer. Meteor. Soc., 6B.5, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/391681.

Schneider, M. E., D. J. Bodine, S. M. Torres, H. B. Bluestein, R. D. Palmer, B. Cheong, C. J. Fulton, and J. Lujan, 2021:

Quantifying debris-related bias in tornado wind velocity measurements. *37th Conf. on Environmental Information Processing Technologies,* Virtual, Amer. Meteor. Soc., 10.7, https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/379715.

Schneider, M. E., P. Alken, and A. Chulliat, 2019: Modeling the 3-D geomagnetic field using satellite scalar field

observations. *9th Conf. on Transition of Research to Operations,* Phoenix, AZ, Amer. Meteor. Soc., J4.3, https://ams.confex.com/ams/2019Annual/webprogram/Paper350035.html.

Schneider, M. E., and P. B. Chilson, 2018: Estimation and evaluation of atmospheric CT2 using small unmanned aerial

systems. *17th Annual Student Conf.,* Austin, TX, Amer. Meteor. Soc., S139, https://ams.confex.com/ams/98Annual/webprogram/Paper338258.html.

## Collaborator

Cross, R. N., D. J. Bodine, B. Cheong, R. D. Palmer, C. J. Fulton, S. M. Torres, C. B. Griffin, M. E. Schneider, J. Lujan, and T.

Maruyama, 2022: A radar simulation and large-eddy simulation approach to exploring observational tornado debris signature hypotheses. *30th Conf. on Severe Local Storms*, Santa Fe, NM, Amer. Meteor. Soc., 17.4A, https://ams.confex.com/ams/30SLS/meetingapp.cgi/Paper/407247.

Cross, R. N., D. J. Bodine, B. Cheong, R. D. Palmer, C. J. Fulton, S. M. Torres, C. B. Griffin, M. E. Schneider, T. Maruyama,

and J. Lujan, 2022: Analyzing observational tornado debris signature hypotheses using radar simulations and large-eddy simulations. *38th Conf. on Environmental Information Processing Technologies,* Virtual, Amer. Meteor. Soc., 6B.4, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/394331.

# Professional Training

2018 **Remote Pilot: Uncrewed Aircraft Systems (UAS)**

*Federal Aviation Administration*

Preparation for a Part 107 license for commercial UAS operation. Covers fundamental aviation topics and airspace regulations.

# Grants Awarded

2023 **Rapid-scan radar observations of mesovortices in Southeastern linear storms** ($119,769)

*NOAA Office of Atmospheric Research*

Principal investigator: Morgan Schneider

Co-investigators: David Bodine, Boonleng Cheong, David Schvartzman

2020 **Graduate Research Fellowship** ($138,000)

*National Science Foundation*

Principal investigator: Morgan Schneider

# Professional Awards & Honors

2024 **Richard J. Doviak Award**, *University of Oklahoma School of Meteorology*

2022 **Outstanding Teaching Assistant**, *University of Oklahoma School of Meteorology*

2020 **Graduate Research Fellowship**, *National Science Foundation*

2020 **Provost’s Certificate of Distinction in Teaching**, *University of Oklahoma*

2019 **Graduate Research Fellowship Honorable Mention**, *National Science Foundation*

2019 **Best Student Oral Presentation Honorable Mention**, *American Meteorological Society*

2019 **Undergraduate Academic Achievement Award**, *University of Oklahoma School of Meteorology*

2018 **Outstanding Senior**, *University of Oklahoma College of Atmospheric and Geographic Sciences*

2018 **John W. Nichols Trailblazer Scholarship**, *University of Oklahoma School of Meteorology*

2018 **Om and Saraswati Bahethi Senior Scholarship**, *American Meteorological Society*

2017 **Ernest F. Hollings Undergraduate Scholarship**, *NOAA Office of Education*

2017 **Eric Nguyen Memorial Endowed Scholarship**, *University of Oklahoma School of Meteorology*

2015–2019 **President’s Honor Roll**, *University of Oklahoma*

2015–2019 **Dean’s Honor Roll**, *University of Oklahoma College of Atmospheric and Geographic Sciences*

2015 **National Merit Scholarship**, *University of Oklahoma*

# Mentoring & Service

2022 **Research Experience for Undergraduates (REU) mentor**, *University of Oklahoma* *School of Meteorology*

* Student: Kyndra Buglione
* Project: Examining the Potential of ZDR Columns to Predict Tornado Formation and Intensity in Quasi-Linear Convective Systems

2020 **Undergraduate Research Day presentation judge**, *University of Oklahoma Honors College*

2020 **Visiting Student Weekend volunteer**, *University of Oklahoma School of Meteorology*

2019–2020 **National Weather Festival volunteer**, *Advanced Radar Research Center*

2017–2019 **Freshman peer mentor**, *University of Oklahoma School of Meteorology*

2017 **Oklahoma Weather Lab Director of Development**, *University of Oklahoma School of Meteorology*

2016–2019 **Oklahoma Weather Lab Forecast Shift Leader**, *University of Oklahoma School of Meteorology*

# Teaching Experience

2020–2022**Teaching assistant**, *University of Oklahoma*

* Course: METR 4433 Mesoscale Meteorology
* Graded student assignments, quizzes, and exams
* Designed and taught lectures on radar meteorology for storm-scale forecasting applications

# Field Experience

2024 **Low-Level Internal Flows in Tornadoes (LIFT)**

Roles: Mobile mesonet operator

2024 **Detecting and Evaluating Low-Level Tornado Attributes (DELTA)**

Roles: Principal investigator, instrument lead, mobile radar operator

2022–2023 **Propagation, Evolution, and Rotation in Linear Storms (PERiLS)**

Roles: Principal investigator, instrument lead, mobile radar operator

2019–2023 **Targeted Observations by Radar and UAS of Supercells (TORUS)**

Roles: Mobile mesonet operator, windsonde field lead, mobile radar operator

2017 **Collaboration Leading Operational UAS Development for Meteorology and Atmospheric Physics**

**(CLOUD-MAP)**

Roles: UAS ground station operator, visual observer

2017 **Environmental Profiling and Initiation of Convection (EPIC)**

Roles: UAS ground station operator, visual observer

# Professional Memberships

2017–Present American Meteorological Society

2019–Present Phi Beta Kappa Honor Society

# Technical Skills

**Advanced** Python, MATLAB, Microsoft Word, Microsoft PowerPoint, Microsoft Excel

**Intermediate** LaTeX, Unix, Git

**Beginner** C, FORTRAN, HPC, uncrewed aircraft system (UAS) operation