**W. James Steenburgh** | Curriculum Vitae

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19 Feb 2025

# Education

1995 Ph. D. Atmospheric Sciences, University of Washington

Doctoral Thesis: “An Investigation of the Interaction of Extratropical Cyclones

with the Complex Terrain of Western North America,” C. F. Mass, advisor.

1989 B.S. Meteorology, The Pennsylvania State University, with high distinction

# Professional Experience

2006 – present Professor, Dept. of Atmospheric Sciences, University of Utah

2019 Fulbright Visiting Professor of Natural Sciences, University of Innsbruck

2005 – 2011 Chair, Dept. of Atmospheric Sciences (née Meteorology), University of Utah

2001 ­– 2006 Associate Professor, Dept. of Meteorology, University of Utah

2002 Visiting Professor, University at Albany, State University of New York

2002 Head, Mesoscale Modeling Group, 2002 Olympic Winter Games

1995 – 2001 Assistant Professor, Dept. of Meteorology, University of Utah

1995 Research Associate, Dept. of Atmospheric Sciences, University of Washington

1989 – 1995 Research Assistant, Dept. of Atmospheric Sciences, University of Washington

1988 Intern Meteorologist, National Weather Service, Albany, NY

# Honors and Awards

University of Utah Distinguished Teaching Award (2024)

Russell L. DeSouza Award, NSF Unidata Program (2024)

Fellow, American Meteorological Society (2021)

Fulbright Scholar, University of Innsbruck, Innsbruck, Austria (2019)

Named Session Award, American Meteorological Society Committee on Mountain Meteorology (2018)

Hosler Alumni Scholar Medal, College of Earth and Mineral Sciences, Penn State University (2017)

Outstanding Service Award, National Weather Service Western Region, “For outstanding service to the weather support group for the 2002 Olympic Winter Games” (2002)

Outstanding Teaching Award, College of Mines and Earth Sciences, University of Utah (2001)

John A. Dutton Award in Atmospheric Dynamics, Department of Meteorology, Penn State University (1989)

Elizabeth Holmes Teas’ Undergraduate Scholarship for Academic Excellence (1987­–1989)

# Research Interests

Synoptic and mesoscale meteorology over complex terrain, orographic and lake-effect precipitation, urban and arid-land meteorology, weather analysis and forecasting

# Google Scholar Citations

All: 4609

Since 2020: 1825

h-index: 40

# Books

Steenburgh, W. J., 2023: *Secrets of the Greatest Snow on Earth*, 2nd Edition. Utah State University Press, 226 pp.

Steenburgh, W. J., 2014: *Secrets of the Greatest Snow on Earth*. Utah State University Press, 186 pp.

# Book Chapters

Steenburgh, W. J., K. Redmond, K. E. Kunkel, N. Doesken, R. Gillies, J. Horel, M. P. Hoerling, and T. H. Painter, 2013: Present weather and climate: Average conditions. *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*. G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, Eds., Island Press, 56-73, <https://swccar.arizona.edu/chapter/4>.

Liverman, D., S. Moser, P. Weiland, L. Dilling, M. Boykoff, H. E. Brown, D. E. Busch, E. Gordon, C. Greene, E. Hothaus, D. Niemeier, S. Pincetl, W. J. Steenburgh, and V. Tidwell, 2013: Climate choices for a sustainable Southwest. *Assessment of Climate Change in the Southwest United States: A Report Prepared for the National Climate Assessment*. G. Garfin, A. Jardine, R. Merideth, M. Black, and S. LeRoy, Eds., Island Press, 405-435, <https://swccar.arizona.edu/chapter/18>.

Steenburgh, W. J., D. M. Schultz, B. Snyder, and M. Meyers, 2013: Bridging the gap between operations and research to improve weather prediction in mountainous regions. *Mountain Weather Research and Forecasting*, T. Chow, S. de Wekker, and B. Snyder, Eds., Springer, 693–716, <https://link.springer.com/chapter/10.1007/978-94-007-4098-3_12>.

Meyers, M., and W. J. Steenburgh, 2013: Mountain weather prediction: Phenomenological challenges and forecast methodology. *Mountain Weather Research and Forecasting*, T. Chow, S. de Wekker, and B. Snyder, Eds., Springer, 1–34, <https://link.springer.com/chapter/10.1007/978-94-007-4098-3_1>.

# Peer-Reviewed Publications

Veals, P. G., M. Pletcher, A. J. Schwartz, R. J. Chase, K. Harnos, J. Correia, M. E. Wessler, and W. J. Steenburgh, 2024: Predicting snow-to-liquid ratio in the mountains of the western United States. *Wea. Forecasting*, In review.

Hallar, A. G., and Coauthors, 2024: Storm Peak Laboratory: A research and training facility for the atmospheric sciences. *Bull. Amer. Meteor. Soc*., in press.

Wolvin, S., C. Strong, S. Rupper, and W. J. Steenburgh, 2024: Climatology of orographic precipitation gradients over High Mountain Asia derived from dynamical downscaling. *Journal of Geophysical Research: Atmospheres*, **129**, e2024JD041010, <https://doi.org/10.1029/2024JD041010>.

Pletcher, M. D., P. G. Veals, M. Wessler, D. Church, K. Harnos, J. Correia Jr., R. J. Chase, and W. J. Steenburgh, 2024: Validation of cool-season snowfall forecasts at a high-elevation site in Utah’s Little Cottonwood Canyon. *Wea. Forecasting*, **39**, 1261–1277., <https://doi.org/10.1175/WAF-D-23-0176.1>.

Wasserstein, M. L., and W. J. Steenburgh, 2024: Diverse characteristics of extreme orographic snowfall events in Little Cottonwood Canyon, Utah. *Mon. Wea. Rev*., **152**, 945–966, <https://doi.org/10.1175/MWR-D-23-0206.1>.

Steenburgh, W. J., J. A. Cunningham, P. T. Bergmaier, B. Geerts, and P. Veals, 2023: Characteristics of lake-effect precipitation over the Black River Valley and western Adirondack Mountains. *J. Appl. Meteor. Climatol*., **62**, 1347–1366, <https://doi.org/10.1175/JAMC-D-23-0026.1>.

Gowan, T. M., W. J. Steenburgh, and J. R. Minder 2022: Orographic effects on landfalling lake-effect systems. *Mon. Wea. Rev*., **150**, 2013–2031, <https://journals.ametsoc.org/view/journals/mwre/150/8/MWR-D-21-0314.1.xml>.

West, T. K., and W. J. Steenburgh, 2022: Formation, thermodynamic structure, and airflow of a Japan Sea polar-airmass convergence zone. *Mon. Wea. Rev*., **150**, 157–174, <https://journals.ametsoc.org/view/journals/mwre/150/1/MWR-D-21-0095.1.xml>.

Riley, C., S. Rupper, J. W. Steenburgh, C. Strong, and A. K. Kochanski, 2021: Characteristics of historical precipitation in High Mountain Asia based on a 16-year high resolution dynamical downscaling. *Atmosphere*, **12**, 355. <https://doi.org/10.3390/atmos12030355>.

Gowan, T. M., W. J. Steenburgh, and J. R. Minder, 2021: Downstream evolution and coastal-to-inland transition of landfalling lake-effect systems. *Mon. Wea. Rev*., **149**, 1023–1040, <https://journals.ametsoc.org/view/journals/mwre/aop/MWR-D-20-0253.1/MWR-D-20-0253.1.xml>.

Bohne, L., C. Strong, and W. J. Steenburgh, 2020: Climatology of orographic precipitation gradients in the contiguous western United States. *J. Hydromet*., **21**, 1723–1740, <https://doi.org/10.1175/JHM-D-19-0229.1>.

Veals, P. G., W. J. Steenburgh, S. Nakai, and S. Yamaguchi, 2020: Intrastorm variability of the inland and orographic enhancement of a sea-effect snowstorm in the Hokuriku Region of Japan. *Mon. Wea. Rev*., **148**, 2527–2548, <https://doi.org/10.1175/MWR-D-19-0390.1>.

Caron, M., and W. J. Steenburgh, 2020: Evaluation of recent NCEP operational model upgrades for cool-season precipitation forecasting over the western conterminous United States. *Wea. Forecasting*, **35**, 255–271, <https://doi.org/10.1175/WAF-D-19-0182.1>.

Steenburgh, W. J., and S. Nakai, 2020: Perspectives on sea- and lake-effect precipitation from Japan’s “Gosetsu Chitai”. *Bull. Amer. Meteor. Soc*., **101**, E58–E72, <https://doi.org/10.1175/BAMS-D-18-0335.1>.

Schultz, D. M., and W. J. Steenburgh, 2020: Nonclassic evolution of a cold-frontal system across the western United States during the Intermountain Precipitation Experiment (IPEX). *Wea. Forecasting*, **35**, 255–271, <https://doi.org/10.1175/WAF-D-19-0166.1>.

Veals, P. G., W. J. Steenburgh, S. Nakai, and S. Yamaguchi, 2019: Factors affecting the inland and orographic enhancement of sea-effect snowfall in the Hokuriku Region of Japan. *Mon. Wea. Rev*., **147**, 3121–3143, <https://journals.ametsoc.org/doi/abs/10.1175/MWR-D-19-0007.1>.

West, T. K., W. J. Steenburgh, and G. G. Mace, 2019: Characteristics of sea-effect clouds and precipitation over the Sea of Japan region as observed by A-Train satellites. *J. Geophys. Res. Atmos*., **124**, <https://doi.org/10.1029/2018JD029586>.

Schultz, D. M., and Coauthors, 2019: Extratropical cyclones: A century of research on meteorology’s centerpiece. *Meteorological Monographs*, **59**, 16.1–16.56, <https://journals.ametsoc.org/doi/10.1175/AMSMONOGRAPHS-D-18-0015.1>.

Mayr, G. J., and Coauthors, 2018: The Community Foehn Classification Experiment. *Bull. Amer. Meteor. Soc*., **99**, 2229–2235, <https://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-17-0200.1>.

Campbell, L. S., W. J. Steenburgh, Y. Yamada, M. Kawashima, and Y. Fujiyoshi, 2018: Influences of orography and coastal geometry on a transverse-mode sea-effect snowstorm over Hokkaido Island, Japan. *Mon. Wea. Rev*., **146**, 2201–2220, <https://doi.org/10.1175/MWR-D-17-0286.1>.

Veals, P. V., W. J. Steenburgh, and L. S. Campbell, 2018: Factors affecting the inland and orographic enhancement of lake-effect precipitation over the Tug Hill Plateau. *Mon. Wea. Rev*., **146**, 1745–1762, <https://doi.org/10.1175/MWR-D-17-0385.1>.

Gowan, T. M., W. J. Steenburgh, and C. S. Schwartz, 2018: Validation of mountain precipitation forecasts from the convection permitting NCAR Ensemble and operational forecast systems over the western United States. *Wea. Forecasting*, **33**, 739–765, <https://doi.org/10.1175/WAF-D-17-0144.1>.

Zelasko, N., A. Wettlaufer, B. Borkhuu, M. Burkhart, L. S. Campbell, W. J. Steenburgh, and J. R. Snider, 2018: Hotplate precipitation gauge calibrations and field measurements, *Atmos. Meas. Tech*., **11**, 441–458, <https://doi.org/10.5194/amt-11-441-2018>.

Steenburgh, W. J., and L. S. Campbell, 2017: The OWLeS IOP2b lake-effect snowstorm: Shoreline geometry, airmass boundaries, and the mesoscale forcing of precipitation. *Mon. Wea. Rev*., **145**, 2421–2436, <https://doi.org/10.1175/MWR-D-16-0460.1>.

Bergmaier, P. T., B. Geerts, L. S. Campbell, and W. J. Steenburgh, 2017: The OWLeS IOP2b lake-effect snowstorm: Dynamics of the secondary circulation. *Mon. Wea. Rev.,* **145**, 2437–2459, <https://doi.org/10.1175/MWR-D-16-0462.1>.

Campbell, L. S., and W. J. Steenburgh, 2017: The OWLeS IOP2b lake-effect snowstorm: Mechanisms contributing to the Tug Hill precipitation maximum. *Mon. Wea. Rev*., **145**, 2461–2476, <https://journals.ametsoc.org/view/journals/mwre/145/7/mwr-d-16-0461.1.xml>.

Lewis, W. R., W. J. Steenburgh, T. I. Alcott, and J. J. Rutz, 2017: GEFS precipitation forecasts and the implications of statistical downscaling over the western United States. *Wea. Forecasting,* **32**, 1007–1028, <https://doi.org/10.1175/WAF-D-16-0179.1>.

Massey, J. D., W. J. Steenburgh, S. W. Hoch, and D. D. Jensen, 2017: Simulated and observed surface energy balance contrasts and resulting playa breezes during the MATERHORN field campaigns. *J. Appl. Meteor. Clim*., **56**, 915–935, <https://doi.org/10.1175/JAMC-D-16-0161.1>.

Kristovich, D. A. R., R. D. Clark, J. Frame, B. Geerts, K. R. Knupp, K. A. Kosiba, N. F. Laird, N. D. Metz, J. Minder, T. D. Sikora, W. J. Steenburgh, S. M. Steiger, J. Wurman, and G. S. Young, 2017: The Ontario Winter Lake-effect Systems (OWLeS) Field Campaign: Scientific and educational adventures to further our knowledge and prediction of lake-effect storms. *Bull. Amer. Meteor. Soc.,* **98**, 315–332, <https://doi.org/10.1175/BAMS-D-15-00034.1>.

Welsh, D., B. Geerts, X. Jing, P. T. Bergmaier, J. R. Minder, W. J. Steenburgh, and L. S. Campbell, 2016: Understanding heavy lake-effect snowfall: The vertical structure of radar reflectivity in a deep snowband over and downwind of Lake Ontario. *Mon. Wea. Rev*., **144**, 4221–4244, <https://doi.org/10.1175/MWR-D-16-0057.1>.

Campbell, L. S., W. J. Steenburgh, P. G. Veals, T. W. Letcher, and J. R. Minder, 2016: Lake-effect mode and precipitation enhancement over the Tug Hill Plateau during OWLeS IOP2b. *Mon. Wea. Rev*. **144**, 1729­–1748, <https://doi.org/10.1175/MWR-D-15-0412.1>.

Massey, J. D., W. J. Steenburgh, J. C. Knievel, and W. Y. Y. Cheng, 2016: Regional soil-moisture biases and their influence on WRF model temperature forecasts over the Intermountain West. *Wea. Forecasting*, **31**, 197–216, <https://doi.org/10.1175/WAF-D-15-0073.1>.

Fernando, H. J. S., and Coauthors, 2015: The MATERHORN – Unraveling the Intricacies of Mountain Weather. *Bull. Amer. Meteor. Soc*. **96**, 1945–1967, <https://doi.org/10.1175/BAMS-D-13-00131.1>.

McMillen, J. D., and W. J. Steenburgh, 2015: Capabilities and limitations of convection-permitting WRF simulations of lake-effect systems over the Great Salt Lake. *Mon. Wea. Rev*., **30**, 1711–1731, <https://doi.org/10.1175/WAF-D-15-0017.1>.

Kochanski, A. K., E. Pardyjak, R. Stoll, A. Gowardhan, M. J. Brown, and W. J. Steenburgh, 2015: One-way coupling of the WRF-QUIC Urban Dispersion Modeling System. *J. Appl. Meteor. Clim*., **54**, 2119–2139, <https://doi.org/10.1175/JAMC-D-15-0020.1>.

Minder, J. R., T. Letcher, L. S. Campbell, P. G. Veals, and W. J. Steenburgh, 2015: The evolution of lake-effect convection during landfall and orographic uplift as observed by profiling radars. *Mon. Wea. Rev*., **143**, 4422–4442, <https://doi.org/10.1175/MWR-D-15-0117.1>.

Veals, P. G., and W. J. Steenburgh, 2015: Climatological characteristics and orographic enhancement of lake-effect precipitation east of Lake Ontario and over the Tug Hill Plateau. *Mon. Wea. Rev*., **143**, 3591–3609, <https://doi.org/10.1175/MWR-D-15-0009.1>.

Rutz, J. J., W. J. Steenburgh, and F. M. Ralph, 2015: The inland penetration of atmospheric rivers over western North America: A Lagrangian analysis. *Mon. Wea. Rev*., **143**, 1924–1944, <https://doi.org/10.1175/MWR-D-14-00288.1>.

McMillen, J. D., and W. J. Steenburgh, 2015: Impact of microphysics parameterizations on simulations of the 27 October 2010 Great Salt Lake effect snowstorm. *Wea. Forecasting*. **30**, 136–152, <https://doi.org/10.1175/WAF-D-14-00060.1>.

Campbell, L. S., and W. J. Steenburgh, 2014: Fine-scale orographic precipitation variability and gap-filling radar potential in Little Cottonwood Canyon, Utah. *Wea. Forecasting*, **29**, 912–935, <https://doi.org/10.1175/WAF-D-13-00129.1>.

Massey, J. D., W. J. Steenburgh, S. W. Hoch, and J. C. Knievel, 2014: Sensitivity of near-surface temperature forecasts to soil properties over a sparsely vegetated dryland region. *J. Appl. Meteor. Clim*., **53**, 1976–1995, <https://doi.org/10.1175/JAMC-D-13-0362.1>.

Rutz, J. J., W. J. Steenburgh, and F. M. Ralph, 2014: Climatological characteristics of atmospheric rivers and their inland penetration over the western United States. *Mon. Wea. Rev*., **142**, 905–921, <https://doi.org/10.1175/MWR-D-13-00168.1>.

Alcott, T. I., and W. J. Steenburgh, 2013: Orographic influences on a Great Salt Lake-effect snowstorm. *Mon. Wea. Rev*., **141**, 2432–2450, <https://doi.org/10.1175/MWR-D-12-00328.1>.

Yeager, K. N., W. J. Steenburgh, and T. I. Alcott, 2013: Contributions of lake-effect periods to the cool-season hydroclimate of the Great Salt Lake Basin. *J. Appl. Meteor. Clim*., **52**, 341–362, <https://doi.org/10.1175/JAMC-D-12-077.1>.

Alcott, T. I., W. J. Steenburgh, and N. F. Laird, 2012: Great Salt Lake-effect precipitation: Observed frequency, characteristics, and environmental factors. *Wea. Forecasting*, **27**, 954–971, <https://doi.org/10.1175/WAF-D-12-00016.1>.

Steenburgh, W. J., J. D. Massey, and T. H. Painter, 2012: Episodic dust events of Utah’s Wasatch Front and adjoining region. *J. Appl. Meteor. Clim*., **51**, 1654–1669, <https://doi.org/10.1175/JAMC-D-12-07.1>.

Rutz, J. J., and W. J. Steenburgh, 2012: Quantifying the role of atmospheric rivers in the interior western United States. *Atmos. Sci. Lett*., **13**, 257–261, <https://doi.org/10.1002/asl.392>.

West, G. L., and W. J. Steenburgh, 2011: Influences of the Sierra Nevada on Intermountain cold-front evolution. *Mon. Wea. Rev*., **139**, 3184–3207, <https://doi.org/10.1175/MWR-D-10-05076.1>.

West, G. L., and W. J. Steenburgh, 2010: Life cycle and mesoscale frontal structure of an Intermountain cyclone. *Mon. Wea. Rev*., **138**, 2528–2545, <https://doi.org/10.1175/2010MWR3274.1>.

Jeglum, M. E., W. J. Steenburgh, T. P. Lee, and L. F. Bosart, 2010: Multi-reanalysis climatology of Intermountain cyclones. *Mon. Wea. Rev*., **138**, 4035–4053, <https://doi.org/10.1175/2010MWR3432.1>.

Alcott, T. I., and W. J. Steenburgh, 2010: Snow-to-liquid ratio variability and prediction at a high elevation site in Utah's Wasatch Mountains. *Wea. Forecasting*, **25**, 323–337, <https://doi.org/10.1175/2009WAF2222311.1>.

Steenburgh, W. J., C. R. Neuman, G. L. West, and L. F. Bosart, 2009: Discrete frontal propagation over the Sierra-Cascade Mountains and Intermountain West. *Mon. Wea. Rev*., **137**, 2000–2020, <https://doi.org/10.1175/2008MWR2811.1>.

Steenburgh, W. J., and T. I. Alcott, 2008: Secrets of the “Greatest Snow on Earth”. *Bull. Amer. Meteor. Soc*., **89**, 1285–1293, <https://doi.org/10.1175/2008BAMS2576.1>.

Shafer, J. C., and W. J. Steenburgh, 2008: Climatology of strong Intermountain cold fronts. *Mon. Wea. Rev*., **136**, 784–807, <https://doi.org/10.1175/2007MWR2136.1>.

Cheng, W. Y. Y., and W. J. Steenburgh, 2007: Strengths and weaknesses of MOS, running-mean bias removal, and Kalman filter techniques for improving model forecasts over the western U. S. *Wea. Forecasting,* **22**, 1304–1318, <https://doi.org/10.1175/2007WAF2006084.1>.

Orf, L., G. Lackman, C. Herbster, A. Krueger, E. Cutrim, T. Whitaker, J. Steenburgh, and M. Voss, 2007: Models as educational tools. *Bull. Amer. Meteor. Soc*., **88**, 1101–1104.

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Colle, B. A., J. B. Wolfe, W. J. Steenburgh, D. E. Kingsmill, J. A. W. Cox, and J. C. Shafer, 2005: High resolution simulations and microphysical validation of an orographic precipitation event over the Wasatch Mountains during IPEX IOP3. *Mon. Wea. Rev*., **133**, 2947–2971, <https://doi.org/10.1175/MWR3017.1>.

Hart, K. A., W. J. Steenburgh, and D. J. Onton, 2005: Model forecast improvements with decreased horizontal grid spacing over fine-scale Intermountain orography during the 2002 Olympic Winter Games. *Wea. Forecasting*, **20**, 558–576, <https://doi.org/10.1175/WAF865.1>.

Cox, J. A. W., W. J. Steenburgh, D. E. Kingsmill, J. C. Shafer, B. A. Colle, O. Bousquet, B. F. Smull, and H. Cai, 2005: The kinematic structure of a Wasatch Mountain winter storm during IPEX IOP3. *Mon. Wea. Rev*., **133**, 521–542, <https://doi.org/10.1175/MWR-2875.1>.

Pataki, D. E., B. J. Tyler, R. E. Peterson, A. P. Nair, W. J. Steenburgh, and E. R. Pardyjak, 2005: Can carbon dioxide be used as a tracer of urban atmospheric transport? *J. Geophys. Res*., **110**, D15, D15102, <https://doi.org/10.1029/2004JD005723>.

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Horel, J., T. Potter, L. Dunn, W. J. Steenburgh, M. Eubank, M. Splitt, and D. J. Onton, 2002: Weather support for the 2002 Winter Olympic and Paralympic Games. *Bull. Amer. Meteor. Soc*., **83**, 227–240, <https://doi.org/10.1175/1520-0477(2002)083%3C0227:WSFTWO%3E2.3.CO;2>.

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Steenburgh, W. J., and D. J. Onton, 2001: Multiscale analysis of the 7 December 1998 Great Salt Lake-effect snowstorm. *Mon. Wea. Rev*., **129**, 1296–1317, <https://doi.org/10.1175/1520-0493(2001)129%3C1296:MAOTDG%3E2.0.CO;2>.

Onton, D. J., and W. J. Steenburgh, 2001: Diagnostic and sensitivity studies of the 7 December 1998 Great Salt Lake-effect snowstorm. *Mon. Wea. Rev*., **129**, 1318–1338, <https://doi.org/10.1175/1520-0493(2001)129%3C1318:DASSOT%3E2.0.CO;2>.

Steenburgh, W. J., S. F. Halvorson, and D. J. Onton, 2000: Climatology of lake-effect snow­storms of the Great Salt Lake. *Mon. Wea. Rev.,* **128**, 709–727, <https://doi.org/10.1175/1520-0493(2000)128%3C0709:COLESO%3E2.0.CO;2>.

Mass, C. F., and W. J. Steenburgh, 2000: An observational and numerical study of an orograph­ically trapped wind reversal along the west coast of the U.S. *Mon. Wea. Rev.,* **128**, 2363–2396, <https://doi.org/10.1175/1520-0493(2000)128%3C2363:AOANSO%3E2.0.CO;2>.

Schultz, D. M., and W. J. Steenburgh, 1999: The formation of a forward-tilting cold front with multiple cloud bands during Superstorm 1993. *Mon. Wea. Rev*., **127**, 1108–1124, <https://doi.org/10.1175/1520-0493(1999)127%3C1108:TFOAFT%3E2.0.CO;2>.

White, B. G., J. Paegle, W. J. Steenburgh, J. D. Horel, R. T. Swanson, L. K. Cook, D. J. Onton, and J. G. Miles, 1999: Short–term forecast validation of six models. *Wea. Forecasting*, **14**, 84–108, <https://doi.org/10.1175/1520-0434(1999)014%3C0084:STFVOS%3E2.0.CO;2>.

Steenburgh, W. J., D. M. Schultz, and B. A. Colle, 1998: The structure and evolution of gap outflow over the Gulf of Tehuantepec, Mexico. *Mon. Wea. Rev*., **126**, 2673–2691, <https://doi.org/10.1175/1520-0493(1998)126%3C2673:TSAEOG%3E2.0.CO;2>.

Steenburgh, W. J., C. F. Mass, and S. A. Ferguson, 1997: The influence of terrain-induced cir­culations on wintertime temperature and snow level in the Washington Cascades. *Wea. Fore­casting,* **12**, 208–227, <https://doi.org/10.1175/1520-0434(1997)012%3C0208:TIOTIC%3E2.0.CO;2>.

Steenburgh, W. J., and C. F. Mass, 1996: Interaction of an intense extratropical cyclone with the coastal orography of western North America. *Mon. Wea. Rev.,* **124**, 1329–1352, <https://doi.org/10.1175/1520-0493(1996)124%3C1329:IOAIEC%3E2.0.CO;2>.

Steenburgh, W. J., and C. F. Mass, 1994: The structure and evolution of a simulated Rocky Mountain lee trough. *Mon. Wea. Rev*., **122**, 2740–2761, <https://doi.org/10.1175/1520-0493(1994)122%3C2740:TSAEOA%3E2.0.CO;2>.

Steenburgh, W. J., and J. R. Holton, 1993: On the interpretation of geopotential height tendency equations. *Mon. Wea. Rev*., **121**, 2642–2645, <https://doi.org/10.1175/1520-0493(1993)121%3C2642:OTIOGH%3E2.0.CO;2>.

Mass, C. F., W. J. Steenburgh, and D. M. Schultz, 1991: Diurnal surface pressure variations over the continental U.S. and the influence of sea level reduction. *Mon. Wea. Rev*., **119**, 2814–2830, <https://doi.org/10.1175/1520-0493(1991)119%3C2814:DSPVOT%3E2.0.CO;2>.

# Other Scholarly Publications

Steenburgh, W. J., 2022: Contributions of lake-effect periods to precipitation and streamflow in northern Utah. Report for the Great Salt Lake Advisory Council.

Steenburgh, J., and Coauthors, 2007: Climate Science and Utah: The Scientific Consensus. Report to Utah Gov. Jon Huntsman, 31 pp., <https://collections.lib.utah.edu/details?id=1158936>.

SHARE: Sierra Hydrometeorology and Atmospheric River Experiment Master Planning Doc­ument. SHARE Scientific Steering Committee. D. Kingsmill and S. Yuter, co-chairs.

Steenburgh, W. J., and D. J. Onton, 2001: Meteorological modeling for the 2002 particulate matter (PM10) State Implementation Plan for Salt Lake and Utah Counties. Report to the Utah Department of Environmental Quality, Division of Air Quality, 21 pp.

Steenburgh, W. J., 1998: Weather support at the 1998 Nagano Winter Olympics: Summary and Recommendations. Report to the Salt Lake Organizing Committee for the Olympic Winter Games of 2002.

MAP: Mesoscale Alpine Programme U. S. Overview Document 1996, National Science Foun­dation Field Program Proposal. R. Houze, J. Kuettner, and R. Smith, eds.

Steenburgh, W. J., and C. F. Mass, 1996: Synoptic and mesoscale circulations during high ozone episodes over western Washington: An evaluation of the Penn State/NCAR Mesoscale Model (MM5). Report to the Puget Sound Air Pollution Control Agency, 67 pp.

Steenburgh, W. J., and C. F. Mass, 1996: Numerical Simulations of the PM-10 Episode of 3-4 January 1995. Report to the Puget Sound Air Pollution Control Agency, 28 pp.

# Research and Educational Funding

*Pending*

Advancing Probabilistic Prediction of High-Impact Winter Storms over the CONUS and Alaska (PI), NOAA, **$550,205**, 8/25–7/28.

*Current*

Multiridge Orographic Precipitation in Continental Mountain Environments (PI), National Science Foundation, **$666,969**, 1/23–12/25.

Advancing Probabilistic Prediction of Snow-to-Liquid Ratio and Snowfall during High-Impact Winter Storms (PI), NOAA, **$385,065**, 8/22–7/25.

*Past*

Collaborative Research to Advance Probabilistic Forecasting and Hazard Assessment in Mountainous Regions (PI), NOAA, **$450,000**, 5/20–4/24.

Lake- and Sea-Effect Precipitation Systems in Complex Terrain (PI), National Science Foundation, **$512,763**, 10/19–9/23.

AGS-FIRP Track 1: Graduate Education in Mountain Meteorology at Storm Peak Laboratory Fall 2022 (PI), National Science Foundation, **$40,668**, 8/22–7/23.

Advancing Probabilistic Prediction of High-Impact Winter Storms through Ensemble NWP and Post-Processing (PI), **$300,902**, 7/19–6/23.

Collaborative Research to Advance Analysis, Forecast, and Decision Support Services for High-Impact Weather Events (PI), NOAA, **$375,000**, 7/17–6/21.

Storm Morphology and the Influence of Orography on Lake-Effect Precipitation (PI), National Science Foundation, **$473,056**, 9/16–9/20.

Precipitation and Glacier Change in High Mountain Asia over the Modern Era (co-PI), NASA, **$737,000**, 8/16–8/20.

Orographic Influences on Lake-Effect Storms (PI), National Science Foundation, **$400,980**, 8/13–8/17.

CSTAR: Advancing Analysis, Forecast, and Warning Capabilities for High Impact Weather Events (PI), NOAA, **$250,000**, 5/13–4/17.

Mountain Terrain Atmospheric Modeling and Observations (MATERHORN) Program (co-PI), Office of Naval Research, **2,676,000**, 7/11–5/17.

IDR-Collaborative Research: The Impact of Green Infrastructure on Urban Microclimate and Energy Use (co-PI), National Science Foundation, **757,718**, 10/11–9/14.

Orographic Influences on Lake-Effect Precipitation (PI), National Science Foundation, **471,147**, 6/10–6/14.

CSTAR: Advancing Analysis, Forecast, and Warning Capabilities for High Impact Weather Events (co-PI), NOAA, **$375,000**, 5/10–4/14.

Wilderness Air Monitoring (PI), USDA Forest Service, **20,000**, 8/10–9/11.

Mechanisms of Intermountain Cold Front Evolution (PI), National Science Foundation, **$387,487**, 1/07-12/10.

Improved Monitoring, Analysis, and Prediction of High Impact Weather (co-PI). NOAA, **$375,000**, 7/07-6/11

Structure and Evolution of Intermountain Cyclones (PI), National Science Foundation, **$344,254**, 1/04-12/07.

NOAA Cooperative Institute for Regional Prediction: 2004-2007 (co-PI), NOAA, **$375,000**, 7/04-6/07.

Evaluation of NCEP Regional Reanalyses over Complex Terrain (co-PI), NOAA, **$220,000**, 7/04-6/07.

Improving the Gridded Forecast Process Using Statistically Post-Processed Model Guidance Based on High-Density Mesonet Observations (PI), University Corporation for Atmospheric Research/COMET**, $81,000**, 6/04-11/06.

Orographic Precipitation Processes over the Wasatch Mountains during IPEX (PI), National Science Foundation**, $231,504**, 1/01-12/03.

Cooperative Institute for Regional Prediction Contribution to CSTAR (co-PI), NOAA, **$375,000**, 1/01-12/03.

Planning Weather Support for the 2002 Winter Olympics (co-PI), NOAA**, $588,700**, 4/01-3/02.

Regional Coupled Atmospheric/Land–Surface Modeling for GAPP (PI), University of Utah Seed Grant Committee, **$30,700**, 3/02-2/03.

Cooperative Institute for Regional Prediction: 2000 (co-PI), NOAA, **$125,000**, 1/00-12/00.

Planning Weather Support for the 2002 Winter Olympics (co-PI), NOAA, **$216,000**, 1/99-12/ 99.

Collaboration for Improved Meteorological Modeling (PI), Utah Division of Air Quality, **$56,700**, 10/99-9/01.

Planning Weather Support for the 2002 Winter Olympics (co-PI), NOAA, **$97,000**, 6/98-6/99.

Development of a Meteorological Computation and Visualization Laboratory: A Unidata Equipment Proposal (PI), National Science Foundation, **$19,400**, 9/97-9/98.

Mesoscale Modeling Studies of Warm Season Rainfall in the PACS Domain (co-PI), NOAA-OGP, **$171,700**, 3/98-2/00.

Observational and Numerical Investigations of the Interaction of Synoptic Weather Systems with the Orography of the Western United States (PI), National Science Foundation, **$206,477**, 2/97-1/00.

Workshop on Weather Prediction in the Intermountain West (PI), University Corporation for Atmospheric Research//COMET, **$3,800**, 4/ 98-3/99.

Real-Time Numerical Weather Prediction for the Wasatch Front and Adjoining Region (PI), University of Utah Research Committee, **$5,800**, 2/96-2/98.

# Field Program Participation

OREO (2017) PI

OWLeS (2013–14) PI

MATERHORN (2012) Co-I

SCHUSS (2011) PI

SOLPEX (2010–11) PI

IMPROVE (2001) Lead forecaster

IPEX (2000) Co-lead scientist, mission coordinator, lead forecaster

VTMX (2000) Lead forecaster

COAST (1993) Airborne scientist, field-phase forecasting and planning

# Course Instruction: University of Utah

I have been teaching general education, undergraduate, and graduate classes in synoptic meteorology; weather analysis and forecasting; and mountain meteorology at the University of Utah for 29 years. My current rotation includes the following (most recent enrollment and student feedback listed). Atmos 1000 and 5010 were developed as new courses. Atmos 6250 was co-developed with Dave Whiteman.

*Atmos 1000: Secrets of the Greatest Snow on Earth*

Syllabus: <https://utah.instructure.com/courses/828633/assignments/syllabus>

Type: Physical/Life Science Intellectual Exploration (SF)

Format: Asynchronous online

Last taught: Spring 2024

Enrollment: 460

I would recommend this course: Strongly Agree 80.3%; Somewhat Agree 16.9%

I would recommend this instructor: Strongly Agree 90.9%; Somewhat Agree 6.1%

*Atmos 5010: Weather Forecasting*

Syllabus: <https://www.inscc.utah.edu/~steenburgh/classes/5010/>

Type: Undergraduate major (elective)

Format: Practicum

Last taught: Spring 2020

Enrollment: 7

Overall effective course: 5.33/6

Overall effective instructor: 6/6

*Atmos 5110/6110: Synoptic Meteorology I*

Syllabus: <https://utah.instructure.com/courses/709723/assignments/syllabus>

Type: Undergraduate major (required)/Graduate major (elective)

Format: In person lecture and active learning activities

Last taught: Fall 2024

Enrollment: 13

I would recommend this course: Strongly Agree 100%

I would recommend this instructor: Strongly Agree 100%

*Atmos 5120/6120: Weather Discussion*

Syllabus: <https://utah.instructure.com/courses/715812/assignments/syllabus>

Type: Undergraduate major (required)/Graduate major (elective)

Format: Practicum

Last taught: Fall 2024

Enrollment: 13

I would recommend this course: Strongly Agree 100%

*Atmos 6250: Mountain Meteorology*

Syllabus: <https://utah.instructure.com/courses/805483/assignments/syllabus>

Type: Graduate (Atmospheric and related science majors)

Format: In person lectures, student-led presentations, field activities

Last taught: Fall 2022

Enrollment: 17

I would recommend this course: 100%

I would recommend this instructor: 100%

Additional courses that I have taught at the University of Utah include the following (quarter system equivalents or semester system predecessors to the courses above not included):

*Atmos 3910: Special Topics – DOW Radar Studies*

*Atmos 5210: Synoptic-Dynamic Meteorology II*

*Atmos 7810: Graduate Seminar*

*Meteo 551: Fundamental Applications of Dynamic Meteorology* (quarter system)

*Meteo 2810: Undergraduate Seminar* (quarter system)

*Geo 6650: Hydrology* (precipitation module)

# Course Instruction: Other Institutions

I have served as a Visiting Professor at the University at Albany, State University of New York (Fall 2002) and as a Fulbright Scholar and Visiting Professor of Natural Sciences at the University of Innsbruck (Spring 2019), teaching the following graduate-level courses:

*ATM 619: Mountain Weather and Climate* (University at Albany)

*Writing Workshop for Atmospheric and Cryospheric Sciences* (University of Innsbruck)

*Cool-Season Precipitation: Fundamentals and Applications* (University of Innsbruck)

*Weather Briefing* (University of Innsbruck)

# Doctoral Students Supervised

Gowan, T. M., 2021: Improving the understanding and prediction of lake-effect precipitation using idealized modeling and deep learning. Present Employment: Spire.

West, T. K., 2019: Sea-effect clouds and precipitation over the Sea of Japan. Present Employment: U.S. Air Force.

Veals, P. G., 2019: Factors affecting the inland and orographic enhancement of lake- and sea-effect snowfall. Present Employment: University of Utah.

Campbell, L. S., 2017: Influences of orography and coastline geometry on lake- and sea-effect snowstorms. Present Employment: Maxar Technologies

Massey, J. D., 2015: Analysis and prediction of dryland land-surface processes and their influence on the meteorology of the Intermountain West. Present Employment: Amazon.

McMillen, J. D., 2014: Numerical weather prediction of Great Salt Lake effect precipitation at convection-permitting grid spacings. Present employment: U.S. Air Force.

Rutz, J. J., 2014: The climatological characteristics and inland penetration of atmospheric rivers over the western United States. Present employment: Scripps Institute for Oceanography.

Alcott, T. I., 2012: Environmental and orographic influences on Great Salt Lake-effect precipitation. Present employment: National Oceanic and Atmospheric Administration Physical Sciences Laboratory.

West, G. L., 2010: Cyclone and cold front evolution over the Intermountain West. Present employment: Department of Earth and Ocean Sciences, University of British Columbia and BC Hydro.

Cox, J. A. W., 2006: The Sensitivity of thermally driven mountain flows to land-cover change. Present employment: ArcVera Renewables.

Shafer, J. C., 2005: Topographic and diabatic influences on baroclinic storm evolution over the Intermountain West. Present employment: Disaster Tech.

Hart, K. A., 2004: An evaluation of high-resolution modeling and statistical forecast techniques over complex terrain. Present employment: US Air Force Academy.

Onton, D. J., 2000: An observational and numerical modeling investigation of Great Salt Lake-effect snow. Present employment: National Weather Service.

# Master’s Students Supervised

Huang, Q., 2024: Improving near-surface weather and precipitation prediction through a strongly coupled land-atmosphere data assimilation in the Unified Forecast System. Present employment: University of Utah.

Wasserstein, M. L., 2023: Cool-season orographic snowfall extremes in the central Wasatch Mountains, Utah, USA. Present employment: University of Utah.

McKinney, D. J., 2022: Ambient flow influences on broad-coverage lake-effect systems interacting with downstream orography. Present employment: FEMA.

Cunningham, J., 2021: Characteristics of lake-effect precipitation over the western Adirondack Mountains. Present employment: National Weather Service.

Caron, M., 2019: Evaluation of cool-season precipitation forecasts produced over the western continental United States by experimental NCEP modeling systems. Present employment: I. M. Systems Group, Inc.

Gowan, T. M., 2017: Validation of mountain precipitation forecasts from the NCAR convection-permitting ensemble and operational forecast systems over the western United States. Present employment: Spire.

Lewis, W. R., 2016: GEFS precipitation forecasts and the implications of statistical downscaling over the western United States. Present employment: Meteorological Solutions, Inc.

Veals, P. G., 2014: Climatological characteristics and orographic enhancement of lake-effect precipitation over eastern Lake Ontario and the Tug Hill Plateau. Present employment: University of Utah.

Campbell, L. S., 2013: Fine-scale radar observations of orographic precipitation features during a Wasatch Mountain Winter Storm. Present employment: Maxar Technologies.

Yeager, K. N., 2012: Quantitative estimates of lake-effect precipitation in the Great Salt Lake Basin. Present employment: National Weather Service.

Jeglum, M. E., 2010: Multi-reanalysis climatology of Intermountain Cyclones. Present employment: National Weather Service.

Alcott, T. I., 2009: Snow-to-liquid ratio variability and prediction at a high elevation site in Utah's central Wasatch Mountains. Present employment: National Oceanic and Atmospheric Administration Physical Sciences Laboratory.

Neuman, C. R., 2008: Discrete frontal propagation over the Sierra-Cascade Mountains and western Great Basin. Present employment: National Weather Service.

West, G. L., 2005: Spurious grid-scale convection in the North American Regional Reanalysis (NARR). Present employment: Department of Earth and Ocean Sciences, University of British Columbia and BC Hydro.

Shafer, J. C., 2002: Synoptic and mesoscale structure of a Wasatch Mountain winter storm. Present employment: Present employment: Disaster Tech.

Cox, J. A. W., 2002: Kinematic structure of a Wasatch Mountain Snowstorm. ArcVera Renewables.

Grandy, R. J., 2001: Case studies of ozone transport processes along the Wasatch Front. Present employment: Retired (formerly Utah Division of Air Quality).

Siffert, A. J., 2001: Point-specific MOS forecasts for the 2002 Winter Games. Present employ-ment: BMS Group.

Blazek, T. R., 2000: Analysis of a Great Basin cyclone and attendant mesoscale features. Present employment: Unknown.

Halvorson, S. F., 1999: Climatology of lake-effect snowstorms of the Great Salt Lake. Present employment: U. S. Army Dugway Proving Grounds.

Cook, L. K., 1998: An evaluation of mesoscale model performance over the western United States. Present employment: National Weather Service.

# Current Graduate Research Assistants

Michael Pletcher, Ph.D.

Michael Wasserstein, Ph.D.

Ashley Evans, M.S.

Annegret Lang, M.S.

# Graduate Committees

University of Utah Atmospheric Sciences unless specified.

Michael Pye, M.S. (2024); Massey Bartolini, Ph.D. (2023, University at Albany); James Powell, M.S. (2023); Zhuocan Xu, Ph.D. (2022); Savanna Wolvin, M.S. (2022); Matt Demaria, M.S. (2022); Michael Pletcher, M.S. (2022); Paul McGlynn, M.S. (2022); Chris Mitchell, Ph.D. (2022); Taylor Gowan, Ph.D. (2021); McKenna Stanford, Ph.D. (2020); Kevin Dougherty, M.S. (2020); Lucas Bohne, M.S. (2020); Winnie Wu, Ph.D. (2019); Brian Blaylock, Ph.D. (2019); Alex Weech, M.S. (2019); Collin Riley, M.S. (2019, Geography); Mike Wessler, M.S. (2018); Claire Schirle, M.S. (2018); Sarah Bang, Ph.D. (2018); Andy Lesage, Ph.D. (2017); Winnie Wu, M.S. (2017); Taylor McCorkle, M.S. (2017); Steven Clark, M.S. (2017, Masters of Science and Technology); Matt Horan, M.S. (2017); Andy Flinders, Ph.D. (2017, Physics); Alex Jacques, Ph.D. (2016); Ansley Long, M.S. (2016); Matt Jeglum, Ph.D. (2016); Jason Scalzitti, M.S. (2016); Rose Verbose, Ph.D. (2016, Parks, Rec, and Tourism); Trey Alvey, M.S. (2015); Paul Froidevaux, Ph.D. (2014, University of Bern Institute of Geography); Erik Neeman, M.S. (2014); Gabe Susca-Lopata, M.S. (2014); Monica French, M.S. (2013, Masters of Science for Secondary School Teachers); Zhan Li, Ph.D. (2013); John Lawson, M.S. (2013); Kevin Hammonds, M.S. (2013); Jon Zawislak, Ph.D. (2013); Paul Staten, Ph.D. (2013); Manuela Lehner, Ph.D. (2012); Carolyn Stwertka, M.S. (2012); Morgan Farley-Chrust, M.S. (2011); Dan Tyndall, Ph.D. (2011); Scott Hynek, Ph.D. (2011, Geology and Geophysics); Neil Lareau, M.S. (2010), Andrew Snyder, M.S. (2009); Dan Tyndall, M.S. (2008); Jon Zawislak, M.S. (2008); Maura Hahnenberger, M.S. (2008); Li Xu, MS (2008); Phoebe McNeally, Ph.D. (2008, Geography); Luis Blacutt, M.S. (2006); David Myrick, Ph.D. (2006); Mario Majcen, M.S. (2005); Eric Crosman, M.S. (2005); Eric Stone, M.S. (2004); Dan Zumpfe, M.S. (2004); Jennifer Roman, Ph.D. (2004); Robert Rice, Ph.D. (2003, Civil Engineering); Linda Cheng, M.S. (2001); Gonzalo Miguez-Macho, Ph.D. (2000); Robert Swanson, Ph.D. (1998); Jonathan Slemmer, M.S. (1998); Brett McDonald, Ph.D. (1998); Bryan White, M.S. (1997); Christopher Stiff, M.S. (1997); Mark Braby, M.S. (1997)

# Current and Past Undergraduate Research Assistants and Advisees

Maddie Banks (Capstone Project); Jordin Hubbard (Summer REU); Silvia Lombardo (Summer REU); Adjete Tekeo (Summer REU); Bobbi Covington (RA); Sophie Povirk (RA); Spencer Tangen (Independent Study); Zach Reich (Capstone Project); Spencer Fielding (Capstone Project); Alex Weech (Capstone Project); Cameron Negrete (Capstone Project); Kyle Neumuller (Captsone Project); David Moser (Capstone Project); Stephen Clark (Independent Study); Eric Grimit (RA); Jebb Stewart (RA); Dave Strohm (RA); Matt Maserik (RA); Todd Foisy (RA); Christine McCue (RA); Marissa Orgill (RA); Colby Neuman (RA)

# Senior Design Project Advising

Mechanical Engineering Snow Measurement System Design Team (2014-15): Caroline Biggs, Scott Blackhurst, Kyle Dewey, Virginia Gould, Peter Vander Wilt (co-advisor with Eric Pardyjak)

# Invited Lectures and Seminars

Steenburgh, W. J., 2024: *Secrets of the Greatest Snow on Earth.* Park City Museum, Park City Utah, UT.

Steenburgh, W. J., 2024: *Predicting Snow-to-Liquid Ratio Across the CONUS*. NWS/WPC Winter Weather Experiment/Precipitation Extremes from Atmospheric Rivers Experiment Seminar Series, virtual.

Steenburgh, W. J., 2024: *Advancing Probabilistic Snowfall Prediction in the Mountain West and Beyond*. NOAA VLab, virtual.

Steenburgh, W. J., 2024: *Secrets of the Greatest Snow on Earth.* Young Presidents Organization (YPO), Park City Utah, UT.

Steenburgh, W. J., 2024: *Winter Storms in Complex Terrain: Perspectives from the Greatest Snow Climates on Earth*. National Center for Atmospheric Research, Boulder, CO.

Steenburgh, W. J., 2024: *Secrets of the Greatest Snow on Earth.* Nordic United, Logan, UT.

Steenburgh, W. J., 2024: *Secrets of the Greatest Snow on Earth.* Friends of Alta, Alta, UT.

Steenburgh, W. J., 2023: *Secrets of the Greatest Snow on Earth*. Mount Washington Observatory Science in the Mountains Virtual Lecture Program, <https://www.youtube.com/watch?v=p5nVxaJv_EU>.

Steenburgh, W. J., 2023: *Precipitation in Utah*. Utah Cloud Seeding Symposium, Snowbird, UT.

Steenburgh, W. J., 2023: *Secrets of the Greatest Snow on Earth*. Ogden Avalanche, Ogden, UT.

Steenburgh, W. J., 2022: *Contributions of Lake-Effect Periods to Precipitation and Streamflow in Northern Utah*. Great Salt Lake Advisory Council, Antelope Island, UT.

Steenburgh, W. J., and S. Arens, 2022: *The Greatest Snow on Earth: Past, Present, and Future*. The Nature Conservancy, Snowbird, UT.

Steenburgh, W. J., 2019: *Climate Change: Implications for Austria and Its Alpine Neighbors*. Fulbright Austria Seminar in American Studies, Strobl, Austria.

Steenburgh, W. J., 2018: *Secrets of the Greatest Snow on Earth*. Air and Waste Management Association Annual Dinner, Salt Lake City, UT.

Steenburgh, W. J., 2018: *Precipitation Processes and Prediction: Perspectives from the Great Basin and Lake- and Sea-Effect Regions*. 18th Conference on Mountain Meteorology, Amer. Meteor. Soc., Santa Fe, NM.

Steenburgh, W. J., 2018: *Cool-Season Precipitation Prediction in Complex Terrain: Perspectives from the Intermountain West*. Scripps Institution of Oceanography, La Jolla, CA.

Steenburgh, W. J., 2018: *The Great Salt Lake Effect: Mechanisms and Contributions to Wasatch Snow*. Great Salt Lake Issues Forum, Salt Lake City, UT.

Steenburgh, W. J., 2017: *Communicating Science in the 21st Century: Personal and Political Challenges and Opportunities*. Lattman Lecture, Penn State University, University Park, PA.

Steenburgh, W. J., 2017: *Mesoscale Forcing of Lake-Effect Precipitation over Lake Ontario and Its Enhancement over the Tug Hill Plateau*. Penn State University, University Park, PA.

Steenburgh, W. J., 2016: *Secrets of the Greatest Snow on Earth*. Snowbird Mountain Hosts Meeting, Snowbird, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Snowbird Adventure Series, Snowbird, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Friends of the Marriott Library, University of Utah, Salt Lake City, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Westminster College, Salt Lake City, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Friends of the Merill-Cazier Library Lecture, Utah State University, Logan, UT.

Steenburgh, W. J., 2015: *The Future of the Greatest Snow on Earth: Projections for 2015/16 and the 21st Century*. Utah Snow and Avalanche Workshop, Sandy, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Park City Friends of the Library Author Luncheon, Park City, UT.

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. University of Utah Fall Urologic Summit, Stein Erickson Lodge, Park City, UT.

Steenburgh, W. J., 2015: Lake effect in complex terrain: Operational needs and research opportunities (with Paul Sisson, NWSFO Burlington). Amer. Meteor. Soc. Webinar Series [available at <http://www.nssl.noaa.gov/mtn-webinars/steenburgh_sisson_webinar.mp4>].

Steenburgh, W. J., 2015: *Secrets of the Greatest Snow on Earth*. Utah Valley University, Orem, UT.

Steenburgh, W. J., 2014: *Secrets of the Greatest Snow on Earth*. Stegner Lecture, S. J. Quinney College of Law, University of Utah.

Steenburgh, W. J., 2014: *Secrets of the Greatest Snow on Earth*. Alta Lodge, Alta, UT.

Steenburgh, W. J., 2014: *Secrets of the Greatest Snow on Earth*. Utah Snow and Avalanche Workshop, Sandy, UT.

Steenburgh, W. J., 2014: *Orographic Precipitation and Atmospheric Rivers over the Western United States*. University of Bern, Bern, Switzerland.

Steenburgh, W. J., 2014: *Secrets of the Greatest Snow on Earth*. Ski Utah Media Day, Snowbird, UT.

Steenburgh, W. J., 2014: *Lake Effect Snow: Adventures from the Wasatch Mountains to the Tug Hill Plateau*, Tug Hill Commission, West Monroe, NY.

Steenburgh, W. J., 2013: *Lies, Damned Lies, and Seasonal Forecasts*, NWS Forecast Office, Salt Lake City, UT.

Steenburgh, W. J., 2013: *Adventures in Mountain Weather and Climate*, Nakama Presentation, Research Administration, University of Utah.

Steenburgh, W. J., and T. Garrett, 2012: *Live Chat: The Science of Avalanches*. Science Live. http://news.sciencemag.org/sciencenow/2012/02/live-chat-the-science-of-avalanc.html

Steenburgh, W. J., 2011: *Dirty little secrets of the Greatest Snow on Earth*, Utah Snow and Avalanche Workshop, Utah Avalanche Center, Salt Lake City, UT.

Steenburgh, W. J., 2011: *Front–mountain interactions*, COMET/MSC Winter Weather Course, Boulder, CO.

Steenburgh, W. J., 2011: *Dirty little secrets of the Greatest Snow on Earth*, Osher Lifelong Learning Institute, University of Utah.

Steenburgh, W. J., 2011: *Graduate school survival guide*, 10th Annual AMS Student Conference, Seattle, WA.

Steenburgh, W. J., 2011: *Dirty little secrets of the Greatest Snow on Earth*, ENVST 2100: Introduction to the Environment and Sustainability, University of Utah.

Steenburgh, W. J., 2010: *Dirty little secrets of the Greatest Snow on Earth*, Swaner Preserve and EcoCenter, Park City, UT.

Steenburgh, W. J., 2010: *Dirty little secrets of the Greatest Snow on Earth*, Global Change and Ecosystems Center Seminar Series, University of Utah.

Steenburgh, W. J., 2010: *Dirty little secrets of the Greatest Snow on Earth and the future of the Great Salt Lake*, Great Salt Lake Forum, Salt Lake City, UT.

Steenburgh, W. J., 2010: *Dirty little secrets of the Greatest Snow on Earth*, Brigham Young University, UT.

Steenburgh, W. J., 2010: *Dirty little secrets of the Greatest Snow on Earth*, University of Nebraska-Lincoln, NE.

Steenburgh, W. J., 2010: *Global warming: Facts, fiction, and personal perspectives*. MET E 1001: Energy Resources in a Sustainable World, University of Utah.

Steenburgh, W. J., and T. Painter, 2010: *Dirty little secrets of the Greatest Snow on Earth*, Alta Ski Area, UT.

Steenburgh, W. J., and T. Painter, 2010: *Dirty little secrets of the Greatest Snow on Earth*, Climate Teach In, University of Utah.

Steenburgh, W. J., 2009: *Utah outlook on climate change*, Rio-Tinto Kennecott.

Steenburgh, W. J., 2009: *Climate change, Utah, and human health. Utah Public Heath Grand Rounds Workshop*, Salt Lake City, UT.

Steenburgh, W. J., 2009: *Utah outlook on climate change*, Utah Energy Forum, Salt Lake City, UT.

Steenburgh, W. J., 2009: *Front-mountain interactions over the Intermountain West*. University of Wisconsin-Madison.

Steenburgh, W. J., 2008: *Climate change and human health*, Health Education Association of Utah Spring Conference, West Valley City, UT.

Steenburgh, W. J., M. Meyers, and D. M. Schultz, 2008: *Bridging the gap between mountain weather research and operations, AMS/MSC/COMET Mountain Weather Workshop*, Whistler, BC, Canada.

Steenburgh, W. J., 2008: *Global warming: The facts and the fiction*, University of Utah Alumni Association, St. George, UT.

Steenburgh, W. J., 2008: *Utah outlook on climate change*, Utah Energy Association, Salt Lake City, UT.

Steenburgh, W. J., 2008: *Surviving graduate school and making your mark in the atmospheric and related sciences*, University of Arizona.

Steenburgh, W. J., 2007: *Mission Impossible: The Utah Climate Science Report for Gov. Jon Huntsman, Jr.*, University of Utah Department of Biology

Steenburgh, W. J., 2007: *Techniques and tools for precipitation prediction in complex terrain*, MSC/COMET Winter Weather Course.

Steenburgh, W. J., 2007: *BRAC Climate Science Report Overview*, Utah Gov. Jon Huntsman, Jr.’s Blue Ribbon Advisory Council on Climate Change.

Steenburgh, W. J., 2006: *Everything you wanted to know about the Great Salt Lake effect but were afraid to ask*, Utah State University.

Steenburgh, W. J., 2005: *Improved performance measures for NWS gridded forecasts*, NWS-WR SOO/DOH Workshop.

Steenburgh, W. J., 2004: *Using the MesoWest cooperative networks for environmental analysis and prediction*, NOAA National Severe Storms Laboratory.

Steenburgh, W. J., 2004: *Mountains of snow: Orographic storms of the western United States*. American Avalanche Association Fall Weather Seminar, Snowbird, UT.

Steenburgh, W. J., 2003: *Dynamics and microphysics of orographic storms*, MSC/COMET Winter Weather Course.

Steenburgh, W. J., 2002: *Numerical weather prediction: The ultimate test of supercomputing*. University of Utah High School Computing Institute.

Steenburgh, W. J., 2002: *Weather support for the 2002 Olympic and Paralympic Winter Games*, Marine Sciences Research Center, State University of New York, Stony Brook.

Steenburgh, W. J., 2002: *ADAS, MesoWest, and IFPS challenges, tools, and strategies*, NWS-WR SOO/DOH Workshop.

Steenburgh, W. J., 2002: *Cool-season orographic precipitation processes and prediction*, MSC/COMET Winter Weather Course.

Steenburgh, W. J., 2001: *Weather research and forecasting advances for the 2002 Olympic Winter Games*, University of Innsbruck, Austria.

Steenburgh, W. J., 2000: *Educational applications of mesoscale modeling*, UCAR/UNIDATA Summer Workshop.

Steenburgh, W. J., 1999: *Orographic cyclogenesis*, UCAR/COMET Mesoscale Analysis and Prediction Course.

Steenburgh, W. J., 1997: *Mesoscale modeling over western North America: Model-aided studies and real-time applications*, UCAR/COMET Mesoscale Analysis and Prediction Course.

# Professional Service

2017 – present Associate Editor, *Monthly Weather Review*

2019 – 2022 Councilor, American Meteorological Society

2014 Program Committee, National Weather Association Annual Meeting

2009 – 2012 Member, UCAR/Unidata Policy Committee

1994 – present Member, American Meteorological Society

2003 – 2006 Chair, UCAR/Unidata User Committee

2003 – 2006 User Committee Representative, UCAR/Unidata Policy Committee

1998 – 2006 UCAR/Unidata User Committee

2001 – 2006 Associate Editor, *Weather and Forecasting*

2005 Utah Sci. Center Avalanche, Weather, Mountains and Risk Discussion Panel

2004 Chair, Workshop on Weather Prediction in the Intermountain West

2000 – 2003 AMS Mountain Meteorology Committee

1996 – 2002 Head, Mesoscale Modeling Team for the 2002 Olympic Winter Games

2002 Co-chair (with Louisa Nance), AMS Mountain Meteorology Conference

1999 – 2001 PM10 SIP Modeling Workgroup, State of Utah Dept. of Environmental Quality

2000 Chair, Workshop on Weather Prediction in the Intermountain West

1999 Chair, Workshop on Weather Prediction in the Intermountain West

1998 Chair, Workshop on Weather Prediction in the Intermountain West

1997 Chair, Workshop on Weather Prediction in the Intermountain West

1994 – 1996 Manager, Workstation MM5 Users’ Group

1994 – 1996 Advisory Committee for the PSU/NCAR Mesoscale Model

1994 – 1996 Puget Sound Regional Modeling Committee

# University Service

2024 – 2025 Chair, Department of Atmospheric Sciences Undergraduate Affairs

Committee

2023 – 2025 Department of Atmospheric Sciences Undergraduate Affairs Committee

2023 – 2024 College of Science EDI Committee

2019 – 2023 University of Utah Fulbright Interview Team

2020 – 2023 College of Mines and Earth Sciences Committee for the Advancement of

Inclusion and Diversity

2020 – 2021 Co-Chair, College of Mines and Earth Sciences Committee for the

Advancement of Inclusion and Diversity  
2015 – 2016 Co-Chair, CMES Dean Search Committee

2014 – 2020 College of Mines and Earth Sciences Faculty Relations Committee

2014 – 2020 Department of Atmospheric Sciences Undergraduate Curriculum Committee

2013 – 2016 Executive Committee, Global Change and Sustainability Center

2005 – 2011 Chair, Department of Meteorology

2005 – 2011 College of Mines and Earth Sciences College Council

2005 – 2011 College of Mines and Earth Sciences Executive and Space Committee

2004 – 2006 College of Mines and Earth Sciences Distinguished Lecture Series Committee

1996 – 2005 Department of Meteorology Undergraduate Advisor

2003 – 2004 Chair, College of Mines and Earth Sciences Faculty Relations Committee

2001 – 2004 Center for High Performance Computing Faculty Advisory Board

1998 – 2004 Department of Meteorology Curriculum Committee

2001 – 2002 Chair, College of Mines and Earth Sciences Teaching Committee

1996 – 2002 College of Mines and Earth Sciences Teaching Committee

1999 – 2001 Chair, College of Mines and Earth Sciences Computer Committee

1997 – 2001 College of Mines and Earth Sciences Computer Committee

2000 College of Science Day Lecturer

1999 College of Science Day Lecturer

1996 – 1998 Leader, Department of Meteorology Semester Conversion

1997 – 1998 Academic Computing and Library Information Systems Advisory Committee

1998 Center for High Performance Computing Visualization Task Force

1998 College of Science Day Lecturer

1997 College of Science Day Lecturer

1996 College of Science Day Lecturer

1996 Featured Instructor, Commercials promoting use of technology in the classroom

# Consulting

Orange County Water District, 2021

Ramboll Environ, 2016–17