

Earth system observations for weather and climate research: Extensive experience distilling large data sets, designing observing strategies, and combining information from multiple sources including multispectral satellite, radar, lidar, in situ meteorological measurements, and numerical weather model output. Applications include weather decision support, climate adaptation planning, and AI training using high quality data sets for machine learning and deep learning. Basic research focus areas include cloud and precipitation lifecycles, winter weather, marine clouds, orographic precipitation, and tropical convection.

Education

- 1996 Ph.D., University of Washington, Atmospheric Sciences
Thesis: Characteristics of Precipitating Tropical Convection
Graduate supervisor: Robert A. Houze, Jr.
- 1985-1986 Additional coursework, University of Southern California,
Artificial Intelligence and Probability Theory.
- 1983 B.S., Brown University, Geology-Physics/Mathematics, magna cum laude

Professional Employment

- 2005- Distinguished Professor (2018-), Professor (2011-2018), Associate Professor (2007-2011) Assistant Professor (2005-2007), Department of Marine, Earth and Atmospheric Sciences, North Carolina State University, Raleigh, NC
- 2022- President and CEO, Atmometrics, Inc.
- 1999-2005 Research Associate Professor (2004-2005), Research Assistant Professor (1999-2004), Department of Atmospheric Sciences, University of Washington, Seattle, WA
- 1996-1999 Research Scientist, Mesoscale Group, Department of Atmospheric Sciences, University of Washington, Seattle, WA
- 1988-1990 Software Engineer III, Research Applications Program, National Center for Atmospheric Research, Boulder, CO
- 1986-1988 Technical Marketing Engineer, Graphics Division, Symbolics Inc., Los Angeles, CA
- 1983-1986 Member of Technical Staff, Data Systems Laboratory, TRW Defense Systems Group, Redondo Beach, CA

Awards, Editorships, Affiliations, Committees, and Fellowships

- 2017 Fellow, American Meteorological Society
- 2012-2021 Editor, American Meteorological Society Journal of Applied Meteorology and Climatology
- 2024- International Precipitation Working Group -- Machine Learning Focus Group, Member
- 2024 Participant, NSF Workshop – Exploring the Ethical Considerations and Governance Requirements of Climate Intervention
- 2024 NASA Group Achievement Award to IMPACTS Team
- 2023- International Precipitation Working Group -- Snowfall/Particle Scattering Focus Group, Member

2023 Finalist, NCSU Graduate School Outstanding Graduate Faculty Mentor Award
2021 Board of Trustees Member, University Corporation for Atmospheric Research, Boulder, Colorado
2020 NOAA Physical Sciences Laboratory 5-year Review Panel Member
2017- Faculty Fellow at the Center for Geospatial Analytics, North Carolina State University
2016- Adjunct Professor, School of Marine and Atmospheric Sciences, Stony Brook University
2016-2024 Affiliate Faculty, Department of Geography and Planning, Appalachian State University, North Carolina
2016 Thank a Teacher Recognition, North Carolina State University
2015-2021 NCAR Earth Observing Laboratory External Advisory Committee
2013 American Meteorological Society, Committee on Researcher Involvement in the AMS
2012 American Meteorological Society, Membership Subcommittee
2011-2016 DOE Atmospheric System Research Science Team
2011-2014 NASA MODIS Science Team
2010-2014 NCAR Earth Observing Laboratory-Observing Facilities Assessment Panel
2009-2010 DOE ARM Climate Research Facility Science Advisory Board Member
2009 NOAA National Severe Storms Laboratory Review Board Member
2008-2009 Co-chair, American Meteorological Society, 13th Conference on Mesoscale Processes
2006-2008 DOE ARM Climate Research Facility Science Advisory Board Member
2006-2011 American Meteorological Society, Mesoscale Processes Committee
2005-2007 Co-chair, Sierra Hydrometeorology Atmospheric River Experiment (SHARE) Scientific Steering Committee
2005-2007 World Meteorological Organization/IUGG Science Assessment of Aerosol Effects on Precipitation Working Group
2005-2006 NASA Global Precipitation Mission, Advisory Panel on Ground Measurements
2003-2005 NASA Global Precipitation Mission, Ground Validation International Steering Group
2003 NASA Certificate of Appreciation for contributions to the Instrument Incubator Program and to the Earth Science Enterprise
2001- American Geophysical Union, Atmospheric Sciences/Precipitation and Cloud Committee
2001-2003 Co-chair, NASA Global Precipitation Mission, Calibration and Validation of Satellite Precipitation Measurements Working Group
2000-2006 NASA Precipitation Measurement Missions Science Team
1996 Promise of Excellence Award, Seattle Chapter, Women in Communications, Inc.
1992-1995 EOS Global Change Fellowship
1990-1992 NASA Space Grant Fellowship
1983 Sigma Xi Scientific Research Society
1979 Westinghouse Science Talent Search Honors for project on hydroponics for space missions.

Field Project Leadership

2023- Eastern Carolina Atmospheric Observing Site, Plymouth, NC: Co-chief Scientist
2019-2023 NASA Investigation of Microphysics and Precipitation for Atlantic Coast-Threatening Snowstorms: Science Team PI and Mission Scientist
2014 Radar Observations of Storms for Education, Colorado, Chief Scientist
2007-2023 Stony Brook, NY, Meteorological Observatory, Co-chief Scientist
2006-2009 Poga Mountain, NC, Meteorological Observatory, Chief Scientist
2001 EPIC Stratocumulus Study: Southeastern Pacific, NOAA Ship Ronald H. Brown, Senior Scientist
1998-1999 KWAJEX: Kwajalein, Marshall Islands, Project Science Coordinator, Project Scientist-NASA and NOAA project with over 100 scientists and engineers
1997 PACS TEPPS: Tropical eastern Pacific, First research cruise of NOAA Ship Ronald H. Brown, Chief Scientist

Other Field Project Experience

- 2011-2015 Wasatch Hydrometeor Aggregation and Riming Experiment, Alta, Utah, Radar Scientist
2010 Inhibition of Snowfall by Pollution Aerosols: Colorado, Radar scientist
2008 VAMOS Ocean Cloud Atmosphere Land Study (VOCALS): Southeastern Pacific, Radar scientist
2004 HYDROMET 2004: California, Disdrometer scientist
2003 PACJET 2003: California, Disdrometer scientist
IMPROVE II: Oregon, Disdrometer scientist
1995 COAST II: Washington, Aircraft flight planning and mission summary preparation
1993 COAST: Washington, Aircraft radar scientist and cloud physics scientist
1992-1993 TOGA-COARE: Honiara, Solomon Islands, Aircraft radar and cloud physics scientist
1991 CaPE: Florida, Doppler and dual polarization radar scientist, aircraft scientist, radar scan coordinator
1988-1990 Several field projects in Denver, CO area related to demonstration of Terminal Doppler Weather Radar (TDWR) and nowcasting for the FAA

Peer-reviewed articles and book chapters (underlined names are students, post-docs and science staff directly supervised)

- (97) Reid, J. S., J. H. Cossuth, C. J. Gaston, R. E. Holz, D. H. Richter, A. Sealy, E. J. Thompson, Q. Wang, M. J. Chinita, J.P. Dunion, D. P. Eleuterio, W. J. Marias, J. I. Rubin, S. S. Rushley, L. Shen, Z. Wang, R. Yamaguchi, E. Blades, A. Bucholz, Z. Buckholtz, R. Chewitt-Lucas, J. D. Doyle, T. F. Eck, E. Eloranta, D. Flagg, D. Fu, J. P. Garcia, J. A. Hlywiak, C. R. Jackson, S. Król, E. Lind, A. Mabrey, S. P. Malinowski, H. B. Maring, E. C. Melvin, M. A. Miller, S. Mittal, K. L. Mulreany, I. I. Razenkov, E. A. Reid, J. Roetman, J. Ruiz-Plancarte, P. Selmer, S. Schmidt, S. Shrestha, A. Willitsford, M. K. Witte, P. Xian, S. E. Yuter, 2026: Delaminating the Marine Atmospheric Boundary and Saharan Air Layers: Observations and modeling by MAGPIE to understand marine boundary and lower free troposphere layer inhomogeneity over the Northwest Tropical Atlantic, submitted to *Bull. Amer. Met. Soc.*, submitted 2/2026.
- (96) Yuter, S. E., 2026: "Precipitation Radar" in the *Encyclopedia of Atmospheric Sciences, 3rd edition*, edited by A. Detwiler, W. Robinson, P. Yang, Elsevier Ltd., Oxford, UK, Academic Press, pp. 98–117. <https://dx.doi.org/10.1016/B978-0-323-96026-7.00043-6> ISBN: 9780323960267
- (95) Yorks, J. E., M. A. Miller, T. J. Lang, J. A. Finlon, L. S. Adams, B. A. Colle, S. J. Greybush, A. J. Heymsfield, G. M. Heymsfield, R. Kroodsma, S. LeBlanc, M. W. McLinden, G. M. McFarquhar, R. M. Rauber, S. E. Yuter, T. Zaremba, and L. McMurdie, 2025: Sampling strategies to optimize coincident remote sensing and in situ cloud and precipitation measurements from multiple aircraft. *Bull. Amer. Met. Soc.* doi.org/10.1175/BAMS-D-24-0280.1.
- (94) McLaurin, L. K., S. E. Yuter, K. D. Burris, and M. A. Miller, 2025: The power of hourly weather data: Observed air temperature climate trends for pragmatic decision-making. *PLOS Climate*, doi.org/10.1371/journal.pclm.0000736
- (93) Tomkins, L. M., S. E. Yuter, M. A. Miller, M. Oue, and C. N. Helms, 2025: Synthesis of surface snowfall rates and radar-observed storm structures in 10+ years of Northeast US winter storms. *Atmos. Chem. Phys.*, doi.org/10.5194/acp-25-9999-2025
- (92) Allen, L. R., S. E. Yuter, D. M. Crowe, M. A. Miller, and K. L. Thornhill, 2025: In-cloud characteristics observed in US Northeast and Midwest non-orographic winter storms with implications for ice particle mass growth and residence time. *Atmos. Chem. Phys.*, doi.org/10.5194/acp-25-6679-2025.
- (91) Yuter, S. E., M. M. Sevier, K. D. Burris, and M. A. Miller, 2025: Characteristics of observed electromagnetic wave ducts in tropical, subtropical, and middle latitude locations. *Atmosphere*, doi.org/10.3390/atmos16030336.

- (90) Allen, L. R., S. E. Yuter, M. A. Miller, and L. M. Tomkins, 2025: Hunting for gravity waves in non-orographic winter storms using 3+ years of regional surface air pressure networks and radar observations. *Atmos. Chem. Phys.*, doi.org/10.5194/acp-25-1765-2025.
- (89) Tomkins, L. M., S. E. Yuter, and M. A. Miller, 2024: Dual adaptive differential threshold method for automated detection of faint and strong echo features in radar observations of winter storms. *Atmos. Meas. Tech.*, doi.org/10.5194/amt-17-3377-2024.
- (88) Oue, M., B. A. Colle, S. E. Yuter, P. Kollias, P. Yeh and L. M. Tomkins, 2024: Microscale updrafts within the U.S. Northeast coastal snowstorms using high-resolution cloud radar measurements. *Mon. Wea. Rev.* 10.1175/MWR-D-23-0055.1.
- (87) Allen, L. R., S. E. Yuter, M. A. Miller, and L. M. Tomkins, 2024: Objective identification of pressure wave events from networks of 1-Hz high-precision sensors. *Atmos. Meas. Tech.*, doi.org/10.5194/amt-17-113-2024.
- (86) Tomkins, L. M., S. E. Yuter, M. A. Miller, and L. R. Allen, 2022: Image muting of mixed precipitation to improve identification of regions of heavy snow in radar data. *Atmos. Meas. Tech.*, doi.org/10.5194/amt-15-5515-2022.
- (85) Hueholt, D. M., S. E. Yuter, and M. A. Miller, 2022: Revisiting diagrams of ice growth environments. *Bull. Amer. Meteor. Soc.*, DOI 10.1175/BAMS-D-21-0271.1
- (84) McMurdie, L. A., G. M. Heymtsfield, J. E. Yorks, S. A. Braun, G. Skofronick-Jackson, R. M. Rauber, S. Yuter, B. Colle, G. M. McFarquhar, M. Poellot, D. R. Novak, T. J. Lang, R. Kroodsma, M. McLinden, M. Oue, P. Kollias, M. R. Kumjian, S. J. Greybush, A. J. Heymtsfield, J. A. Finlon, V. L. McDonald, S. Nicholls, 2022: Chasing snowstorms: The Investigation of Microphysics and Precipitation for Atlantic Coast-threatening Snowstorms (IMPACTS) campaign. *Bull. Amer. Meteor. Soc.*, doi.org/10.1175/BAMS-D-20-0246.1
- (83) Miller, M.A., S. E. Yuter, N. P. Hoban, L. M. Tomkins and B. A. Colle, 2022: Detecting wave features in Doppler radar velocity observations. *Atmos. Meas. Tech.*, 1689–1702, doi.org/10.5194/amt-15-1689-2022
- (82) Patel, R. N., S. E. Yuter, and M. A. Miller, S. R. Rhodes, L. Bain, and T. Peele, 2021: The diurnal cycle of winter season temperature errors in the operational Global Forecast System (GFS), *Geophys. Res. Lett.*, DOI: 10.1029/2021GL095101.
- (81) Tomkins, L. M., D. B. Mechem, S. E. Yuter, and S. R. Rhodes, 2021: Regional flow conditions associated with stratocumulus cloud-eroding boundaries over the southeast Atlantic. *Mon. Wea. Rev.*, DOI:10.1175/MWR-D-20-0250.1
- (80) Perry, L. B., S. E. Yuter, T. K. Matthews, P. Wagnon, A. Khadka, D. Aryal, D. Shrestha, A. Tait, M. A. Miller, A. O'Neill, S. R. Rhodes, I. Koch, T. Sherpa, S. Tuladhur, S. K. Baidya, S. Elvin, A. C. Elmore, A. Gajurel, and P. A. Mayewski, 2020: Observations of an Everest snowstorm from the world's highest surface-based radar observations. *Weather*, DOI:10.1002/wea.3854
- (79) Yuter, S. E., 2019: The Weather Around Us. Chapter 15 Introduction for *The Good Earth: Introduction to Earth Science*, McGraw Hill, 416-417.
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- (74) Perry, L. B., A. Seimon, M. Andrade, J. L. Endries, S. E. Yuter, F. Velarde, S. Arias, M. Bonshoms, E. J. Burton, R. Winkelmann, C. M. Cooper, G. Mamani, M. Rado, M. Montoya, M. Quispe, 2017: Modes of precipitation delivery in the Cordillera Vilcanoto of Peru and Cordillera Real of Bolivia. *Annals of the Assoc. of American Geographers*, **107**, 309-322. DOI: 10.1080/24694452.2016.1260439
- (73) deSzoeker, S. P., K. L. Verlinder, S. E. Yuter and D. B. Mechem, 2016: The timescales of variability of marine low clouds. *J. Climate*, doi: 10.1175/JCLI-D-15-0460.1
- (72) Molthan, A. L., B. A. Colle, D. Stark and S. E. Yuter, 2016: Comparisons among modeled and observed reflectivity and fall speeds for snowfall of varied riming degree during winter storms on Long Island, NY. *Mon. Wea. Rev.*, <http://dx.doi.org/10.1175/MWR-D-15-0397.1>.
- (71) Wood, R., M. P. Jensen, J. Wang, C. S. Bretherton, S. M. Burrows, A. D. Del Genio, A. M. Fridlind, S. J. Ghan, V. P. Ghate, P. Kollias, S. K. Krueger, R. L. McGraw, M. A. Miller, D. Painemal, L. M. Russell, S. E. Yuter, P. Zuidema: 2016: Planning the next decade of coordinated research to better understand and simulate marine low clouds. *Bull. Amer. Meteor. Soc.*, **97**, 1699-1702, DOI:10.1175/BAMS-D-16-0160.1
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- (65) Wood, R., M. Wyant, C. S. Bretherton, J. Rémillard, P. Kollias, J. Fletcher, J. Stemmler, S. deSzoeker, S. Yuter, M. Miller, D. Mechem, G. Tselioudis, C. Chiu, J. Mann, E. O'Connor, R. Hogan, X. Dong, M. Miller, V. Ghate, A. Jefferson, Q. Min, P. Minnis, R. Palinkonda, B. Albrecht, E. Luke, C. Hannay, Y. Lin, 2015: Clouds, aerosol, and precipitation in the marine boundary layer: An ARM Mobile Facility deployment, *Bull. Amer. Met. Soc.*, **96**, 419-440.
- (64) Bluestein, H. B., R. M. Rauber, D. W. Burgess, B. Albrecht, S. M. Ellis, Y. P. Richardson, D. P. Jorgensen, S. J. Frasier, P. Chilson, R. D. Palmer, S. E. Yuter, W.-C. Lee, D. C. Dowell, P. L. Smith, P. M. Markowski, K. Friedrich and T. M. Weckwerth, 2015: Radar in atmospheric sciences and related research: Current systems, emerging technologies and future needs. *Bull. Amer. Met. Soc.*, **95**, 1850-1861.
- (63) Colle, B. A., D. Stark, and S. E. Yuter, 2014: Surface microphysical observations within East Coast winter storms on Long Island, NY. *Mon. Wea. Rev.*, **142**, 3126-3146. 10.1175/MWR-D-14-00407.1
- (62) Cunningham, J. G. and S. E. Yuter, 2014: Atmospheric characteristics of cool-season intermittent precipitation near Portland, Oregon. *Mon. Wea. Rev.*, **142**, 1738-1757. 10.1175/MWR-D-13-00133.1
- (61) Garrett, T. J. and S. E. Yuter, 2014: Observed influence of riming, temperature, and turbulence on the fall speed of solid precipitation. *Geophys. Res. Lett.*, doi:10.1002/2014GL061016.
- (60) Mechoso, C. R., R. Wood, R. Weller, C. S. Bretherton, A. D. Clarke, H. Coe, C. Fairall, J. T. Farrar, G. Feingold, R. Garreaud, C. Grados, J. C. McWilliams, S. P. deSzoeker, S. E. Yuter, and P. Zuidema.

- 2014: Ocean-cloud-atmosphere-land interactions in the southeastern Pacific: The VOCALS Program. *Bull. Amer. Met. Soc.*, **95**, 357-375.
- (59) Yuter, S. E., 2014: "Precipitation Radar" in the *Encyclopedia of Atmospheric Sciences*, 2nd edition, edited by G. R. North, J. Pyle and F. Zhang. Academic Press, London, pp 455-469.
- (58) Biasutti, M. and S. E. Yuter, 2013: Observed frequency and intensity of tropical precipitation from instantaneous estimates. *J. Geophys. Res.*, **118**, 9534–9551, doi:10.1002/jgrd.50694.
- (57) Burleyson, C. D., S. P. deSzoeki, S. E. Yuter, M. Wilbanks and W. A. Brewer, 2013: Ship-based observations of the diurnal cycle of southeast Pacific marine stratocumulus clouds and precipitation. *J. Atmos. Sci.*, **70**, 3876-3894, doi:10.1175/JAS-D-13-01.1.
- (56) Kingsmill, D. E., P. J. Neiman, B. J. Moore, M. Hughes, S. E. Yuter, and F. M. Ralph, 2013: Kinematic and thermodynamic structures of Sierra barrier jets and overrunning atmospheric rivers during a land-falling winter storm in northern California. *Mon. Wea. Rev.*, **141**, 2015-2036.
- (55) Lin, Y., B. A. Colle, and S. E. Yuter 2013: Impact of moisture flux and freezing level on simulated orographic precipitation errors over the Pacific Northwest, *J. Hydromet.*, **14**, 140-152.
- (54) Miller, M. A, and S. E. Yuter, 2013: Detection and characterization of drizzle cells within marine stratocumulus using AMSR-E 89 GHz passive microwave measurements. *Atmos. Meas. Tech.*, **6**, 1-13, doi:10.5194/amt-6-1-2013.
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- (52) Yuter, S. E., M. A. Miller, M. D. Parker, P. M. Markowski, Y. Richardson, H. Brooks, and J. M. Straka, 2013: Comment on "Why do tornadoes rest on weekends?" by D. Rosenfeld and T. Bell. *J. Geophys. Res.*, doi:10.1029/2012JD018622.
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- (50) deSzoeki, S. P., S. E. Yuter, D. B. Mechem, C. W. Fairall, C. D. Burleyson, P. Zuidema 2012: Observations of stratocumulus clouds and their effect on the eastern Pacific surface heat budget along 20 °S, *J. Climate*, **25**, 8542-8567, 10.1175/jcli-d-11-00618.1.
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- (48) Waliser, D. E., M. Moncrieff, D. Burridge, A. Fink, D. Gochis, B. N. Goswami, B. Guan, P. Harr, J. Heming, H.-H. Hsu, C. Jakob, M. Janiga, R. Johnson, S. Jones, P. Knippertz, J. Marengo, H. Nguyen, M. Pope, Y. Serra, C. Thorncroft, M. Wheeler, R. Wood, and S. Yuter, 2012: The "Year" of Tropical Convection (May 2008 to April 2010): Climate Variability and Weather Highlights, *Bulletin of the American Meteorological Society*, **93**, 1189-1218.
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Reports (not peer-reviewed)

- Yuter, S. E., P. E. Zimmer, M. A. Miller, and L. B. Perry, 2025: Historical Weather Observations and Potential Future Climate Scenarios for Summit Lake, Nevada Region – Information for Summit Lake Paiute Tribe Climate Adaptation Plan. 21 pp.
- Burleyson, C. D., S. E. Yuter, and L. Rose, 2011: Atmospheric Observations Feasibility Study for the Lake Victoria Basin Commission. 16 pp.
- Yuter, S. E., J. Koistinen, S. Di Michele, M. Hagen, A. Illingworth, S. Shimizu, and D. Wolff, 2004: GPM Ground Validation Basic Radar Products and Implications for Observation Strategies. Accessible at: www.arxiv.org, arXiv:physics/0401101, 11 pp.
- Adkins, W., and S. E. Yuter, 2002: Report on Potential Tropical Open Ocean Precipitation Validation Sites, NASA Global Precipitation Mission Reports, *NASA/TM-2002-210010*, 77 pages.
- Yuter, S., R. Houze, V. Chandrasekar, E. Foufoula-Georgiou, M. Hagen, R. Johnson, D. Kingsmill, R. Lawrence, F. Marks, S. Rutledge, and J. Weinman, 2002: GPM Draft Science Implementation Plan Ground Validation Chapter. Accessible at www.arxiv.org, arXiv:physics/0211095, 22 pp.
- Yuter, S. E., 1984: Preliminary results of albedo correlation between Europa and Ganymede. *Advances in Planetary Geology*, NASA TM-86247, 212-216.

Research Data and Software Public Archive Contributions:

- Tomkins, L., S. Yuter, M. Miller, N. Corbin, N. Hoban, (2023). Northeast US Regional NEXRAD radar mosaics of winter storms from 1996-2023, part 1 [Dataset]. Dryad.
<https://doi.org/10.5061/dryad.zcrjdfnk6>
- Tomkins, L., S. Yuter, M. Miller, N. Corbin, N. Hoban (2023). Northeast US Regional NEXRAD radar mosaics of winter storms from 1996-2023, part 2 [Dataset]. Dryad.
<https://doi.org/10.5061/dryad.rbnzs7hj9>

Tomkins, L., Yuter, S. E., and Miller, M., 2024: Low pressure tracks for northeast US winter storms from 1996–2023, OSF [ata set and software], <https://doi.org/10.17605/OSF.IO/AZ5W2>

https://arm-doe.github.io/pyart/API/generated/pyart.util.image_mute_radar.html

https://arm-doe.github.io/pyart/API/generated/pyart.retrieve.feature_detection.html

https://arm-doe.github.io/pyart/API/generated/pyart.retrieve.create_cfad.html

Funded Research Grants: total of over \$7M since July 2000

start date	end date	agency	title	role	collaborators	amount (\$)
Mar-2026		Robinson Brown - donation	Support for undergraduate research	PI		\$5000
May-2025	Sept-2025	University of Nevada	Summit Lake Paiute Tribe Climate Adaptation Planning for Ecosystems and Community	Co-PI	PI-Miller, NCSU	\$54,401
Mar-2025		Robinson Brown - donation	Support for undergraduate research	PI		\$5000
May-24	Dec-26	Office of Naval Research	Cloud and boundary layer forecast evaluations	PI		\$648,898
May-21	Sept-24	Robinson Brown - donation	Ground Climate Study – support for undergraduate research	PI		\$10,000
Jan-21	Dec-24	Office of Naval Research	Marine Boundary Layer Characteristics, Clouds, and Air-Sea Interactions Matching Observations and Model Forecasts to Diagnose COAMPS and NEPTUNE Weaknesses	PI		\$461,021
Aug-19	Jul-23	NSF	Collaborative Research: Extensive Field Observations and Modeling to Understand Multi-band Precipitation Processes within Winter Storms	PI	Colle-Stony Brook University	404,434
Jun-19	Jun-21	Delta Air Lines	Delta Air Lines Task Order (Meteorology: Weather Prediction Model Verification)	PI		256,147
Jan-19	Dec-25	NASA	The Investigation of Microphysics and Precipitation for Atlantic Coastal Threatening Snowstorms (IMPACTS)	PI	McMurdie-University of Washington	519,510

Nov-18	Jun-19	NCSU-STEM Education Initiative	Campus-scale weather data to compare to conceptual models of daily and storm passage air temperature and humidity changes	PI		2700
Nov-17	Jun-18	NCSU-STEM Education Initiative	Visualization of the movements of air that underlie weather	PI		2700
July-17	Jun-22	NSF	Collaborative Research: Mechanisms governing synoptic-scale, rapid cloud dissipation in subtropical marine low clouds	PI	Mechem-U. Kansas	460,187
Sep-15	Aug-18	subcontract from Stony Brook U (NASA prime)	Nowcasting severe storm evolution and tracking storm life cycles in the northeast United States using GOES-R	PI	French- Stony Brook University	90,000
Feb-14	Jan-19	NSF	Collaborative Research: Observations and modeling of mesoscale precipitation banding in cool-season storms	PI	Colle-Stony Brook University	462,319
Mar-14	Feb-17	NSF	Real examples of classic storm structures for classroom use based on data from FRONT-PORCH	PI		92,479
Sep-13	Aug-17	NSF	Flipping the Script: Using short videos to promote learning in introductory geoscience courses	co-PI	PI-McConnell NCSU	10,000 (Yuter portion)
Sep-11	Jul-14	NOAA	Cooperative Institute for Climate and Satellites (CICS) - Yuter subcontract	PI		125,180
Sep-11	Sep-16	DOE	Collaborative Research: Cloudiness transitions within marine clouds near the Azores	PI	Mechem - U Kansas and deSzoeki Oregon State	510,182
Sep-11	Aug-15	NSF	Collaborative Research: The Wasatch Hydrometeor Aggregation and Riming Experiment	PI	Garrett - U. Utah	129,546
Apr-11	Sep-11	Lake Victoria Basin Commission	Strengthening Meteorological Services on Lake Victoria to enhance safety of navigation and exploitation of natural resources	co-PI	PI-Semazzi-NCSU	130,000 (Yuter portion)
Sep-10	Aug-13	NASA	NASA Space and Earth Science Fellowship Casey Burleyson	PI		90,000
Sep-10	Feb-15	NASA	Global characteristics of marine stratocumulus clouds and drizzle	PI		337,985
Sep-09	Aug-12	NSF	Collaborative Research: Intermittent and steady state processes in orographic precipitation	PI	Colle-Stony Brook University	345,879

Aug-09	Aug-10	ASTREC	Optimal reconfiguration of multiple small satellites for environmental monitoring	PI	Rao-University of Florida	12,800
Dec-08	Nov-11	NSF	Collaborative Research: Inhibition of snowfall by pollution aerosols	PI	Cotton-Colorado State	69,467
Jun-08	Jun-12	NOAA	Collaborative Research: Ship-based observations of air-sea interactions and stratocumulus cloud-aerosol-drizzle processes in VOCALS	PI	Fairall-NOAA, deSzeoke Oregon State	298,764
Jan-08	Dec-08	UNC-GA	Improving snowfall forecasts in western North Carolina	PI	Perry-Appalachian State	18,614
Sep-07	Sep-10	NASA	NASA Space and Earth Science Fellowship Matthew Miller	PI		83,960
Feb-06	Jan-10	NSF	Average and variability characteristics of orographic precipitation at multiple scales	PI		330,000
Nov-03	Nov-04	NASA	Global and local site oceanic precipitation validation	PI		158,000
Nov-03	Nov-04	NASA	GPM oceanic validation leading to PDR	PI		130,000
May-02	Jun-06	NSF	Scale and characteristics of convective processes in orographic rainfall	PI		404,444
Mar-01	Feb-04	NSF	Soundings, C-band radar, data synthesis and model intercomparisons for the EPIC 2001 stratocumulus study	co-PI	Bretherton, Wood-University of Washington	178,149
Jul-00	Jun-04	NASA	Joint probability analysis of the natural variability of oceanic precipitation	PI		512,000

Courses taught at North Carolina State University:

Dr. Yuter uses research-validated teaching methods, including extensive use of active learning, in all her classes:

Introduction to Atmospheric Sciences (MEA 215, 4-credit course with laboratory). Weather and climate introductory course for freshman meteorology majors and STEM majors. Taught this course and predecessor course since 2006.

Introduction to Meteorological Remote Sensing (MEA 511, 3-credit course for upper-level undergraduates and graduate students), Features a semester long project to design and justify a radar observing system for an assigned season and location in the U.S. Taught since 2006.

Geoengineering and Weather Modification (MEA 593, 2-credit course for upper-level undergraduates and graduate students), Covers the underlying physical science, pragmatic implementation, potential risks, and societal impacts of proposed deliberate interventions in the Earth system to reduce climate and weather risks. First taught in 2026.

First Year Graduate Seminar (MEA 611/612/613), Guest lecture on Time Management, every fall since 2013.

Atmospheric Convection (MEA 714) and *Dynamics of Mesoscale Convective Systems* (715) (3-credit graduate courses), co-taught with Dr. Matthew Parker. The two classes were offered alternating fall semesters from 2006-2023.

Junior Seminar (MEA 495 Spring 2023, 1-credit course focused on junior-level student professional development, career goals, and plans. Discussions of professional opportunities, resources, and ethics. Co-taught with Dr. Catherine Davis (marine) and Dr. Adam Curry (geology).

Courses taught at University of Washington:

Meteorological Instruments and Observations (upper-level undergraduate course, co-taught with Dr. Dean Hegg)

Boundary Layer Meteorology (upper-level undergraduate course).

Professional Development Workshops:

NCSU NSF I-CORPS Entrepreneurial Training, participant (Oct-Nov 2021)

ADVANCE-GEO Workshop on Strategies for Responding to Harassment and Improving our Workplace Climate (23 March 2019), arranged for funding from Department and College and hosted workshop.

NCSU Building Future Faculty Program (20 March 2015), Presenter and Panelist.

On the Cutting Edge: *Preparing for an Academic Career in the Geosciences Workshop* (June 27-30, 2012, Chapel Hill NC), Workshop Leader.

Supervision of Graduate Students (chair or co-chair of committee)

23 graduate students: 7 Ph.D. students and 15 M.S. students completed degrees. Current student: 1 Ph.D.

University of Washington, Department of Atmospheric Sciences

Ph. D. Kimberly Comstock, 2006: Mesoscale variability and drizzle in southeast Pacific stratocumulus. Co-advised with Christopher Bretherton.

North Carolina State University, Department of Marine, Earth, and Atmospheric Sciences

Ph.D. Luke R. Allen, 2024: Observed mesoscale surface air pressure waves and in-cloud characteristics in the context of winter storm structures. Funded in part by the NCSU Center for Geospatial Analytics.

Ph.D. Laura M. Tomkins, 2024: Synthesis of radar-observed characteristics, storm structures, and surface snowfall rates in 10+ years of Northeast US winter storms. Funded in part by the NCSU Center for Geospatial Analytics.

Ph.D. Kevin D. Burris, 2023: Examining winter storm structures with high-resolution observed profiles. Funded by the U.S. Air Force.

Ph.D. Casey D. Burleyson, 2013: Environmental controls on stratocumulus cloud fraction. Funded in part by a NASA Earth and Space Science Fellowship.

Ph.D. Jeffrey G. Cunningham, 2012: Atmospheric characteristics of cool season intermittent precipitation near Portland, Oregon. Funded by the U.S. Air Force.

Ph. D. Matthew A. Miller, 2010: Satellite observations of low marine clouds. Funded in part by a NASA Earth and Space Science Fellowship.

M.S. Happiness F. Mpunza, 2025: Assessment of the Accuracy of Numerical Weather Prediction Models in Africa and South America Using Surface Observations

M.S. Rachel E. Kennedy, 2023: Assessing Numerical Weather Prediction Model Forecast Skill Under Different Weather Conditions Using Surface Observations

- M.S. Laura M. Kent, 2021: Multi-year analysis of ice streamers within coastal northeast US winter storms
- M.S. Spencer R. Rhodes, 2019: Large-scale environments associated with southeast Atlantic marine stratocumulus cloud-clearing boundaries.
- M. S. John D. Hader, 2016: Propagating, cloud-eroding boundaries in southeast Atlantic marine stratocumulus.
- M.S. Nicole P. Hoban, 2016: Observed characteristics of mesoscale banding in coastal northeast U.S. snow storms.
- M.S. Nicole A. Corbin, 2016: Northern California's Central Valley spatial precipitation patterns associated with atmospheric rivers under different environmental conditions.
- M. S. Andrew M. Hall, 2014: Lifecycle characteristics of marine stratocumulus precipitation in the southeast Pacific.
- M.S. Matt C. Wilbanks, 2013: Near surface density currents observed in the southeast Pacific stratocumulus-topped marine boundary layer.
- M.S. Margaret L. Frey, 2013: Regional and interannual comparisons of marine stratocumulus precipitation.
- M.S. Justin A. Crouch, 2009: Multi-season observational study of the thermodynamic, kinematic and precipitation structures within flooding and typical storms in the Oregon Cascades.
- M.S. Barrett L. Smith II, 2007: The interaction of moisture fluxes and orographic precipitation over the mountains of northern California associated with a landfalling atmospheric river.
- M.S. M. Jordan Payne, 2007: Three-dimensional microphysical and dynamical structures of winter storms in the U.S. Pacific Northwest.
- M.S. Matthew A. Miller, 2007: Evaluation of TRMM satellite precipitation retrievals and satellite-observed characteristics of marine shallow clouds.
- M.S. Christopher T. Holder, 2007: The mesoscale characteristics of tropical oceanic convection within Kelvin and mixed Rossby-gravity wave events.

Current graduate student: Warren Lewis (Ph.D)

Advisor for non-thesis M.S. (dates are year when degree was completed): Katherine Rojowsky, 2010; John L'Heureux, 2012; Nan Zhang, 2012; Victoria Olivia, 2013, Christopher Harmon 2017.

Graduate committee member for students outside of NCSU: Kristin Goris (Ph. D., Duke U., 2009), David Stark (M.S., Stony Brook U., 2012), Sara Ganetis (Ph.D., Stony Brook U., 2017), Jason Endries (M.S., Appalachian State U., 2017), Laura Tomkins (M.S., U. Kansas, 2019), Sandra Vazquez Martin (Ph.D., Luleå University of Technology, Sweden, 2021), Phillip Yeh (Ph.D., Stony Brook U., 2025), Erin Leghart ((Ph.D., Stony Brook U., in progress), Ronak Patel (Ph.D. Caltech, in progress).

Undergraduate research supervision and mentoring: 44 undergraduates at NCSU including 17 women, 1 disabled student, and 5 under-represented minority students (* denotes presented poster at University Research Symposium and/or other conference):

Casey Burleyson* (2006-2007), David Stark* (2007-2009), M. Tai Bryant* (2007-2015), Lara Pagano (2007-2008), John Boyer* (2007), Kevin Smith (2007), Jay Bozeman (2007), Clay McGee* (2008-2010), Angel Adames* (2009), Christina Aldereguia* (2009-2010), Andrew Hall* (2009-2011) Jeremy Freeman (2009-2010), Matt Woelfle (2010-2012), Cameron White* (2011), Jennifer Dean (2012-2013), Nicole Corbin* (2013-2015), Megan Amanatides* (2014-2015), Sara Berry* (2014-2015), Jason Endries* (2014-2015), Spencer Rhodes* (2014-2016), Siu Kei (Edward) Chan* (2015-2016), Emma Scott* (2015-2017), Laura Tomkins* (2015-2017), Levi Lovell* (2015-2018), Luke Allen* (2017-2018), Daniel Hueholt* (2017-2020), Lindsay Hochstatter* (2017-2019), Ronak Patel* (2018-2021), Toby Peele* (2019-2022), Lily Bain (2019-2021), McKenzie Peters* (2019-2022), Robert Harley (2019-2021), Anya Aponte-Torres* (2020-2023), Jordan Fritz* (2021-2024), Declan Crowe* (2021-2024), Logan McLaurin* (2021-2025), Cameron Gilbert* (2023-2025), McKenzie Sevier* (2023-2025), Nathan Faulk* (2024-2025), Wayne Johnson* (2024-2026), Rebecca Moore* (2024-2026), Lily Price* (2025-2026), Philip Zimmer* (2025-), Evelyn Hannah (2026-), Morgan Roe (2026-), Bronsyn Wyatt (2026-).

Invited talks (since 2022):

NSF NCAR Radar Technology Workshop, Observation Needs to Advance Winter Storm Science. 10 March 2026, Online presentation at hybrid conference.

University of North Carolina- Charlotte, Department of Earth, Environmental, and Geographical Sciences Seminar Series: Evaluations of Weather Model Data Sets Compared to Observations - ERA5 Reanalysis and NOAA Global Forecast Model Strengths and Weaknesses. 13 Feb 2026, Charlotte, NC.

Naval Research Laboratory-Monterey Marine Meteorology Seminar: Evaluation of strengths and weaknesses of ERA5 reanalysis and observations of low cloudiness and the boundary layer in Eastern North Carolina. 5 August 2025, Monterey, CA

NOAA WPC-HMT joint Winter Weather Experiment Seminar Series: 3D characteristics of snow bands and implications for surface snowfall in Northeast Winter Storms, 18 Jan 2024. Online.

University of Maryland Earth System Science Interdisciplinary Center Seminar Series, “New insights on snowfall from observations of winter storms”, 4 December 2023. Online.

Lightning talk for GIS Week, Center for Geospatial Analytics, “The power of hourly weather data: Unveiling climate trends for pragmatic decision making”, 15 November 2023.

Guest Lecture on “Radar observations and their interpretation” for Colorado State University graduate class on Microphysics ATS 724, Professor Sonia Kreidenweis, 14 November 2023. Online.

International Precipitation Working Group, Snowfall Focus Group Seminar Series, Insights on Microphysics from Airborne and Surface-based Observations of Winter Storms, 8 November 2023. Online.

Naval Research Laboratory-Monterey, Marine Meteorology Seminar: Weather-conditioned evaluations of COAMPS and GFS forecasts relative to surface observations. 7 August 2023, Monterey, CA

Richard H. Johnson Symposium at the 102th American Meteorological Society Annual Meeting: Constraints on the interpretation of cause and effect between kinematic and microphysical structures within storms and potential remedies. 26 Jan 2022, Online presentation at Virtual Conference.

Public Media and Outreach (since 2018)

Talk at North Carolina School of Science and Mathematics, Durham, NC, A Meandering Journey into Observing the Atmosphere, 6 Nov 2025,

Radio EcoShock Interview with Alex Smith: Hours revealing changing climate, posted on 3 Dec 2025. ecoshock.net/downloads/ES_Yuter.mp3

Morning AgClips: Hourly weather data reveals climate trends in U.S, posted 12 Nov 2025 <https://www.morningagclips.com/hourly-weather-data-reveals-climate-trends-in-u-s/>

msn.com: Hourly weather data show shifting freeze and heat stress periods across US, posted 11/13/2025
<https://www.msn.com/en-us/weather/meteorology/hourly-weather-data-show-shifting-freeze-and-heat-stress-periods-across-us/ar-AA1QjnaM>

Phys.org: Hourly weather data show shifting freeze and heat stress periods across US, posted 11/12/2025
<https://phys.org/news/2025-11-hourly-weather-shifting-stress-periods.html>

Scienmag.com: Hourly weather data uncovers climate trends across the U.S., posted 11/12/2025:
<https://scienmag.com/hourly-weather-data-uncovers-climate-trends-across-the-u-s/>

Deutsche Welle : Fact check: Texas floods–cloud seeding theories dismissed
<https://www.dw.com/en/fact-check-texas-floods-cloud-seeding-theories-dismissed/a-73195643>
posted 7/8/2025

Phys.org: Beam me up: Using laser to detect moth migrations, posted 2/6/2024
<https://phys.org/news/2024-02-lasers-moth-migrations.html>

NCSU CALS News: Beam me up: Using laser to detect moth migrations, posted 2/5/2024
<https://cals.ncsu.edu/news/beam-me-up-using-lasers-to-detect-moth-migrations/>

NOAA WPC-HMT Winter Weather Experiment seminar series, 3D characteristics of snow bands and implications for surface snowfall in Northeast Winter Storms, 18 Jan 2024, online talk by Sandra Yuter and Laura Tomkins

NPR Short Wave Podcast, *Winter storm brings snow to the East Coast. But what's in a snowflake?*
<https://www.npr.org/2024/01/08/1198909104/short-wave-draft-01-08-2024>

NPR All Things Considered, *Just how big can a snowflake get? It depends on what you mean by 'snowflake'*
<https://www.npr.org/2023/12/25/1217356234/just-how-big-can-a-snowflake-get-it-depends-on-what-you-mean-by-snowflake>
aired 25 December 2023

Center for Geospatial Analytics Research News Spotlight (posted 15 November 2022) New Visualization Tool Helps Weather Forecasters and Researchers More Easily Identify and Study Bands of Heavy Snow
<https://cnr.ncsu.edu/geospatial/news/2022/11/15/new-visualization-tool-heavy-snow/>

Ladies Who Lunch Conversations with Leann Lavin (released 4 November 2022)
<https://www.facebook.com/LadiesWhoLunchConversations/videos/it-doesnt-get-more-exciting-topical-or-interesting-im-sure-youll-agree-it-was-su/431300802506609>

Deep Convection Podcast (released 5 July 2022), <https://deep-convection.org/2022/07/05/episode-7-sandra-yuter/>

NPR Marketplace, *With helium in short supply, scientists are worried*
<https://www.marketplace.org/2022/05/26/with-helium-in-short-supply-scientists-are-worried/>
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NCSU Partnerships Blog: *NC State Helps Delta Air Lines Fly Safer*
<https://partnerships.ncsu.edu/blog/2022/04/12/nc-state-helps-delta-air-lines-fly-safer/>, published 12 April 2022

New York Times, Forecasters Face Loss of Data as Weather Balloon Flights Are Cut, <https://nyti.ms/3uVqeIv>, published 5 April 2022.

WUNC 91.5 North Carolina Public Radio on NASA IMPACTS, piece aired on 10 March 2022 during morning local news.

Popular Science, NASA's storm-chasing planes fly through blizzards to improve snowfall forecasts. <https://www.popsci.com/science/nasa-planes-improve-snowstorm-forecasts/>, published 3 Feb 2022

WRAL TV on NASA IMPACTS field project, piece aired 8 Feb 2022 during 7 pm newscast.

Podcast for AAAS Science Magazine, 19 Jul 2018 <https://www.sciencemag.org.prox.lib.ncsu.edu/podcast/why-platypus-gave-suckling-and-how-gravity-waves-clear-clouds>

NCSU Press release: <https://news.ncsu.edu/2018/07/yuter-cloud-clearing/>

Article on snowflake research featured at <https://news.ncsu.edu/2018/12/how-big-can-snowflakes-be/>

Conference Abstracts (underlined names are students, post-docs and scientific staff directly supervised)

Miller, M. A. and S. E. Yuter, 2026: All-Sky Camera Upward-looking Thermal Infrared Cloud Characteristics. EGU 2026, A1.15 Advancing understanding of the circulation-coupling and Lagrangian evolution of clouds, May 2026, Vienna, Austria.

Lewis, W. E., S. E. Yuter, and M.A. Miller, 2026: Is ERA5 Fit for Purpose? A Global Multi-Variable Evaluation of Reanalysis Strengths and Weaknesses. Abstracts, EGU 2026, AS1.1 Numerical weather prediction, data assimilation and ensemble forecasting, May 2026, Vienna, Austria.

Johnson, W. S. E. Yuter, M. A. Miller, 2026: Differences among cloud water to rain water transitions within prevalent microphysics schemes. *Abstracts, 30th AMS 25th Student Conference*, January 2026, Houston, TX.

Moore, R. S. E. Yuter, M. A. Miller, 2026: Solar radiation, low-level cloud, and boundary layer characteristics over eastern North Carolina. *Abstracts, 30th AMS 25th Student Conference*, January 2026, Houston, TX.

Zimmer, P., M. A. Miller, S. E. Yuter, and L. B. Perry, 2026: Historical weather observations and potential future climate trends for the Summit Lake, Nevada region. *Abstracts, 30th AMS 25th Student Conference*, January 2026, Houston, TX.

Peng, X., D. Tyndall, C. Camacho, M. Janiga, B. Ruston, M. Liu, W. Lewis, S. Yuter, M. Miller, H. Christopherson, N. Baker, P. Pauley, T. Whitcomb, 2026: Introduction to the Navy Global Environmental Model Reanalysis (NAVGEM-RA), *Abstracts, 30th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface*, January 2026, Houston, TX.

McMurdie, L. A., R. M. Rauber, J. A. Finlon, B. Colle, C. Helms, G. Heymsfield, A. Janiszkeski, N. Leonardo, K. Lundstrom, M. Miller, L. Tomkins, P. Yeh, J. Yorks, S. Yuter, and T. Zaremba, 2025: Radar investigations of precipitation bands and elevated convection within winter cyclones during NASA IMPACTS. *Abstracts, AMS 41st Conference on Radar Meteorology*, August 2025, Toronto, Canada.

Rauber, R. M. L. A. McMurdie, G. M. McFarquhar, S. Yuter, A. Heymsfield, G. Heymsfield, J. Yorks, J. Finlon, T. Zaremba, V. Garcia, L. Allen, P. Roy, M. A. Miller, M. Han, A. Bansemmer, E.L. Dunnavan, S. D. Nicholls, S. Zhang, A. DeLaFrance, J. Douglas, P. Brechner, J. Schima, 2025: Radar investigations of the microphysical structure of winter cyclones and arctic frontal systems during NASA IMPACTS. *Abstracts, AMS 41st Conference on Radar Meteorology*, August 2025, Toronto, Canada.

Faulk, N., S. E. Yuter, and M. A. Miller, 2025: Lidar observations of aerosols, cloud bases, and inferred boundary layer stability. *Abstracts, AMS 24th Student Conference*, January 2025, New Orleans, LA.

- Gilbert, C., S. E. Yuter, M. A. Miller, and W. Lewis, 2025: A Simple Neural Network to Improve GFS Temperature and Dew Point Forecasts. *Abstracts, AMS 24th Student Conference*, January 2025, New Orleans, LA.
- Johnson, W., R. Moore, S. E. Yuter, and M. A. Miller, 2025: Observed Ambient Conditions in Winter Storm Cloud Sandwiches. *Abstracts, AMS 24th Student Conference*, January 2025, New Orleans, LA
- Moore, R., W. Johnson, S. E. Yuter, and M. A. Miller, 2025: Observed Ice Crystal Characteristics and Atmospheric Conditions Near Cloud Top in Northeast U.S. Winter Storms. *Abstracts, AMS 24th Student Conference*, January 2025, New Orleans, LA.
- Lewis, W., S. E. Yuter, and M.A. Miller, 2025: Evaluation of Global Reanalysis Strengths and Weaknesses using Surface Observations. *Abstracts, AMS 29th Conference on Numerical Weather Prediction (NWP)*, January 2025, New Orleans, LA.
- Perry, B., A. Seimon, K. E. Kunkel, J. Steenburgh, P. Veals, B. Maxwell, S. E. Yuter, T. Matthews, M. Andrade, M. Miller, M. Rado, S. Arias, L. Ticona, N. Montoya , 2025: Observations and Storm Characteristics of Maximum Liquid Equivalent Hourly Snowfall Rates in the Tropical Andes and Comparisons to other Regions. *Abstracts, AMS 39th Conference on Hydrology*, January 2025, New Orleans, LA.
- Fritz, J., L. M. Tomkins, S. E. Yuter, and M. A. Miller, 2024: Cataloging Snow Band Vertical Structure: Insights from NASA IMPACTS and NEXRAD Data. *Abstracts, AMS 23rd Annual Student Conference*, January 2024, Baltimore, MD.
- Sevier, M., K. Burris, S. E. Yuter, and M.A. Miller, 2024: Characteristics of Electromagnetic Wave Ducts in Different Geographic Locations. *Abstracts, AMS 23rd Annual Student Conference*, January 2024, Baltimore, MD.
- Gilbert, C. D., S. E. Yuter, R. E. Kennedy, and M. A. Miller, 2024: Numerical Weather Forecast Biases by Region and Climate Zones. *Abstracts, AMS 23rd Annual Student Conference*, January 2024, Baltimore, MD.
- Hueholt, D. M., S. E. Yuter, and M. A. Miller, 2024: Diagrams of Ice Growth Diagrams Designed for Educational Use. *Abstracts, AMS First Symposium on Cloud Physics*, January 2024, Baltimore, MD
- Warren, B. W., A. C. Michaelis, L. M. Tomkins, S. E. Yuter, A. M. Haberlie, V. A. Gensini, and W. S. Ashley, 2024, A Climatology and Characteristics of Midwest U.S. Heavy Snowfall Events, *Abstracts, AMS 28th Conference on Applied Climatology*, January 2024, Baltimore, MD
- Allen, L., S. E. Yuter, M. A. Miller, and L. M. Tomkins, 2023: Characteristics of Observed Surface Pressure Waves (gravity waves) in the Contexts of Storm Structure and Reflectivity Features. *Abstracts, AMS 20th Conference on Mesoscale Processes*, July 2023, Madison, WI.
- Oue, M., B. A. Colle, S. E. Yuter, P. Kollias, P. Yeh and L. M. Tomkins, 2023: Microscale updrafts within the U.S. Northeast coastal snowstorms using high-resolution cloud radar measurements. *Abstracts, AMS 20th Conference on Mesoscale Processes*, July 2023, Madison, WI.
- Tomkins, L. M., S. E. Yuter and M. A. Miller, 2023: 3D Characteristics of Snow Bands and Implications for Surface Snowfall in Northeast Winter Storms. *Abstracts, AMS 32th Conference on Weather Analysis and Forecasting*, July 2023, Madison, WI. [**outstanding student presentation award winner**]
- Miller, M. A., S. E. Yuter, and L. M. Tomkins, 2023: Passive Microwave Observations of Mesoscale Snow Bands from NASA IMPACTS. *Abstracts, AMS 20th Conference on Mesoscale Processes*, July 2023, Madison, WI.
- Kennedy, R., S. E. Yuter and M. A. Miller, 2023: Assessing the Meteorological Skill of the Navy Weather Model (COAMPS). *Abstracts, AMS 28th Conference on Numerical Weather Prediction*, July 2023, Madison, WI.
- Crowe, D., L. Allen, S. Yuter, L. Tomkins, and M. Miller, 2023: Airborne Observations of Environments for Ice Growth and Shrinkage in Winter and Summer Storms. *Abstracts, AMS Annual Meeting Student Conference*, January 2023, Denver, CO.
- Fritz, F., S. Yuter, L. Tomkins, R. Kennedy, and M. Miller, 2023: Evaluating Weather Forecasts of Winter Precipitation Start and End Times. *Abstracts, AMS Annual Meeting Student Conference*, January 2023, Denver, CO.
- McLaurin, L., L. Allen, S. Yuter, T. Peele, M. Miller, and L. Tomkins, 2023: Characteristics of Nearby Ice Particles in Winter Storms Sampled During NASA IMPACTS. *Abstracts, AMS Annual Meeting Student Conference*, January 2023, Denver, CO.

- Yuter, S. E., S. R. Rhodes, M. A. Miller, and D. B. Mechem, 2022: Marine stratocumulus cloud liquid water path diurnal and seasonal variations in the southeast Pacific and southeast Atlantic. *Abstracts, AGU Fall Meeting*, December 2022, Chicago, IL.
- Colle, B. A., M. Oue, S. E. Yuter, P. Yeh, and L. Tomkins, 2022: Characteristics of Microscale Updrafts in Winter Storms Accompanying Snow Bands Along the U.S. Northeast Coast Using High-Resolution Cloud Radar Observations. *Abstracts, AGU Fall Meeting*, December 2022, Chicago, IL.
- Jin, Q., Z. J. Horning, D. B. Mechem, S. E. Yuter, 2022: Exploring dynamic and thermodynamic properties of the environment during periods of rapid cloud-clearing over the southeast Atlantic in a high-resolution mesoscale model. *Abstracts, AGU Fall Meeting*, December 2022, Chicago, IL.
- McLaurin, L., S. E. Yuter, K. Burris, and M. Miller, 2022: Utilizing hourly weather station data to support pragmatic climate adaptation. *Abstracts, KIETS 2022 Climate Leaders Symposium*, 10-11 October 2022, Raleigh, NC.
- Allen, L. R., S. E. Yuter, D. Crowe and M. A. Miller, 2022: IMPACTS in situ observations in the context of previous field studies and model simulations. *NASA IMPACTS Science Team Meeting*, 26-28 July 2022, Boulder, CO.
- Burris, K., D. S. E. Yuter, M. A. Miller, L. M. Tomkins, and L. R. Allen, 2022: Specialized vertical profiles of winter storms to aid physical interpretation. *NASA IMPACTS Science Team Meeting*, 26-28 July 2022, Boulder, CO.
- Tomkins, L. M., S. E. Yuter, A. Aponte-Torres, and M. A. Miller, 2022: Analysis of ER-2 data to elucidate how the trajectories of ice particles are modified by horizontal air motions and wind shear. *NASA IMPACTS Science Team Meeting*, 26-28 July 2022, Boulder, CO.
- Oue, M., B. Colle, S. E. Yuter, P. Yeh, and L. M. Tomkins, 2022: Characteristics of microscale updrafts in snow storms accompanying snow bands along the U.S. northeast coast using high-resolution cloud radar observations. *NASA IMPACTS Science Team Meeting*, 26-28 July 2022, Boulder, CO.
- Yuter, S. E., M. A. Miller, L. R. Allen, L. M. Tomkins, and K. D. Burris, 2022: Constraints on interpretation of cause and effect between kinematic and microphysical structures within storms and potential remedies. *Abstracts, Richard H. Johnson Symposium, AMS Annual Meeting*, January 2022, Houston, TX.
- Peters, M. S. E. Yuter, A. Aponte, M. A. Miller, and L. R. Tomkins, 2022: The impacts of different building materials on nearby temperatures in the summer season in Raleigh, NC. *Abstracts, AMS Annual Meeting Student Conference*, January 2022, Houston, TX.
- Allen, L. R., M. A. Miller, S. E. Yuter, L. M. Tomkins, 2021: Analysis of 1 Hz, High Precision Pressure Sensor Data to Identify Gravity Waves. *Abstracts, AGU Fall Meeting*, December 2021, New Orleans, LA.
- Tomkins, L. M., S. E. Yuter, M. A. Miller, M. Petters, L. Allen, A. Aponte-Torres, 2021: Image muting of mixed precipitation to improve identification of regions of heavy snow from radar data. *Abstracts, AGU Fall Meeting*, December 2021, New Orleans, LA.
- Allen, L. R., L. M. Tomkins, S. E. Yuter, M. A. Miller, T. Peele, D. Hueholt, and R. Harley, 2021: Ambient environments for ice mass growth and shrinkage in the context of winter storm structure. *NASA IMPACTS Science Team Meeting*, September 2021, Seattle, WA.
- Peele, T., L. R. Allen, S. E. Yuter, R. Harley, D. Hueholt, M. A. Miller, and L. R. Tomkins, 2021: Ice growth environments and snow geometries samples during NASA IMPACTS January-February 2020. *NASA IMPACTS Science Team Meeting*, September 2021, Seattle, WA.
- Patel, R., S. Yuter, M. Miller, S. Rhodes, L. McCarthy, and T. Peele, 2020: Frequent GFS biases in winter season surface forecasts. *Abstracts, Unified Forecast System Users' Workshop*, July 2020, Boulder, CO (virtual).
- Rhodes, S., S. E. Yuter, M. A. Miller, R. N. Patel, D. B. Mechem, and L. M. Tomkins, 2019: Large-scale environments associated with marine stratocumulus cloud-eroding boundaries. *Abstracts, 18th Conference on Mesoscale Processes*, July 2019, Savannah, GA.
- Tomkins, L. M., D. B. Mechem, S. R. Rhodes, S. E. Yuter and M. A. Miller, 2019: Exploring mechanisms of stratocumulus clearing over the southeast Atlantic. *Abstracts, 18th Conference on Mesoscale Processes*, July 2019, Savannah, GA.
- Yuter, S. E., D. M. Hueholt, M. A. Miller, P. C. Kennedy, S. R. Rhodes, M. T. Bryant, and R. N. Patel, 2019: Local environments for ice growth in winter storms. *Abstracts, 18th Conference on Mesoscale Processes*, July 2019, Savannah, GA.

- Miller, M. A., S. E. Yuter, J. Hader, N. P. Hoban, and D. Hueholt, 2019: How are gravity waves influencing clouds and precipitation? *2019 Gordon Research Conference on Radiation and Climate*, July 2019, Lewiston, ME.
- Rhodes, S., L. Hochstatter, M. A. Miller, S. E. Yuter, 2019: Motion characteristics of propagating cloud-eroding boundaries in the subtropical southeast Atlantic. *Abstracts, AMS 18th Annual Student Conference*, January 2019, Phoenix, AZ.
- Hueholt, D., S. E. Yuter, M. A. Miller, L. Lovell and P. Kennedy, 2019: High-resolution spatial and temporal observations of generating cells and waves in Colorado snowstorms. *Abstracts, AMS 18th Annual Student Conference*, January 2019, Phoenix, AZ.
- Patel, R. N., S. E. Yuter, M. A. Miller, 2019: Variability of the urban heat island in Raleigh, NC. *Abstracts, AMS 18th Annual Student Conference*, January 2019, Phoenix, AZ.
- Tomkins, L. M., D. B. Mechem, S. E. Yuter, M. A. Miller and S. Rhodes, 2019: WRF simulations of episodes of stratocumulus clearing over the southeast Atlantic. *Abstracts, AMS Symposium on Aerosol-Cloud-Climate Interactions*, January 2019, Phoenix, AZ.
- Miller, M.A., N. P. Hoban, and S. E. Yuter, 2018: Detecting waves in Doppler radial velocity observations. *Abstracts, AGU Fall 2018 Meeting*, 10 Dec 2018, Washington, D.C.
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- Allen, L. S. E. Yuter, L. Tomkins and M. A. Miller, 2018: Snow band movement and rain occurrence in northeast U.S. winter storms. *Abstracts, AMS 17th Annual Student Conference*, January 2018, Austin, TX.
- Hueholt, D., S. E. Yuter, M. A. Miller, L. Lovell and L. Allen, 2018: Characteristics of temperature inversions in wintery mix precipitation events. *Abstracts, AMS 17th Annual Student Conference*, January 2018, Austin, TX.
- Lovell, L., S. E. Yuter, M.A. Miller and E. Scott, 2018: Snowflake mixtures in coastal northeast United States winter storms. *Abstracts, AMS 17th Annual Student Conference*, January 2018, Austin, TX.
- Ganetis, S. A., B. A. Colle, N. P. Hoban, and S. E. Yuter, 2017: Environmental conditions and physical processes for snowbands in Northeast U.S. winter storms. *Abstracts, 18th Cyclone Workshop*, 1-6 October 2017, Sainte-Adèle, Québec, Canada.
- Ganetis, S. A., B. A. Colle, N. P. Hoban, and S. E. Yuter, 2017: Environmental conditions promoting snowbands in Northeast U.S. winter storms. *Abstracts, 17th Conference on Mesoscale Processes*, 24-27 July 2017, San Diego, CA.
- Ganetis, S. A., B. A. Colle, N. P. Hoban, and S. E. Yuter, 2017: Multi-bands in the Comma Head of the 26-27 December 2010 Northeast U.S. Winter Storm. *Abstracts, 17th Conference on Mesoscale Processes*, 3-6 24-27 July 2017, San Diego, CA.
- Miller, M. A., S. E. Yuter, S. Rhodes, E. Scott, L. Lovell, B. A. Colle, L. Allen, M.T. Bryant, D. M. Hueholt and L. M. Tomkins, Complex aggregates within coastal northeast U.S. snow storms. *Abstracts, 17th Conference on Mesoscale Processes*, 3-6 24-27 July 2017, San Diego, CA.
- Yuter, S. E., N. P. Hoban, S. A. Ganetis, M. A. Miller, B. A. Colle, L. M. Tomkins, L. Lovell, E. M. Scott, L. R. Allen, D. M. Hueholt, and M. T. Bryant, 2017: Snow bands and velocity waves within northeast U.S. snow storms. *Abstracts, 17th Conference on Mesoscale Processes*, 3-6 24-27 July 2017, San Diego, CA.
- Endries, J. L., L. B. Perry, S. Yuter, A. Seimon, M. Andrade, G. Mamani, M. Bonshoms, F. Velarde, R. Winkelmann, M. Chchills, N. Montoya, and S. Arias, 2017: Vertical structure and characters of precipitation in the tropical high Andes of Bolivia and southern Peru., *Abstracts, Robert A. Houze, Jr., Symposium at 97th American Meteorological Society Annual Meeting*, January 2017, Seattle, WA.
- Ganetis, S. A., B. A. Colle, N. P. Hoban, and S. E. Yuter, 2017: Environmental conditions promoting snow bands in Northeast U.S. winter storms. *Abstracts, 28th Conference on Weather Analysis and Forecasting*, January 2017, Seattle, WA.
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- Hoban, N. P., S. E. Yuter, L. Tomkins, S. A. Ganetis, M. A. Miller, L. Lovell, S. R. Rhodes, E. Scott, and B. A. Colle, 2017: Observed characteristics of mesoscale banding in coastal northeast U.S. snow storms. *Abstracts, 28th Conference on Weather Analysis and Forecasting*, January 2017, Seattle, WA.

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- Yuter, S. E., and D. B. Mechem, 2017: Reflections on radar observations of mesoscale precipitation. *Abstracts, Robert A. Houze, Jr., Symposium at 97th American Meteorological Society Annual Meeting*, January 2017, Seattle, WA.
- Corbin, N. A., S. E. Yuter and D. E. Kingsmill, 2016: Spatial precipitation patterns associated with atmospheric river storms over the complex terrain of Northern California. *Abstracts, AMS 17th conference on Mountain Meteorology*. June 2016, Burlington, VT.
- Amanatides, M., S. Berry, N. A. Corbin, J. Endries, M. A. Miller, and S. E. Yuter, 2015: Radar observations of storms for education. *Abstracts, 14th Annual AMS Student Conference*, 4 Jan 2015, Phoenix, AZ.
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- Hoban, N. P., S. E. Yuter, S. A. Ganetis, B. A. Colle, and N. A. Corbin, 2015: Observed characteristics of mesoscale snow bands in the coastal northeast U.S. *Abstracts, 16th Conference on Mesoscale Processes*, 3-6 August 2015, Boston, MA.
- Miller, M. A., M. L. Frey and S. E. Yuter, 2015: Regional and interannual comparisons of marine stratocumulus precipitation detected using an AMSR-E 89-GHz passive microwave based method. *Abstracts, 20th Conference on Satellite Meteorology and Oceanography, AMS Annual Meeting*, Jan 2015, Phoenix, AZ.
- Rhodes, S., J. Endries and S. Yuter, Atmospheric conditions and processes associated with different degrees of snowflake riming. *Abstracts, 14th Annual AMS Student Conference*, 4 Jan 2015.
- Scott, E., J. Endries, M. T. Bryant and S. Yuter, 2015: Freshly falling snow: Identifying new snowflake geometries from photographs. *AGU Virtual Poster Showcase*, Nov 2015. Third prize winner.
- Yuter, S. E. , N. A. Corbin, M. A. Miller, S. M. Ellis and P. C. Kennedy, 2015: Radar Observations of Storms for Education: A bridge between idealized conceptual diagrams and real weather. *Abstracts, 24th Symposium on Education, AMS Annual Meeting*, 4-8 Jan 2015, Phoenix, AZ.
- Yuter, S. E., N. A. Corbin, M. A. Miller, S. M. Ellis and P. C. Kennedy, 2015: Radar Observations of Storms for Education: Real storm examples for the mesoscale course classroom. *Abstracts, 16th Conference on Mesoscale Processes*, 3-6 August 2015, Boston, MA.
- Yuter, S. E., 2015: Mysterious marine stratocumulus. *Abstracts, AGU Fall Meeting*, Dec 2015.
- Garrett, T. J. and S. E. Yuter, 2014: Multi-Angle Snowflake Camera observations of the effects of turbulence and temperature on hydrometeor fallspeed. *Abstracts, 14th AMS Conference on Cloud Physics*, Boston, MA, July 2014.
- Yuter, S. E. and T. J. Garrett, 2014: Observed influence of riming, temperature, and turbulence on the fallspeed of solid precipitation. *Abstracts, AGU Fall Meeting*, Dec 2014.
- Colle, B, A. Molthan, R. Yu, D. Stark and S. Yuter, 2013: Evaluation of model microphysics within precipitation bands of extratropical cyclones, *Abstracts, AGU Fall Meeting*, Dec 2013.
- deSzoek, S. P., D. B. Mechem, and S. E. Yuter, 2013: The relationship between lower tropospheric stability and marine stratiform cloudiness from seasonal to daily time scales. *Abstracts, AGU Fall Meeting*, Dec 2013.
- Hall, A. M., and Yuter, S.E., 2013: Lifecycle characteristics of drizzle cells in the southeast Pacific. *Abstracts, 15th Conference on Mesoscale Processes.*, 6-9 Aug. 2013, Portland, OR.
- Perry, L.B., S.J. Keighton, L.G. Lee, D.K. Miller, S.E. Yuter, C.E. Konrad, M.T. Bryant. 2013. Synoptic influences on snowfall event characteristics in the southern Appalachian Mountains. *Proceedings of the 70th Eastern Snow Conference*, 4-6 June 2013, Huntsville, ON, 141-157.
- Yuter, S.E., 2013: Atmospheric characteristics of cool-season intermittent precipitation near Portland, Oregon. *Abstracts, 15th Conference on Mesoscale Processes.*, 6-9 Aug. 2013, Portland, OR.
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- Kingsmill, D. E., P. Neiman, B. Moore. M. Hughes, S. Yuter and M. Ralph, 2012: Kinematic and thermodynamic structure of the Sierra Barrier Jet during a land-falling winter storm in northern California *Abstracts, 15th Conference on Mountain Meteorology*, Steamboat Springs, CO, 20-24 August 2012.
- Yuter, S. E., T. J. Garrett, C. Fallgatter, K. Shkurko, D. Howlett, J. Dean and N.R. Hardin, 2012: A new instrument for high resolution stereoscopic photography of falling hydrometeors with simultaneous measurement of fall speed. *Abstracts, AGU Fall Meeting*, Dec 2012.
- Biasutti, M., A. H. Sobel, S. E. Yuter, C. D. Burleyson, 2011: Frequency and intensity of precipitation events as seen by the TRMM Precipitation Radar. *Abstracts, AGU Fall Meeting*, Dec 2011.
- Allen, G., G. Vaughan, T. Toniazzo, H. Coe, P. Connolly, S. E. Yuter, C. D. Burleyson, P. Minnis, and J. K. Ayers, and C. D. Burleyson, 2011: Mesoscale variability of turbulence-generating mechanisms in southeast-Pacific stratocumulus. *Abstracts, 14th Conference on Mesoscale Processes.*, 1-4 Aug. 2011, Los Angeles, CA.
- Colle, B. A., D. A. Stark, and S. E. Yuter, 2011: An observed and simulated cloud microphysical perspective of snowbands within coastal Northeast U.S. winter storms. *Abstracts, 14th Conference on Mesoscale Processes.*, 1-4 Aug. 2011, Los Angeles, CA.
- Cunningham, J. G., S.E. Yuter, and B.A. Colle, 2011: Examining the nature and impact of Pacific Northwest cool season intermittent precipitation using objective radar tracking. *Abstracts, 14th Conference on Mesoscale Processes.*, 1-4 Aug. 2011, Los Angeles, CA.
- deSzoek, S. P., N. Elmer, C. D. Burleyson, P. Zuidema, S. E. Yuter, C. W. Fairall, 2011: The eastern pacific diurnal cycle of clouds, solar forcing, and tropospheric waves. *Abstracts, AGU Fall Meeting*, Dec 2011.
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- Hardin, N.R., S.E. Yuter, A.M. Hall, J.G. Cunningham, and B.A. Colle, 2011: Observed vertical structure of snow storms in Steamboat Springs, CO: Orographic enhancement in a high altitude environment. *Abstracts, 14th Conference on Mesoscale Processes.*, 1-4 Aug. 2011, Los Angeles, CA.
- Kingsmill, D., P. J. Neiman, S. E. Yuter, M. A. Hughes, B. Moore, 2011: Three-dimensional structure and evolution of the Sierra Barrier Jet: A CalWater case study from 14-16 February 2011. *Abstracts, AGU Fall Meeting*, Dec. 2011.
- McConnell, D. A., S. E. Yuter, C. D. Burleyson, N. R. Hardin, K. Ryker and J. A. Stempien, 2011: Building successful self-regulated learners: What 2000+ students have to tell us. *Abstracts, 2011 GSA Annual Meeting*, 9–12 October 2011, Minneapolis, MN.
- Stark, D. A., B. A. Colle and S. E. Yuter, 2011: Microphysical evolution within snow storms over Long Island, NY. *Abstracts, 24th Conference on Weather and Forecasting*, 23–27 Jan. 2011, Seattle, WA.
- Yuter, S.E., A. M. Hall, C. D. Burleyson, D. Leon and A. Brewer, 2011: Long-lived drizzle cells in inversion-topped boundary layers. *Abstracts, 14th Conference on Mesoscale Processes.*, 1-4 Aug. 2011, Los Angeles, CA.
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Service within NC State (last 6 years)

MEAS Undergraduate Curriculum Committee (2022-), Faculty advisor to Broadcast Meteorology Club (2011-), College of Sciences Professors of Distinction Committee (2023-), Faculty mentor for Assistant Professor Camilo Rey-Sanchez (2021- 2025), Data Science Initiative Advisory Council (2016-2021), Chair of MEAS ETF Committee (2011-2021), College of Sciences ETF Committee (2019-2021), O. Max Gardner Award Committee (2018-2021), MEAS Faculty Search Committee (Boundary Layer position), (2020).