

Steven M. Cavallo

University of Oklahoma, School of Meteorology
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EDUCATION

- *Ph.D.*, Atmospheric Sciences
University of Washington, Seattle, WA, 2009
Advisor: Dr. Gregory J. Hakim
- *M.S.*, Atmospheric Sciences
University of Washington, Seattle, WA, 2006
Advisor: Dr. Gregory J. Hakim
- *B.S., Summa Cum Laude*, Meteorology
Florida State University, Tallahassee, FL, May 2003
Minors: Mathematics, Physics, Computer Science
Advisors: Dr. Albert Barcilon, Dr. Phillip Cunningham

PROFESSIONAL EXPERIENCE

- **Professor** **July 2025-Present**
University of Oklahoma, School of Meteorology
Chair, School of Meteorology Graduate Studies (August 2017 - Present)
Affiliate Faculty, Data Institute for Societal Challenges (DISC) (August 2021 - Present)
Affiliate Faculty, South Central Climate Adaptation Science Center (August 2018 - Present)
Affiliate Faculty, Center for Analysis and Prediction of Storms (CAPS) (August 2012 - Present)
- **Associate Professor** **July 2017-June 2025**
University of Oklahoma, School of Meteorology
Chair, School of Meteorology Graduate Studies (August 2017 - Present)
Affiliate Faculty, Data Institute for Societal Challenges (DISC) (August 2021 - Present)
Affiliate Faculty, South Central Climate Adaptation Science Center (August 2018 - Present)
Affiliate Faculty, Center for Analysis and Prediction of Storms (CAPS) (August 2012 - Present)
- **Assistant Professor** **November 2011-June 2017**
University of Oklahoma, School of Meteorology
Fellow of the Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)
- **Postdoctoral Fellow** **June 2009-October 2011**
National Center for Atmospheric Research, MMM Division
National Science Foundation Office of Polar Programs
Postdoctoral advisors: Dr. Chris Snyder and Dr. Chris Davis
Arctic vortex dynamics, data assimilation, real-time numerical modeling with Advanced Hurricane WRF (AHW) model, model development.
- **Graduate Research Assistant** **Fall 2003-June 2009**
Department of Atmospheric Sciences, University of Washington
Model physics and interactions, vortex dynamics, and Arctic climate.
Developed and implemented a real-time modeling system and web page.
- **Academic Tutor** **Fall 2006-June 2009**
Student-Athlete Academic Services, University of Washington

Tutored regularly for beginning and advanced atmospheric science, mathematics, physics, and geography classes for individuals and large groups.

COMPUTER EXPERIENCE

Numerical Models: Model for the Prediction Across Scales (MPAS), Weather and Research Forecasting (WRF), Community Earth System Model (CESM), E3SM, Advanced Hurricane WRF (AHW), Rapid Radiative Transfer Model (RRTM)

Programming Languages: Fortran 77/90, C, HTML, LaTeX, Python

High performance computing (HPC): Extensive experience with HPC at NCAR on Bluefire, Yellowstone, Cheyenne. Maintained a Xeon64 hex core 2.6 GHz CPU consisting of 10 computing nodes and 240 processors for my research group for over 12 years

Software and Operating Systems: Matlab, NCL, GEMPAK, IVE, GARP, Unix, Linux, Adobe Illustrator, MS Word, MS Excel, MS Powerpoint

AWARDS, HONORS, MEMBERSHIPS, AND ACTIVITIES

- **Primary student advisor for:** 4 Postdoctoral Research Associates, 7 Ph.D. students through successful dissertation defense, 9 M.S. students through successful completion of M.S. theses, 3 NSF REU undergraduate students (all in underrepresented groups), 24 undergraduate students in 9 Senior Capstone Projects, 1 student in Undergraduate and Creative Activity (URCA) program, 3 undergraduate Honors Research Projects
- **Additionally served on student committees for:** 19 Ph.D. students (3 outside of OU), 20 M.S. students
- Inaugural Faculty Advisor, **LAMINAR student organization**. Strives to provide resources and connections to students, faculty, and staff in the College of Atmospheric & Geographic Sciences who are members of the LGBTQIA+ community and their allies (2023-present)
- Associate Editor, **Monthly Weather Review** (2015-present)
- Committee Member, **International Commission on Polar Meteorology (IPCM)** (2023 - Present).
- Committee Member, **MPAS Science Advisory Committee (MPAS-SAC)** (2023 - Present)
- Committee Member, **NCAR Computational and Information Systems Laboratory (CISL)** High Computing Allocation Panel (CHAP) (2015-2021)
- Member, **NCAR High Performance Computing (HPC)** User Group (NHUG). (2021 - Present)
- Member, Arctic Research Consortium of the United States (ARCUS). (2016 - Present)
- Committee Chair, Graduate Studies Committee, University of Oklahoma School of Meteorology (2017 - Present)
- Member, American Meteorological Society, American Geophysical Union, American Association for the Advancement of Science
- Recipient of **American Meteorological Society Cross Journal Award** for providing reviews containing detailed and constructive feedback for authors of multiple AMS journals.
- Faculty Award for Excellence in Service, University of Oklahoma School of Meteorology. (April 30, 2024).
- Award for Research Excellence, College of Atmospheric and Geographic Sciences. (August 8, 2022).
- Recipient of **Office of Naval Research** Young Investigator Award, 2016
- Recipient of National Science Foundation/**NSF** Postdoctoral Fellowship in Polar Regions Research (2010-2011)
- Recipient of **AMS James B. Macelwane Award** (2004)
- Recipient of **AMS Graduate Fellowship** (2003-2004)

- Recipient of **AMS Undergraduate Scholarship** (2002)
- Invited (lead) author for **Worldbook Encyclopedia** and for **American Meteorological Society** definition of *Polar Vortex*
- **Office of the Federal Coordinator for Meteorology Services and Supporting Research** Community Weather Research Working Group (2018-present)
- Invited **NSF panelist** in Antarctic Ocean and Atmospheric Sciences, Arctic Natural Sciences (2012, 2014, 2017, 2018)
- Reviewer for NSF, Austrian Science Foundation, Monthly Weather Review, Weather and Forecasting, Journal of Atmospheric Science, Tellus A, Quarterly Journal of Royal Meteorological Society, Journal of Geophysical Research, Journal of Climate, Weather and Climate Dynamics, Climate Dynamics, Bulletin of the American Meteorological Society, Journal of Advances in Modeling Earth Systems, AMS Monographs, International Journal of Remote Sensing, Atmosphere, Atmospheric Research, Journal of Applied Meteorology and Climatology, Asia-Pacific Journal of Atmospheric Science
- Invited **DOE panelist** in Atmospheric Systems Research (2021)
- Invited lecturer, **NCAR 2019 ASP colloquium**, Boulder, CO: “Quantifying and communicating uncertainty in high-impact weather prediction.”
- Invited speaker, **Stormtracks 2018**, Bolin Centre for Climate Research, Stockholm University, International Meteorological Institute in Stockholm (IMI), Utö, Sweden, August 2018
- Invited speaker, **ETH** Institute for Atmospheric and Climate Science, Zurich, Switzerland, May 2016
- Invited speaker, Joint **ECMWF/WWRP** workshop: Model Uncertainty, Reading, United Kingdom, April 2016
- Invited participant, **World Meteorological Organization US THORPEX** Science Legacy Planning, Silver Spring, Maryland
- Science committee, 17th **Cyclone Workshop**, Oct. 2015, Pacific Grove, CA
- Invited speaker: International Symposium on Earth-Science Challenges, October 2013, Kyoto University, Kyoto, Japan
- Invited speaker: The Weather-Climate Intersection: Advances and Challenges, **NCAR ASP** Summer Colloquium, June 2012, Boulder, Colorado
- Invited participant: **Climate Science Day on Capitol Hill**, February 2012, Washington D.C., USA; sponsored by **NCAR**.
- Invited speaker: Institute for Pure and Applied Mathematics (**IPAM**), March 2010, UCLA
- Invited speaker: **IGERT** Joint Program in Applied Mathematics and the Earth and Environmental Sciences, February 2009, Columbia University

INTERESTS

Polar regions weather and climate, Arctic-midlatitude interactions, vortex dynamics, atmosphere-ocean-sea ice interactions, predictability, mesoscale dynamics, synoptic dynamics, numerical weather prediction, climate modeling, ensemble modeling and data assimilation, subseasonal-to-seasonal prediction, data and statistical analysis, atmospheric physics, climate, climate change, planetary boundary layer processes, science communication

Grants awarded, pending, and/or active

Cavallo, S. M., (PI, 90% credit), Keyser, D., (Co-PI, 10% credit), *Observing the formation and development of tropopause polar vortices to enhance understanding of the dynamics and predictability of downstream high-impact weather systems*, Sponsored by **National Aeronautics and Space Administration/NASA**, Federal, \$998,119. (1 July 2024 - 30 June 2028).

McFarquhar, G. (Lead PI, 34% credit), **Cavallo, S. M.**, (PI, 33% credit), Dzambo, A. (PI, 33% credit) *Use of a Common Framework to Process and Analyze Vertical Profiles of Cloud Microphysical Properties In a Variety of Meteorological, Surface and Aerosol Conditions*, Sponsored by **U.S. Department of Defense, Air Force Office of Scientific Research — DOD-OSR**, Federal, \$599,937. (1 November 2025 - 31 October 2028).

Furtado, J. (PI, 34% credit), **Cavallo, S. M.**, (Co-PI, 33% credit), Ruppert, J., (Co-PI, 33% credit), *Toward Improving the Simulation and Prediction of Extratropical Northern Hemisphere Blocking Patterns and Extreme Weather*, Sponsored by **Department of Energy/DOE**, Federal, \$673,983. (1 September 2023 - 31 August 2026).

Cavallo, S. M., (PI, 50% credit), Bitz, C., (Co-PI, 50% credit), *Collaborative Research: Advancing knowledge of Arctic sea ice interactions with tropopause polar vortices and Arctic cyclones*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$551,480. (15 May 2022 - 30 April 2026).

Cavallo, S.M., (PI, 50% credit), Bitz, C., (Co-PI, 50% credit), *Advancing knowledge of Arctic sea ice interactions with tropopause polar vortices and Arctic cyclones*, Sponsored by **University of Washington**, \$57,365. (15 May 2025 - 15 October 2025).

Neeman, H. (PI, 32.4% credit), **Cavallo, S. M.**, (Co-PI, 1.5% credit), *CC*Network-Campus: The OneOklahoma Friction Free Network 400GE (OFFN-400) at the University of Oklahoma*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$645,829. (1 October 2025 - 30 September 2027).

Cavallo, S. M., (PI, 50% credit), Parsons, D. B., (Co-PI, 50% credit), *Scientific Program Overview: THINICE*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$22,613. (1 September 2019 - 31 August 2021).

Cavallo, S. M., (PI, 16.67% credit), Furtado, J., (PI, 16.67% credit), Diochnos, D., (PI, 16.67% credit), Ruppert, J., (PI, 16.67% credit), Lamkshimvarahan, S., (PI, 16.67% credit), Reinert, A., (PI, 16.67% credit), *Towards Improving the Prediction of Blocking Patterns and Extreme Weather on Subseasonal-to-Seasonal Timescales*, Sponsored by **Data Institute for Societal Challenges Big Ideas Challenge Seed Grant**, The University of Oklahoma, \$10,000. (July 7, 2021 - March 31, 2022).

Cavallo, S. M., (PI, 77% credit), Skamarock, W. S. (Co-PI, 23% credit), *Tropopause polar vortices and multi-scale Arctic predictability*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$1,376,963. (1 October 2017 - 30 September 2024).

Parsons, D. B., (PI, 60% credit), **Cavallo, S. M.**, (Co-PI, 40% credit), *Understanding and Reducing Barriers to Predictive Skill in the Arctic with a Focus on Arctic Cyclones and Sea Ice*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$688,188. (March 1, 2018 - May 8, 2024).

Parsons, D. B., (PI, 50% credit), **Cavallo, S.M.**, (Co-PI, 50% credit), *Expansion grant of Understanding and Improving Prediction of the Impacts of Rossby Wave Breaking on Tropopause Polar Vortices and Arctic Cyclones*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$184,161. (June 1, 2020 - May 31, 2023).

Cavallo, S. M., (PI, 100% credit), *Polar predictability and dynamics through multi-scale atmospheric vortices*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$526,637. (1 June 2016 - 31 May 2020).

Neeman, H. (PI, 20.25% credit), **Cavallo, S. M.**, (Co-PI, 2.6% credit), *Acquisition of a Regional Resource for Long-term Archiving of Large Scale Research Data Collections*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$645,829. (1 September 2018 - 31 August 2021).

Cavallo, S. M., (PI, 60% credit), Turner, D. D., (Co-PI, 40% credit), *Sensitivity of the midlatitude waveguide to the dynamics and observations of Arctic tropopause-based vortices*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$298,112. (August 1, 2015 - July 31, 2020).

Cavallo, S. M., (PI, 74% credit), Skamarock, W. S. (Co-PI, 26% credit), *Multi-scale Predictability with a New Coupled Non-hydrostatic global model over the Arctic*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$358,463. (May 1, 2015 - April 30, 2017).

Cavallo, S. M., (PI, 50% credit), Turner, D. D., (Co-PI, 50% credit), *Collaborative Research: Integrated Characterization of Energy, Clouds, Atmospheric State, and Precipitation at Summit (ICECAPS)*, Sponsored by **National Science Foundation/NSF-OPP**, Federal, \$251,134. (15 August 2013 - 31 July 2018).

Cavallo, S. M., (PI, 50% credit), Turner, D. D., (Co-PI, 50% credit), *Collaborative Research: Characterizing the Roles of Atmospheric Structure and Clouds on the Radiation and Precipitation Budgets at Summit, Greenland*, Sponsored by **National Science Foundation/NSF**, Federal, \$140,409. (1 October 2013 - 30 September 2016).

Cavallo, S. M., (Co-PI, 50% credit), Parsons, D. B., (PI, 50% credit), *Improved characterization and prediction of Antarctic weather and climate through utilization of the CONCORDIASI data set*, Sponsored by the **National Science Foundation/NSF-OPP**, Federal, \$273,473. (September 2012 - May 2016).

Cavallo, S. M., (PI, 74% credit), Skamarock, W. S. (Co-PI, 26% total credit), *Multi-scale Predictability with a New Coupled Non-hydrostatic Global Model over the Arctic*, Sponsored by **U.S. Department of Defense, Office of Naval Research**, Federal, \$453,625. (February 1, 2012 - January 31, 2016).

An * is indicated for students and/or postdocs advised by **S. M. Cavallo**.

Refereed publications and collections

- Aurnou, J. M., J. E. Moscaso, **S. M. Cavallo**, W. J. Church, J. H. Ruppert, A. Gonzalez, and R. Tripoli, 2025: Tabletop atmospheric rivers. *Bull. Amer. Meteor. Soc.*, **In Review**.
- Cavallo, Steven M.**, M. C. Frank*, and C. M. Bitz, 2025: Sea ice loss in association with Arctic cyclones. *Communications Earth & Environment*, **6 (1)**, 1–9, doi:10.1038/s43247-025-02022-9.
- Rotondo*, J. F., M. M. Wieringa*, C. M. Bitz, R. Clancy, and **S. M. Cavallo**, 2025: Sea ice albedo bounded data assimilation and its impact on modeling: A regional approach. *EGUsphere*, **2025**, 1–28.
- Riviere, G., et al., 2024: The THINICE field campaign: Interactions between Arctic cyclones, tropopause polar vortices, clouds and sea ice in summer. *Bull. Amer. Meteor. Soc.*, doi:10.1175/BAMS-D-23-0143.1.
- Riedel*, C. P., **S. M. Cavallo**, and J. L. Anderson, 2024b: Sensitivity of MPAS-DART analyses and forecasts to assimilation of 2016 NAWDEX special TPV observations. *Mon. Wea. Rev.*, **In Preparation**.
- Bray*, M. T. and **S. M. Cavallo**, 2024: Investigating Arctic Cyclone-Tropopause Polar Vortex Interactions with Idealized Observing System Simulation Experiments. *Mon. Wea. Rev.*, **152**, 1445–1467, doi:10.1175/MWR-D-23-0215.1.
- Wille, J. D. and **S. M. Cavallo**. et al., 2024: Examining atmospheric river life cycles in East Antarctica. *J. Geophys. Res.: Atmos.*, **129 (8)**.
- Riedel*, C. P., **S. M. Cavallo**, and J. L. Anderson, 2024a: Diagnosing biases over the Arctic in a ensemble cycling high-resolution global model. *Mon. Wea. Rev.*, **In Preparation**.
- Burzdak*, J., **S. M. Cavallo**, and D. Parsons, 2024: Characteristics and lifecycles of anti-cyclonic tropopause polar vortices. *J. Atmos. Sci.*, **Accepted with Minor Revisions**.
- Niu*, Q., et al., 2024: 62°S witnesses the transition of boundary layer marine aerosol pattern over the southern ocean (50°S-68°S, 63°E-150°E) during the spring and summer: Results from MARCUS (I). *J. Geophys. Res.: Atmos.*, **129 (9)**.
- Xi, X., D. Steinfeld, **S. M. Cavallo**, J. Wang, J. Chen, K. Zulpykharov, and G. M. Henebry, 2023: What caused the unseasonal extreme dust storm in Uzbekistan during November 2021? *Environmental Research Letters*.
- Gordon*, A. E., **S. M. Cavallo**, and A. K. Novak*, 2023: Evaluating common characteristics of Antarctic Tropopause Polar Vortices. *Journal of the Atmospheric Sciences*, **80 (1)**, 337–352.

- Clancy*, R., C. M. Bitz, E. Blanchard-Wrigglesworth, M. C. McGraw, and **S. M. Cavallo**, 2022: A cyclone-centered perspective on the drivers of asymmetric patterns in the atmosphere and sea ice during arctic cyclones. *Journal of Climate*, **35** (1), 73–89.
- Bray*, M. T. and **S. M. Cavallo**, 2022: Characteristics of long-track tropopause polar vortices. **3** (1), 251–278.
- Lillo*, S. P., **S. M. Cavallo**, D. B. Parsons, and C. Riedel, 2021: The role of a tropopause polar vortex in the generation of the January 2019 extreme arctic outbreak. *J. Atmos. Sci.*, **78** (9), 2801–2821, doi:10.1175/JAS-D-20-0285.1.
- Riedel*, C. P., **S. M. Cavallo**, and D. B. Parsons, 2021: Mesoscale prediction in the Antarctic using cycled ensemble data assimilation. *Mon. Wea. Rev.*, **149** (2), 443–462.
- Bray*, M., **S. M. Cavallo**, and H. Bluestein, 2021: Examining the relationship between tropopause polar vortices and severe weather outbreaks. *Wea. Forecasting*, **36** (5), 1799–1814.
- Borg*, S. M., **S. M. Cavallo**, and D. D. Turner, 2020: Characteristics of tropopause polar vortices based on observations over the greenland ice sheet. *J. Appl. Meteor. Climatol.*, **59** (11), 1933–1947.
- Blumberg*, W. G., D. D. Turner, **S. M. Cavallo**, J. Gao, J. Basara, and A. Shapiro, 2019: An analysis of the processes affecting rapid near-surface water vapor increases during the afternoon to evening transition in Oklahoma. *J. Appl. Meteor. Climatol.*, (2019).
- Szapiro*, N. and **S. M. Cavallo**, 2018: TPVTrack (v1.0): A watershed segmentation and overlap correspondence method for tracking tropopause polar vortices. *Geoscientific Model Development*, **11** (12), 5173–5187.
- Edwards-Opperman*, J., **S. M. Cavallo**, and D. D. Turner, 2018: The Occurrence and Properties of Long-Lived Liquid-Bearing Clouds over the Greenland Ice Sheet and Their Relationship to the North Atlantic Oscillation. *J. Appl. Meteor. Climatol.*, **57** (4), 921–935.
- Cohen*, A. E., et al., 2018: Bridging operational meteorology and academia through experiential education: The Storm Prediction Center in the University of Oklahoma classroom. *Bull. Amer. Meteor. Soc.*, **99** (2), 269–279.
- Parsons, D. B., et al., 2017: THORPEX research and the science of prediction. *Bull. Amer. Meteor. Soc.*, **98** (4), 807–830.
- Cohen*, A. E., **S. M. Cavallo**, M. C. Coniglio, H. E. Brooks, and I. L. Jirak, 2017: Evaluation of multiple planetary boundary layer parameterization schemes in southeast us cold season severe thunderstorm environments. *Wea. Forecasting*, **32** (5), 1857–1884.
- Cavallo, S. M.**, 2016: Polar vortex. *World Book Encyclopedia*, M. DuRoss, Ed., Scott Fetzer Company, Chicago, IL.

- Cavallo, S. M.**, et al., 2016: Polar vortex. *Glossary of Meteorology*, American Meteorological Society, Boston, MA, available online at http://glossary.ametsoc.org/wiki/Polar_vortex.
- Cavallo, S. M.**, 2016: O-O-Oklahoma, Where the (Arctic) Wind Comes Sweepin' Down the Plain. *Our Arctic Nation*, U.S. Department of State's Official Arctic Twitter account, Washington, D.C., accessed: 2016-08-02 at <https://medium.com/our-arctic-nation/week-27-oklahoma-9821a6f2a317#.fe83v3159>.
- Cavallo, S. M.**, J. Berner, and C. Snyder, 2016: Diagnosing model error from time-averaged tendencies in the weather research and forecasting model. *Mon. Wea. Rev.*, **144** (2), 759–779.
- Cohen*, A. E., **S. M. Cavallo**, M. C. Coniglio, and H. E. Brooks, 2015: A review of planetary boundary layer parameterization schemes and their sensitivity in simulating a southeast US cold season severe weather environment. *Wea. Forecasting*, **30**, 591–612, doi:10.1175/WAF-D-14-00105.1.
- Cavallo, S. M.** and G. J. Hakim, 2013: The physical mechanisms of tropopause polar cyclone intensity change. *J. Atmos. Sci.*, **70**, 3359–3373.
- Cavallo, S. M.**, R. T. Torn, C. Snyder, C. Davis, W. Wang, and J. Done, 2013: Evaluation of the Advanced Hurricane WRF data assimilation system for the 2009 Atlantic hurricane season. *Mon. Wea. Rev.*, **141** (2), 523–541.
- Cavallo, S. M.** and G. J. Hakim, 2012: Radiative impact on tropopause polar vortices over the arctic. *Mon. Wea. Rev.*, **140** (5), 1683–1702.
- Cavallo, S. M.**, J. Dudhia, and C. Snyder, 2011: A multilayer upper-boundary condition for longwave radiative flux to correct temperature biases in a mesoscale model. *Mon. Wea. Rev.*, **139** (6), 1952–1959.
- Davis, C. A., et al., 2011: High-resolution hurricane forecasts. *Computing in Science and Engineering*, **13**, 22–30, doi:10.1109/MCSE.2010.74.
- Cavallo, S. M.** and G. J. Hakim, 2010: The composite structure of tropopause polar cyclones from a mesoscale model. *Mon. Wea. Rev.*, **138** (10), 3840–3857, doi:10.1175/2010MWR3371.1.
- Cavallo, S. M.** and G. J. Hakim, 2009: Potential vorticity diagnosis of a tropopause polar cyclone. *Mon. Wea. Rev.*, **137** (4), 1358–1371.

An * is indicated for students and/or postdocs advised by **S. M. Cavallo**.

Proceedings or Conference Presentations

- Burg*, T. and **S. M. Cavallo**, 2025: Sensitivity of the February 2021 U.S. cold-air outbreak to tropopause polar vortex intensity. *33rd Conference on Weather Analysis and Forecasting and the 29th Conference on Numerical Weather Prediction*, New Orleans, LA, American Meteorological Society.
- Hauser*, S., L. Magnusson, **S. M. Cavallo**, J. Martin, and D. B. Parsons, 2025: The role of extratropical cyclones for large-scale forecast busts over Europe in ERA5 reforecasts. *10th Workshop on European Storms*, Bern, Switzerland.
- Hill, A., D. J. Bodine, **S. M. Cavallo**, B. G. Illston, Z. J. Lebo, and D. Schwartzman, 2025: Preparing the next generation of meteorological data scientists: Redesigning curricula for student success. *34th Conference on Education*, New Orleans, LA, American Meteorological Society.
- Cavallo, S. M.**, J. Doyle, J. Finlon, D. Keyser, A. Lang, S. LeBlanc, R. Torn, and A. Winters, 2025c: NURTURE Science Question 1 Overview. *NASA NURTURE Workshop 2025*, Hampton, Virginia, NASA.
- Cavallo, S. M.**, W. McCarty, A. Nehrir, and D. Chirica, 2025b: NURTURE Science Overview. *NASA NURTURE Workshop 2025*, Hampton, Virginia, NASA.
- Cavallo, S. M.**, W. McCarty, A. Nehrir, and D. Chirica, 2025a: NURTURE and NAWDIC: Bridging Upstream and Downstream Observations of the Atmospheric Dynamics Resulting in High-Impact Weather. *3rd International NAWDIC Workshop 2025*, Karlsruhe, Germany, HALO SPP 1294.
- Cavallo, S. M.**, W. McCarty, A. Nehrir, and D. Chirica, 2025e: NASA's NURTURE Campaign of High-Impact Winter Storms with the Boeing 777. *2025 Tropical Cyclone Operations and Research Forum (TCORF) Interdepartmental Hurricane Conference*, Gainesville, FL, NSF NCAR and NOAA.
- Rotondo*, J., C. M. Bitz, and **S. M. Cavallo**, 2025: Leveraging data assimilation for accurate sea ice state prediction. *Community Modeling and Innovation (CMI) symposium*, New Orleans, LA, American Meteorological Society.
- Chen*, N., R. C. **S. M. Cavallo**, J. Anderson, and C. M. Bitz, 2025: Impact of surface coupling and observations on Arctic cyclone forecast performance. *33rd Conference on Weather Analysis and Forecasting and the 29th Conference on Numerical Weather Prediction*, New Orleans, LA, American Meteorological Society.
- Cavallo, S. M.**, W. McCarty, A. Nehrir, and D. Chirica, 2025d: Feature Resolving and Tropopause Uncertainty Reconnaissance Experiment (NURTURE) project. *WMO WWRP Polar Coupled Analysis and Prediction for Services (PCAPS)*, Cambridge UK, British Antarctic Survey.

- Cavallo, S. M.** and D. Keyser, 2025c: Contributions to Science Question 3. *NASA NURTURE Workshop 2025*, Hampton, Virginia, NASA.
- Cavallo, S. M.** and D. Keyser, 2025b: Contributions to Science Question 2. *NASA NURTURE Workshop 2025*, Hampton, Virginia, NASA.
- Cavallo, S. M.** and D. Keyser, 2025a: Contributions to Science Question 1. *NASA NURTURE Workshop 2025*, Hampton, Virginia, NASA.
- Burg*, T. and **S. M. Cavallo**, 2024: Tropopause polar vortex intensity linkage to polar low development. *Polar Meteorology and Oceanography Special Symposium at 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- Hauser*, S., D. B. Parsons, **S. M. Cavallo**, and J. Martin, 2024: Synoptic-dynamical insights into large-scale “forecast busts” over europe in ERA5 medium-range reforecasts. *20th Cyclone Workshop*, St Sauveur, Quebec, Canada.
- Edelmon*, J. M., J. W. McAllister*, N. Bailey*, C. Watson*, and **S. M. Cavallo**, 2024: Statistical correlation between jet superpositions and extreme weather events in the winter/cool season. *23rd Annual Student Conference at the 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- Cavallo, S. M.**, C. Davis, J. Doyle, D. Keyser, A. Lang, L. McMurdie, R. Torn, and A. Winters, 2024b: North American Upstream Feature-Resolving and Tropopause Uncertainty Reconnaissance Experiment (NURTURE). *NAWDIC and AR Recon Workshop*, La Jolla, CA, The Scripps Institution of Oceanography.
- Clancy*, R., **S. M. Cavallo**, C. Bitz, and J. Anderson, 2024b: Insights into Arctic cyclones and tropopause polar vortices from data assimilation in variable resolution CESM2. *Polar Meteorology and Oceanography Special Symposium at 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- Clancy*, R., N. Chen*, **S. M. Cavallo**, J. Anderson, and C. M. Bitz, 2024a: Insights into Arctic cyclones and tropopause polar vortices from data assimilation in variable resolution CESM2. *20th Cyclone Workshop*, St Sauveur, Quebec, Canada.
- Cavallo, S. M.** and T. Burg*, 2024b: The impacts of tropopause vortex-vortex interactions on arctic cyclones. *Polar Meteorology and Oceanography Special Symposium at 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- Cavallo, S. M.** and T. Burg*, 2024a: The impact of multiple tropopause polar vortices on the Great Arctic Cyclone of 2012. *20th Cyclone Workshop*, St Sauveur, Quebec, Canada.
- Cavallo, S. M.**, C. Davis, J. Doyle, D. Keyser, A. Lang, L. McMurdie, R. Torn, and A. Winters, 2024a: Feature-resolving and tropopause uncertainty reconnaissance experiment (NURTURE). *20th Cyclone Workshop*, St Sauveur, Quebec, Canada.

- Xi, X., D. Steinfeld, **S. M. Cavallo**, J. Wang, J. Chen, and G. Henebrey, 2024: Extreme dust storms in central Asia associated with cold air outbreak and drought. *37th Conference on Climate Variability and Change at the 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- Frank*, M. and **S. M. Cavallo**, 2024: Comparison of arctic properties in CESM2 large ensemble and ERA5. *Polar Meteorology and Oceanography Special Symposium at 104th AMS Annual Meeting*, Baltimore, MD, American Meteorological Society.
- S. M. Cavallo**, J. Doyle, A. Lang, D. Parsons, and A. Winters, 2023: U.S. plans for contributions to NAWDIC. *NAWDIC Workshop*, Reading, UK, Large-scale dynamics and predictability group, KIT.
- S. M. Cavallo**, 2023b: Tropopause polar vortices and multi-scale Arctic predictability. *Office of Naval Research Annual Meeting*, Albany, NY, Office of Naval Research.
- Burg*, T. and **S. M. Cavallo**, 2023: Sensitivity of the february 2021 u.s. cold-air outbreak to tropopause polar vortex intensity. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- S. M. Cavallo**, 2023a: Investigating the relationship between tropopause polar vortices and arctic cyclone longevity. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- Bray*, M. and **S. M. Cavallo**, 2023: Investigating Arctic cyclone-tropopause polar vortex interactions with observing system simulation experiments. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- Frank*, M. and **S. M. Cavallo**, 2023: Comparison of Arctic cyclones in CESM2 large ensemble and ERA5. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- S. M. Cavallo** and O. Perrsen, 2023: Co-chair of Predictability of Arctic cyclones I. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- Burzdak*, J., **S. M. Cavallo**, and D. Parsons, 2023: Characteristics and lifecycles of anticyclonic tropopause polar vortices. *20th Conference on Weather Analysis and 32nd Conference on Weather and Forecasting and 28th Conference on Numerical Weather Prediction*, Madison, WI, American Meteorological Society.
- Cavallo, S. M.**, 2022a: Session chair of Arctic Cyclones and Tropopause- Polar Vortices. *17th Conference on Polar Meteorology and Oceanography*, Madison, WI, American Meteorological Society.

- Burg*, T. and **S. M. Cavallo**, 2022: Sensitivity of the February 2021 U.S. cold air outbreak to Tropopause Polar Vortex intensity. *17th Conference on Polar Meteorology and Oceanography*, Madison, WI, American Meteorological Society.
- Bhowmick, R., D. Comeau, J. Cassano, E. Cassano, **Cavallo, S. M.**, and W. Weijer, 2022: Role of tropopause polar vortices in modulating arctic cyclone climatology. *AGU Fall Meeting*, Chicago, IL, American Geophysical Union.
- Cavallo, S. M.**, 2022b: Multiple vortex interactions with Tropopause Polar Vortices and Arctic Cyclones. *17th Conference on Polar Meteorology and Oceanography*, Madison, WI, American Meteorological Society.
- Bray*, M. and **S. M. Cavallo**, 2022a: Investigating interactions between Arctic Cyclones and Tropopause Polar Vortices through observing system simulation experiments. *17th Conference on Polar Meteorology and Oceanography*, Madison, WI, American Meteorological Society.
- Bray*, M. and **S. M. Cavallo**, 2022b: Examining the relationship between tropopause polar vortices and tornado outbreaks. *31st Conference on Weather and Forecasting and 27th Conference on Numerical Weather Prediction*, Virtual.
- Burzdak*, J., **S. M. Cavallo**, and D. Parsons, 2022: Cyclonic tropopause polar vortices' (TPVs) connection to Rossby wave breaking and the genesis of anticyclonic TPVs. *17th Conference on Polar Meteorology and Oceanography*, Madison, WI, American Meteorological Society.
- Cavallo, S. M.**, J. Doyle, A. Winters, A. Lang, and D. Parsons, 2021: NAWDIC: U.S. Academic community overview. *Atmospheric Rivers Recon Workshop*, Virtual.
- Frank*, M. and **S. M. Cavallo**, 2021b: Is there a role of the beaufort sea high pressure in very rapid sea ice loss events? *16th Conference on Polar Meteorology and Oceanography*, Virtual.
- Burg*, T. and **S. M. Cavallo**, 2021: Impact of upstream tropopause polar vortex observations on the evolution of twin arctic cyclones in june 2020. *16th Conference on Polar Meteorology and Oceanography*, Virtual.
- Frank*, M. and **S. M. Cavallo**, 2021a: Comparisons of sea ice processes in observations and CESM2 data. *AGU Fall Meeting*, New Orleans, LA.
- Bray*, M. and **S. M. Cavallo**, 2021: Characteristics of long track tropopause polar vortices. *16th Conference on Polar Meteorology and Oceanography*, Virtual.
- Cavallo, S. M.** and M. Bray*, 2021: Characteristics of long-lived tropopause polar vortices over the Arctic. *Office of Naval Research Research Reviews*, Virtual.
- Cavallo, S. M.** and W. S. Skamarock, 2020: Tropopause polar vortices and multi-scale Arctic predictability. *ONR Arctic Cyclone DRI Workshop*, Virtual.

- Burg*, T. and **S. M. Cavallo**, 2020b: Tropopause polar vortex climatology and linkages with Rossby wave initiation. *American Geophysical Union Fall Meeting*, Virtual.
- Burg*, T. and **S. M. Cavallo**, 2020a: Sensitivity of the 2012 Arctic cyclone to sea ice and atmospheric initial conditions. *100th Annual Meeting of the American Meteorological Society*, Boston, MA.
- Lillo*, S., D. Parsons, and **S. M. Cavallo**, 2020: The role of a tropopause polar vortex in the January 2019 Arctic outbreak. *100th Annual Meeting of the American Meteorological Society*, Boston, MA.
- Frank*, M. and **S. M. Cavallo**, 2020: Evolution of coupled TPVs and surface cyclones prior to very rapid sea ice loss events. *American Geophysical Union Fall Meeting*, Virtual.
- Cohen*, A., **S. M. Cavallo**, M. Coniglio, H. Brooks, I. Jirak, and A. Gerard, 2020: Evaluation of multiple planetary boundary layer parameterization schemes in southeast U.S. cold season severe thunderstorm environments. *100th Annual Meeting of the American Meteorological Society*, Boston, MA.
- Clancy*, R. P., E. Blanchard-Wrigglesworth, C. M. Bitz, M. C. McGraw*, and **S. M. Cavallo**, 2020: Drivers of the spatial pattern of arctic sea ice response to arctic cyclones. *AGU Fall Meeting Abstracts*, Vol. 2020, A151–0001.
- Bray*, M. and **S. M. Cavallo**, 2019: Tropopause polar vortices and severe weather. *University of Oklahoma Undergraduate Research Symposium*, Norman, OK.
- Cavallo, S. M.**, 2019b: Tropopause polar vortices and multi-scale Arctic predictability. *ONR Arctic Cyclone DRI Workshop*, Boulder, CO, Naval Research Laboratory.
- Cavallo, S. M.**, 2019c: THINICE: Project motivation and goals. *Workshop on Airborne Activities in the Arctic*, Bremen, Germany, Arctic Amplification: Climate Relevant Atmospheric and Surface Processes (AC3).
- Riedel*, C. and **Cavallo, S. M.**, 2019: Sensitivity of forecasts to special observations in a TPV during the 2016 NAWDEX field campaign using the MPAS-DART ensemble data assimilation system. *19th Cyclone Workshop*, Seeon, Bavaria, Germany.
- Riedel*, C. and **S. M. Cavallo**, 2019c: MPAS-DART Ensemble Data Assimilation System in Polar Regions. *1st Annual Joint WRF and MPAS Users' Workshop*, Boulder, CO, American Meteorological Society.
- Strey*, S. T. and **S. M. Cavallo**, 2019: Investigating the relationship between summer cyclones in the Arctic and local changes in sea ice characteristics through observations and MPAS-CESM output. *15th Conference on Polar Meteorology and Oceanography*, Boulder, CO, American Meteorological Society.
- Riedel*, C. and **S. M. Cavallo**, 2019b: Identification of systematic model bias in the Arctic atmosphere using cycled data assimilation and a high-resolution global model. *15th Conference on Polar Meteorology and Oceanography*, Boulder, CO, American Meteorological Society.

- Cavallo, S. M.**, 2019a: Characteristics of Arctic cyclones and tropopause polar vortices during very rapid sea ice loss events during the Arctic summer. *6th Polar Prediction Workshop*, Norman, OK, The Cooperative Institute for Mesoscale Meteorological Studies.
- Riedel*, C. and **S. M. Cavallo**, 2019a: Bias in the Arctic atmosphere using cycled data assimilation and a high-resolution global model. *6th Polar Prediction Workshop*, Norman, OK, The Cooperative Institute for Mesoscale Meteorological Studies.
- Frank*, M. C. and **S. M. Cavallo**, 2019: Atmospheric conditions preceding very rapid sea ice loss events. *15th Conference on Polar Meteorology and Oceanography*, Boulder, CO, American Meteorological Society.
- Cavallo, S. M.** and N. Szapiro*, 2019: Arctic cyclone characteristics in a changing sea of ice. *15th Conference on Polar Meteorology and Oceanography*, Boulder, CO, American Meteorological Society.
- Strey*, S. T. and **S. M. Cavallo**, 2018: Investigating the relationship between summer cyclones in the Arctic and local changes in sea ice characteristics through observations. *Sea Ice–Ocean–Atmosphere Interactions in the “New” Arctic and Southern Oceans*, Washington, D.C., American Geophysical Society.
- Cavallo, S. M.**, D. Parsons, and C. Bitz, 2018: Arctic cyclones, tropopause polar vortices, and sea ice: Is there a connection?, Alexandria, VA. National Science Foundation.
- Szapiro*, N. and **S. M. Cavallo**, 2017: Impacts of tropopause polar cyclones from days to seasons. *The Arctic Science Summit Week 2017*, Prague, Czech Republic.
- Lusk*, D. J. and **S. M. Cavallo**, 2017: A climatology of TPVs in the ERA-Interim dataset. *14th Conference on Polar Meteorology and Oceanography*, Seattle, WA, American Meteorological Society.
- Cavallo, S. M.** and N. Szapiro*, 2017: Atmospheric dynamics and predictability of sea ice. *Polar Prediction Workshop 2017 and 2nd Sea Ice MLP Meeting*, Bremerhaven, Germany, World Meteorological Organization.
- Cavallo, S. M.**, N. Szapiro*, and U. Gutierrez*, 2017: Atmospheric dynamics and impacts on abrupt Arctic summer sea ice loss events. *14th Conference on Polar Meteorology and Oceanography*, Seattle, WA, American Meteorological Society.
- Gutierrez*, U., N. Szapiro*, and **S. M. Cavallo**, 2017: Arctic weather and abrupt sea ice loss. *16th Annual AMS Student Conference*, Seattle, WA, American Meteorological Society.
- Row*, M. P., **S. M. Cavallo**, D. D. Turner, and A. Solomon, 2016: Synoptic and local influences on a summertime, long-lived, mixed-phase cloud event over Summit, Greenland: A modeling perspective. *96th American Meteorological Society Annual Meeting*, New Orleans, LA, American Meteorological Society.

- Cohen*, A. C. and **S. M. Cavallo**, 2016: The Storm Prediction Center in the University of Oklahoma classroom: Applications of meteorological theory to severe-thunderstorm forecasting. *96th American Meteorological Society Annual Meeting*, New Orleans, LA, American Meteorological Society.
- Cavallo, S. M.**, 2016c: Sensitivity of the midlatitude waveguide to the dynamics and observations of tropopause polar vortices. *Invited lecture*, Zurich, Switzerland, Swiss Federal Institute of Technology in Zurich (ETH).
- Cavallo, S. M.**, 2016a: Processes surrounding a multiscale feature from polar regions to lower latitudes. *Second University of Oklahoma-Nanjing University Symposium on Weather and Climate Research*, Nanjing, China, University of Nanjing.
- Cavallo, S. M.**, 2016e: Linking arctic to lower latitude processes through resilient tropopause-based vortices. *Invited colloquium*, Fort Collins, CO, Colorado State University.
- Edwards-Opperman*, J., D. D. Turner, and **S. M. Cavallo**, 2016: Large-scale influences on the occurrence and maintenance of mixed phase clouds over the Greenland ice sheet. *96th American Meteorological Society Annual Meeting*, New Orleans, LA, American Meteorological Society.
- Cavallo, S. M.**, 2016b: Global influences from polar born processes: Tropopause-based vortices over the arctic. *Invited colloquium*, Zurich, Switzerland, Swiss Federal Institute of Technology in Zurich (ETH).
- Skamarock, W. S., L. J. Wicker, A. J. Clark, and **S. M. Cavallo**, 2016: Extended-range severe weather guidance using a global convection-permitting model (invited presentation). *96th American Meteorological Society Annual Meeting*, New Orleans, LA, American Meteorological Society.
- Cavallo, S. M.** and W. S. Skamarock, 2016: Extended range prediction over the Arctic with the Model for the Prediction Across Scales. *DRI Meeting for Seasonal Prediction*, Monterey, CA, Naval Research Lab.
- Riedel*, C. and **S. M. Cavallo**, 2016b: Evaluation of the spread-skill relationship on a busted forecast using an MPAS pseudo-ensemble. *17th WRF Users' Workshop*, Boulder, CO, National Center for Atmospheric Research.
- Riedel*, C. and **S. M. Cavallo**, 2016a: Ensemble data assimilation in the Antarctic Mesoscale Prediction System (AMPS) over the Southern Hemisphere. *Second University of Oklahoma-Nanjing University Symposium on Weather and Climate Research*, Nanjing, China, University of Nanjing.
- Cavallo, S. M.**, 2016d: Diagnosing systematic numerical weather prediction model bias over the Antarctic from short-term forecast tendencies. *Invited lecture*, Zurich, Switzerland, Federal Office of Meteorology and Climatology/MeteoSwiss.

- Cavallo, S. M.**, 2016f: Arctic precursors to high impact midlatitude weather. *Invited colloquium*, Madison, WI, University of Wisconsin Madison.
- Riedel*, C. and **S. M. Cavallo**, 2015Pa: Sensitivities in cyclone forecasts for the antarctic region using an EnKF method with the AMPS model. *17th Cyclone Workshop*, Pacific Grove, CA.
- Lusk*, D. and **S. M. Cavallo**, 2015P: Relationships between tropopause polar vortices and the Arctic Oscillation in the ERA-interim reanalysis data. *17th Cyclone Workshop*, Pacific Grove, CA.
- Skamarock, W. S., **S. M. Cavallo**, A. Clark, and L. Wicker, 2015P: Real-time evaluation of extended guidance produced by a global convection-permitting model. *27th Conference on Weather Analysis and Forecasting/23rd Conference on Numerical Weather*, Chicago, IL, American Meteorological Society.
- Cavallo, S. M.**, 2015Pa: Polar cyclone concepts within the threefold tropopause framework. *17th Cyclone Workshop*, Pacific Grove, CA.
- Szapiro*, N. and **S. M. Cavallo**, 2015Pa: On mechanisms for the formation, maintenance, and decay of tropopause polar vortices. *17th Cyclone Workshop*, Pacific Grove, CA.
- Szapiro*, N. and **S. M. Cavallo**, 2015Pc: Object and process verification in MPAS-A of tropopause polar vortices. *27th Conference on Weather Analysis and Forecasting/23rd Conference on Numerical Weather*, Chicago, IL, American Meteorological Society.
- Wachowicz*, L. and **S. M. Cavallo**, 2015P: An evaluation of applying ensemble data assimilation to an Antarctic mesoscale model. *14th Annual Student Conference*, Chicago, IL, American Meteorological Society.
- Cavallo, S. M.**, J. B. and C. Snyder, 2015P: Diagnosing systematic numerical weather prediction model bias from thermodynamic tendencies in short-term forecasts. *27th Conference on Weather Analysis and Forecasting/23rd Conference on Numerical Weather*, Chicago, IL, American Meteorological Society.
- Cavallo, S. M.**, 2015Pb: Connecting polar regions processes with midlatitude weather. *Invited colloquium*, Norman, OK, University of Oklahoma.
- Riedel*, C. and **S. M. Cavallo**, 2015Pb: Atmospheric analysis uncertainties over the antarctic region using an EnKF method with the AMPS model. *27th Conference on Weather Analysis and Forecasting/23rd Conference on Numerical Weather*, Chicago, IL, American Meteorological Society.
- Szapiro*, N. and **S. M. Cavallo**, 2015Pb: Associating Arctic sea ice variability and tropopause polar vortices. *International Symposium on Earth-Science Challenges: The 4th Summit between the University of Oklahoma and Kyoto University*, Norman, OK.

- Lusk*, D., M. Elliott*, and **S. M. Cavallo**, 2014P: WRF simulation of changes to characteristics of tropopause polar vortices due to sea ice loss. *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Halbert*, K., M. Elliott*, and **S. M. Cavallo**, 2014P: Operational and research comparisons of a global variable resolution model to a limited area model. *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Cavallo, S. M.** and M. A. Shapiro, 2014P: A multi-scale perspective of Arctic to tropical interactions for a high impact event over Europe. *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Riedel*, C., M. Elliott*, and **S. M. Cavallo**, 2014P: Ensemble data assimilation in a mesoscale model during Concordiasi (2010). *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Russell*, J., D. Parsons, and **S. M. Cavallo**, 2014P: Concordiasi dropsondes: Improved characterization of errors in the Antarctic Mesoscale Prediction System. *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Szapiro*, N. and **S. M. Cavallo**, 2014P: Arctic tropopause in MPAS-A, WRF, and GFS. *The World Weather Open Science Conference (WWOSC). The weather. What's the outlook?*, Montreal, Canada.
- Russell*, J., **S. M. Cavallo**, and D. Parsons, 2014: Evaluating the antarctic mesoscale prediction system using the concordiasi dataset. *American Meteorological Society 13th Annual AMS Student Conference*, Atlanta, GA, American Meteorological Society.
- Elliott*, M. S., **S. M. Cavallo**, and D. Parsons, 2014: Ensemble data assimilation in the antarctic mesoscale prediction system (amps) during concordiasi (2010). *American Meteorological Society 26th Conference on Weather Analysis and Forecasting / 22nd Conference on Numerical Weather Prediction*, Atlanta, GA, American Meteorological Society.
- Lusk*, D. and **S. M. Cavallo**, 2013P: A WRF model simulation of changes in the characteristics of tropopause polar vortices due to sea ice loss. *International Symposium on Earth-Science Challenges: The 3rd Summit between the University of Oklahoma and Kyoto University*, Kyoto, Japan.
- Cavallo, S. M.**, 2013P: Understanding changes in the arctic atmosphere to reductions in sea ice. *International Symposium on Earth-Science Challenges: The 3rd Summit between the University of Oklahoma and Kyoto University*, Kyoto, Japan.
- Szapiro*, N. and **S. M. Cavallo**, 2013P: Simulation of an Arctic summer cyclone using MPAS. *International Symposium on Earth-Science Challenges: The 3rd Summit between the University of Oklahoma and Kyoto University*, Kyoto, Japan.