

John D. Horel

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EDUCATION

- * Ph.D. 1982, Atmospheric Sciences, University of Washington
- * B.S. 1977, Meteorology, San Jose State University

PROFESSIONAL EXPERIENCE

- * 1996-present, Professor, Atmospheric Sciences, University of Utah
- * 2018-2023, Chair, Atmospheric Sciences, University of Utah
- * 2002-2006, Director, NOAA Cooperative Institute for Regional Prediction, University of Utah
- * 1996-1998, Acting Director, Cooperative Institute for Regional Prediction, University of Utah
- * 1990-1996, Associate Professor, Meteorology, University of Utah
- * 1986-1990, Assistant Professor, Meteorology, University of Utah
- * 1982-1986, Assistant Research Professor, Scripps Institution of Oceanography

RESEARCH ACTIVITIES

My research is centered on the observation and analysis of weather and climate processes in mountainous regions. My research group is involved in research and software development related to providing access to environmental observations for operational, research, and educational applications (<https://horel.chpc.utah.edu/>). This research and development is related to fire weather applications, flash flooding, the Great Salt Lake, and air quality along the Wasatch Front.

RESEARCH-TO-OPERATIONS ACTIVITIES

The research and development undertaken initially by the MesoWest team in my group led to the development of a Public Benefit Corporation, Synoptic Data (<https://synopticdata.com>), whose mission is to provide expanded access to environmental data to enhance public safety, improve the productivity of government agencies and commercial entities, and assist in research and educational initiatives to advance the understanding of Earth systems. I serve as a Director on Synoptic Data's board, and past members of the MesoWest team and the University of Utah are shareholders in Synoptic Data.

AWARDS

- * Named Session for the Mountain Meteorology Conference of the American Meteorology Society. 2022
- * Francis W. Reichelderfer Award "For development and leadership of the MesoWest observational network in support of operations, research, and education to improve understanding and forecasting of mountain meteorology." 2016
- * Fellow of the American Meteorological Society 2002
- * Outstanding Service Award, National Weather Service Western Region, "For outstanding service to the weather support group for the 2002 Olympic Winter Games" 2002
- * College of Mines and Earth Sciences Outstanding Teacher Award 1993-94

MEMBERSHIPS

American Meteorological Society, American Geophysical Society, American Association for the Advancement of Science

COURSES TAUGHT DURING THE PAST FIVE YEARS

- * ATMOS 5050/6050/ME EN 6750: Annually through Spring 2024. Environmental Instrumentation (course developer)
- * ATMOS 3000: Annually through Fall 2022. Professional Development in the Atmospheric Sciences (course developer)
- * ATMOS 5340: Annually through Fall 2022. Environmental Programming and Statistics (course developer)
- * ATMOS 5100: Spring 2020. Introduction to Atmospheric Dynamics
- * ATMOS 6010: Fall 2019. Fundamentals of Dynamic Meteorology

REFEREED PUBLICATIONS

Texts and 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.
- Horel, J., 2003: Terrain-forced mesoscale circulations. *Handbook of Weather, Climate, and Water: Dynamics, Climate, Physical Meteorology, Weather Systems, and Measurements*. Edited by T. Potter and B. Colman. Wiley and Sons. 562-573.
- Horel, J. D., and J. E. Geisler, 1996: *Global Environmental Change: An Atmospheric Perspective*. 165 pp. John Wiley and Son. ISBN:0471130737

Journal or Refereed Publications (89 total)

1. Horel, J. and J. Powell, 2024: Analysis and prediction of summer rainfall over southwestern Utah. Submitted to *Wea. Forecasting*.
2. Mendoza, D., A. Gonzalez, A. Jacques, C. Johnson, J. Horel, 2024: Electric Buses as an Air Pollution and Meteorological Observation Network. Submitted to *Science of the Total Environment*. <http://dx.doi.org/10.2139/ssrn.4646331>
3. McCutchan, A., J. Horel, S. Hoch, 2024: Terminal doppler weather radar retrievals in complex terrain during a summer high ozone period. Accepted. *J. Atmos. Oceanic Technol.*
4. Meyer, J., M. Skiles, J. Horel, P. Kormos, A. Hedrick, E. Trujillo, 2023: Operational water forecast ability of the iSnobal-HRRR coupling; an evaluation to adapt into production environments. *Geoscientific Model Development*, 16, 233–250, <https://doi.org/10.5194/gmd-16-233-2023>
5. Umannakwe, A., M. Parvania, H. Nguyen, J. Horel, K. Davis, 2022: Data-Driven Spatio-Temporal Analysis of Wildfire Risk to Power Systems Operation. *IET Generation, Transmission & Distribution*, 16, 2531-2546. <https://doi.org/10.1049/gtd2.12463>
6. Gowan, T. A., J. Horel, A. Jacques, A. Kovac, 2022: Using cloud computing to analyze model output archived in ZARR format. *Journal of Atmospheric and Oceanic Technology*, 34, 449–462. <https://doi.org/10.1175/JTECH-D-21-0106.1>
7. Dougherty, K., J. Horel, J. Nachamkin, 2021: Forecast Skill for California Heavy Precipitation Periods from the High-Resolution Rapid Refresh Model and the Coupled Ocean–Atmosphere Mesoscale Prediction System, *Wea. Forecasting*, 36, 2275–2288. <https://doi.org/10.1175/WAF-D-20-0182.1>

8. Hallar, G. and coauthors (author 8 of 26), 2021: Coupled Air Quality and Boundary-Layer Meteorology in Western U.S. Basins during Winter: Design and Rationale for a Comprehensive Study. *Bull. Amer. Meteor. Soc.* 102, E2012–E2033, <https://doi.org/10.1175/BAMS-D-20-0017.1>
9. Shah, J., and 19 coauthors listed alphabetically, 2021: The Wasatch Environmental Observatory: A mountain to urban research network in the semi-arid Western US. *Hydrologic Processes*. 35, <http://doi.org/10.1002/hyp.14352>
10. Gowan, T., and J. Horel, 2020: Evaluation of IMERG-E Precipitation Estimates for Fire Weather Applications in Alaska. *Wea. Forecasting*, 35, 1831–1843. <https://doi.org/10.1175/WAF-D-20-0023.1>
11. Blaylock, B., J. Horel, 2020: Comparison of Lightning Forecasts from the High-Resolution Rapid Refresh Model to Geostationary Lightning Mapper Observations. *Wea. Forecasting*. 35, 401-416. <https://journals.ametsoc.org/doi/abs/10.1175/WAF-D-19-0141.1>
12. Foster, CS, Crosman, ET, Horel, JD, Lyman, S, Fasoli, B, Bares, R and Lin, JC. 2019. Quantifying methane emissions in the Uintah Basin during wintertime stagnation episodes. *Elem Sci Anth*, 7: 24. DOI: <https://doi.org/10.1525/elementa.362>
13. Craft, K., J. Horel, 2019: Variations in surface albedo arising from flooding and dessication cycles on the Bonneville Salt Flats, Utah. *J. Appl. Meteor. Clim.*, 58. 773-785. <https://journals.ametsoc.org/doi/full/10.1175/JAMC-D-18-0219.1>
14. Mendoza, D.L., Crosman, E.T., Mitchell, L.E., Jacques, A., Fasoli, B., Park, A., Lin, J.C., Horel, J., “The TRAX Light-Rail Train Air Quality Observation Project”, *Urban Sci.* 2019, 3(4), 108. Doi:10.3390/urbansci3040108
15. Gil, Y., S. A. Pierce, H. Babaie, A. Banerjee, K. Borne, G. Bust, M. Cheatham, I. Ebert-Uphoff, C. Gomes, M. Hill, J. Horel, L. Hsu, J. Kinter, C. Knoblock, D. Krum, V. Kumar, P. Lermusiaux, Y. Liu, C. North, V. Pankratius, S. Peters, B. Plale, A. Pope, S. Ravela, J. Restrepo, A. Ridley, H. Samet, S. Shekhar, 2019: Intelligent Systems for Geosciences: An Essential Research Agenda. *Communications of the ACM*, 62, 76-84. <https://doi.org/10.1145/3192335>
16. Lin, J., L. Mitchell, E. Crosman, D. Mendoza, M. Buchert, R. Bares, B. Fasoli, D. Bowling, D. Pataki, D. Catharine, C. Strong, K. Gurney, R. Patarasuk, M. Baasandorj, A. Jacques, S. Hoch, J. Horel, J. Ehleringer, 2018: CO₂ and carbon emissions from cities: linkages to air quality, socioeconomic activity and stakeholders in the Salt Lake City urban area. *Bull Amer. Meteor. Soc.* 2325-2339. <https://doi.org/10.1175/BAMS-D-17-0037.1>
17. Blaylock, B., J. Horel, C. Galli, 2018: High-Resolution Rapid Refresh Model Data Analytics Derived on the Open Science Grid to Assist Wildfire Weather Assessment. *Journal of Atmospheric and Oceanic Technology*, 35, 2213-2227. <https://journals.ametsoc.org/doi/abs/10.1175/JTECH-D-18-0073.1>
18. Mitchell, L., E. Crosman; A. Jacques; B. Fasoli, L. Leclair-Marzolf, J. Horel, D. Bowling, J. Ehleringer, J. Lin, 2018: Monitoring of greenhouse gases and pollutants across an urban area using a light-rail public transit platform. *Atmospheric Environment*. 187, 9-23. <https://doi.org/10.1016/j.atmosenv.2018.05.044>
19. McCorkle, T., J. Horel, A. Jacques, T. Alcott, 2018: Evaluating the experimental High-Resolution Rapid Refresh–Alaska modeling system using USArray pressure observations. *W. Forecasting*, 33, 933-953. DOI: 10.1175/WAF-D-17-0155.1
20. Foster, C., E. Crosman, L. Holland, D. Mallia, B. Fasoli, J. Horel, J. Lin, 2018: Constraining methane emissions in Utah’s Uintah Basin with ground-based observations and a time-reversed Lagrangian transport model. *J. Geophys. Res. Atmos.* 122, <https://doi.org/10.1002/2017JD027480>.

21. Blaylock, B., J. Horel, S. Liston, 2017: Cloud archiving and data mining of High Resolution Rapid Refresh Model Output. *Computers and Geosciences*, 109, 43-50.
doi.org/10.1016/j.cageo.2017.08.005
22. Jacques, A., J. D. Horel, E. T. Crosman, F. L. Vernon, 2017: Tracking Mesoscale Pressure Perturbations Using the USArray Transportable Array. *Mon. Wea. Rev.* 145, 3119-3142.
<http://journals.ametsoc.org/doi/pdf/10.1175/MWR-D-16-0450.1>
23. Crosman, E., A. Jacques, J. Horel, 2017: A Novel Approach for Monitoring Vertical Profiles of Boundary-Layer Pollutants: Utilizing Routine News Helicopter Flights. *Atmospheric Pollution Research*. 8, 828-835. <http://dx.doi.org/10.1016/j.apr.2017.01.013>
24. Foster, C., E. Crosman, J. Horel, 2017: Simulations of a Cold-Air Pool in Utah's Salt Lake Valley: Sensitivity to Land Use and Snow Cover. *Boundary Layer Meteorology*. 164, 63-87.
<http://dx.doi.org/10.1007/s10546-017-0240-7>
25. Crosman, E., J. Horel, 2017: Large-eddy simulations of a Salt Lake Valley cold-air pool. *Atmospheric Research*. 193, 10–25. <http://10.1016/j.atmosres.2017.04.010>
26. Blaylock, B., J. Horel, E. Crosman, 2017: Impact of Lake Breezes on Summer Ozone Concentrations in the Salt Lake Valley. *J. Appl. Meteor. Clim.* 56, 353-370.
<http://journals.ametsoc.org/doi/abs/10.1175/JAMC-D-16-0216.1>
27. Horel, J., E. Crosman, A. Jacques, B. Blaylock, S. Arens, A. Long, J. Sohl, R. Martin, 2016: Summer ozone concentrations in the vicinity of the Great Salt Lake. *Atmospheric Science Letters*. 17, 480-486. doi: 10.1002/asl.680
28. Jacques, A., J. Horel, E. Crosman, F. Vernon, J. Tytell, 2016: The Earthscope US Transportable Array 1 Hz Surface Pressure Dataset. *Geoscience Data Journal*, 3: 29–36. doi: 10.1002/gdj3.37
29. Crosman, E., and J. Horel 2016: Winter lake breezes near the Great Salt Lake. *Boundary Layer Meteorology*. 159, 439-464. doi:10.1007/s10546-015-0117-6
30. Nauslar, N. J., T. J. Brown, and J. D. Horel, 2016: Verification of National Weather Service spot forecasts using atmospheric sounding observations. *J. Operational Meteor.*, 4 (4), 46-57, doi: <http://dx.doi.org/10.15191/nwajom.2016.0404>.
31. Lawson, J., and J. Horel 2015: Ensemble forecast uncertainty of the 1 December 2011 Wasatch downslope windstorm. *Wea. Forecasting*, 30, 1749-1761. doi: <http://dx.doi.org/10.1175/WAF-D-15-0034.1>
32. Jacques, A., J. Horel, E. Crosman, F. Vernon, 2015: Central and Eastern United States surface pressure variations derived from the USArray network. *Mon. Wea. Rev.* 143, 1472-1493.
doi:<http://dx.doi.org/10.1175/MWR-D-14-00274.1>
33. Lareau, N., and J. Horel, 2015: Turbulent erosion of cold-air pools. *J. Atmos. Sci.*, 72, 1409-1427.
doi: <http://dx.doi.org/10.1175/JAS-D-14-0173.1>
34. Lawson, J., and J. Horel 2015: Analysis of the 1 December 2011 Wasatch downslope windstorm. *Wea. Forecasting*, 30, 115-135. doi: <http://dx.doi.org/10.1175/WAF-D-13-00120.1>
35. Lareau, N., and J. Horel, 2015: Dynamically induced displacements of a persistent cold-air pool. *Boundary-Layer Meteorology*, 154, 2, 291-316. <http://10.1007/s10546-014-9968-5>
36. Neemann, E., E. Crosman, J. Horel, L. Avey, 2015: Simulations of a cold-air pool associated with elevated wintertime ozone in the Uintah Basin, Utah. *Atmos. Chem. Phys.*, 15, 135-151, 2015.
doi:10.5194/acp-15-135-2015 154, 2, 291-316.
37. Lammers, M., and J. Horel, 2014: Verification of National Weather Service spot forecasts using surface observations. *J. Operational Meteor.*, 2, 246–264.
<http://dx.doi.org/10.15191/nwajom.2014.0220>.
38. Whiteman, C. D., S. W. Hoch, J. D. Horel, and A. Charland, 2014: Relationship between particulate air pollution and meteorological variables in Utah's Salt Lake Valley. *Atmospheric Environment*, 94, 742-753. doi:10.1016/j.atmosenv.2014.06.012

39. Ralph, F. M., and J. Horel (author 19 of 25 co-authors), 2014: A vision for future observations for western U.S. extreme precipitation and flooding. *Jour. of Contemporary Water Research & Education*, 153, 16-32. [http:// DOI: 10.1111/j.1936-704X.2014.03176.x](http://DOI:10.1111/j.1936-704X.2014.03176.x)
40. Horel, J., R. Ziel, C. Galli, J. Pechmann, X. Dong, 2014: An evaluation of fire danger and behavior indices in the Great Lakes region calculated from station and gridded weather information. *International Journal of Wildland Fire*. 23, 202–214. <http://10.1071/WF12186>
41. Horel, J., D. Ziegenfuss, K. Perry, 2013: Transforming an atmospheric science curriculum to meet students' needs. *Bull. Amer. Meteor. Soc.*, 94, 475-484. <http://dx.doi.org/10.1175/BAMS-D-12-00115.1>
42. Tyndall, D., and J. Horel, 2013: Impacts of mesonet observations on meteorological surface analyses. *Wea. Forecasting*. 28, 254-269. <http://dx.doi.org/10.1175/WAF-D-12-00027.1>
43. Lareau, N., E. Crosman, C. Whiteman, J. Horel, S. Hoch, W. Brown, T. Horst, 2013: The Persistent Cold-Air Pool Study. *Bull Amer. Meteor. Soc.* **94**, 51–63. <http://dx.doi.org/10.1175/BAMS-D-11-00255.1>
44. Crosman, E. and J. Horel, 2012: Idealized Large-Eddy Simulations of Sea and Lake Breezes: Sensitivity to Lake Diameter, Heat Flux and Stability. *Boundary Layer Meteorology*. 144, 309-328. 10.1007/s10546-012-9721-x
45. Lareau, N. and J. Horel, 2012: The Climatology of Synoptic- Scale Ascent Over Western North America: A Perspective on Storm Tracks. *Mon. Wea. Rev.* 140, 1761-1778. <http://dx.doi.org/10.1175/MWR-D-11-00203.1>
46. de Pondeca, M., G. Manikin, G. DiMego, S. Benjamin, D. Parrish, R. Purser, W. Wu, J. Horel, D. Myrick, Y. Lin, R. Aune, D. Keyser, B. Colman, G. Mann, J. Vavra, 2011: The Real-Time Mesoscale Analysis at NOAA's National Centers for Environmental Prediction: Current status and development. *Wea. Forecasting*, **26**, 593-612. <http://dx.doi.org/10.1175/WAF-D-10-05037.1>
47. Wagner, W., and J. Horel, 2011: Observations and simulations of snow surface temperature on cross-country ski racing courses. *Cold Regions Science and Technology*, **66-1**, 1-11. <http://doi:10.1016/j.coldregions.2010.12.003>
48. Crosman, E., and J. Horel, 2010: Numerical sensitivity studies of sea and lake breezes: a review. *Boundary Layer Meteorology*. **137**, 1-29. 10.1007/s10546-010-9517-9
49. Horel, John D., and X. Dong 2010: An evaluation of the distribution of Remote Automated Weather Stations (RAWS). *Journal of Appl. Meteor. and Clim.*, **49**, 1563-1578
50. <http://dx.doi.org/10.1175/2010JAMC2397.1>
51. Tyndall, D., J. Horel, and M. dePondeca, 2010: Sensitivity of surface air temperature analyses to background and observation errors. *Wea. Forecasting*, **25**, 852-865. <http://dx.doi.org/10.1175/2009WAF2222304.1>
52. Crosman, E., and J. Horel, 2008: MODIS-derived surface temperature of the Great Salt Lake, *Remote Sensing of Environment.*, 113, 73-81. <http://doi:10.1016/j.rse.2008.08.013>
53. Myrick, D., and J. Horel, 2008: Sensitivity of surface analyses over the western United States to RAWS observations. *Wea. Forecasting*, 23, 145-158. <http://dx.doi.org/10.1175/2007WAF2006074.1>
54. Zumpfe, D., J. Horel, 2007: Lake-breeze fronts in the Salt Lake Valley. *J. Appl. Meteor.*, 46, 196-211. <http://dx.doi.org/10.1175/JAM2449.1>
55. Myrick, D., J. Horel, 2006: Verification over the Western United States of surface temperature forecasts from the National Digital Forecast Database. *Wea. Forecasting*, 21, 869-892. <http://dx.doi.org/10.1175/WAF946.1>
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<http://dx.doi.org/10.1175/WAF847.1>
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61. Lazarus, S., C. Ciliberti, J. Horel, K. Brewster, 2002: Near-real-time applications of a mesoscale analysis system to complex terrain. *Wea. Forecasting*, 17, 971-1000.
[http://dx.doi.org/10.1175/1520-0434\(2002\)017<0971:NRTAOA>2.0.CO;2](http://dx.doi.org/10.1175/1520-0434(2002)017<0971:NRTAOA>2.0.CO;2)
62. 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. [http://dx.doi.org/10.1175/1520-0469\(1984\)041<1601:AATETT>2.0.CO;2](http://dx.doi.org/10.1175/1520-0469(1984)041<1601:AATETT>2.0.CO;2)
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[http://dx.doi.org/10.1175/1520-0434\(1994\)009<0508:POCACP>2.0.CO;2](http://dx.doi.org/10.1175/1520-0434(1994)009<0508:POCACP>2.0.CO;2)
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85. Van Den Dool, H.M., Horel, J.D. 1984: An Attempt to Estimate the Thermal Resistance of the Upper Ocean to Climatic Change. *J. Atmos. Sci.*, 41, 1601-1612.
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GRADUATE STUDENTS; 34 M.S.; 13 Ph.D. (area of employment)

* Current: Brittany Welch, M. Galant

1. A. McCutchan, 2023: M.S. (U.S. Forest Service. Northern Research Station)
2. J. Powell, 2023: M.S. (Radiometrics Corporation)
3. K. Bestul, 2022: M.S. (National Weather Service)
4. B. Welch, 2021, M.S., (graduate student, University of Utah)
5. T. Gowan, 2021, Ph.D. (DTN)
6. K. Dougherty, 2020, M.S. (National Centers for Environmental Prediction)
7. B. Blaylock, 2019, Ph.D. (Naval Research Laboratory)
8. S. Robertson, 2018. M.S.S.T. (instructor, Weber State University)
9. M. Wessler, 2018. M.S. (National Weather Service)
10. K. Craft, 2018. M.S. (Los Alamos National Laboratory)
11. T. McCorkle, 2017. M.S. (DTN)
12. A. Jacques, 2016. Ph.D. (University of Utah)
13. B. Blaylock, 2016. M.S. (Naval Research Laboratory)
14. A. Long, 2016. M.S. (National Weather Service)
15. C. Foster, 2015. M.S. (Instructor)
16. M. Lammers, 2014, M.S. (Maxar Technologies)
17. E. Neemann, 2014, M.S. (Utah Geospatial Resource Center)
18. W. Farr, 2014, M.S.T. (PacifiCorp)
19. N. Lareau, 2014, Ph.D. (University of Nevada Reno)
20. J. Lawson, 2013, M.S. (Utah State University)
21. D. Tyndall, 2011, Ph.D. (Naval Research Laboratory)
22. E. Crosman, 2011, Ph.D. (West Texas A&M)
23. N. Lareau, 2010, M.S. (University of Nevada Reno)
24. L. Jones, 2010, M.S. (Narwhal Group)
25. W. Wagner, 2009, M.S. (Alaska Avalanche Forecast Center)
26. X. Dong, 2009, M.S. CES (Zions Corporation)
27. D. Tyndall, 2008, M.S. (Naval Research Laboratory)
28. D. Myrick, 2006, Ph.D. (National Weather Service)
29. E. Crosman, 2005, M.S. (West Texas A&M)
30. D. Zumpfe, 2004. M.S. (National Weather Service)
31. D. Myrick, 2003. M.S. (National Weather Service)
32. L. Holland, 2002. M.S. (Air Force)
33. L. Cheng, 2002. M.S. (National Weather Service)
34. C. Clements, 2001. M.S. (San Jose State University)
35. R. Swanson, 1998. Ph.D. (Air Force, Retired)
36. J. Slemmer, 1998. M.S (National Weather Service)
37. A. Haynes, 1998. M.S. (National Weather Service)
38. B. McDonald, 1998. Ph.D. (National Weather Service)
39. J. Stiff, 1997. M.S. (Broadcasting)
40. M. Braby, 1997. M.S. (Delta Airlines)
41. J. Mittelstadt, 1995. Ph.D. (National Weather Service)
42. R. Swanson, 1995. M.S. (Air Force)
43. C. Gibson, 1993. M.S. (National Weather Service)
44. L. Dunn, 1993. Ph.D. (National Weather Service, Retired)
45. A. Hahmann, 1992. Ph.D. (DTU Wind Energy)

46. T. Barker, 1991. Ph.D. (National Weather Service, Retired)
47. C. Jones, 1990. M.S. (University of California Santa Barbara)

SELECTED PROFESSIONAL ACTIVITIES DURING PAST TEN YEARS

- * Utah Energy & Power Innovation Center, Research Lead, Climate and Atmospheric Science, 2022-
- * Utah Data Science Center, Affiliated Member, 2020-
- * Board Member, Synoptic Data Corporation PBC, 2011-
- * NCAR RAL Advisory Panel, 2018-2021
- * NASA Review Panel, Fall 2019
- * External Reviewer. Department of Atmospheric Sciences. University of Wyoming. April 2019
- * Member, AMS Autonomous Vehicle and Meteorology Summit Organizing Committee. 2018
- * AMS/ITS Surface Transportation Committee. 2018-2020
- * Chair, AMS Nationwide Network of Networks Committee. 2016-2018
- * Program Co-Chair, Forum on Observing the Environment from the Ground Up. 2016
- * NSF Advisory Committee for Workshop on Intelligent Systems for Geosciences. 2015
- * External Reviewer, Oklahoma Mesonet. 2014
- * National Weather Association 2014 Annual Meeting Local Committee. 2014
- * Co-Chair, 2014 AMS/AGU Heads and Chair Meeting, 2014
- * Steering Committee, Program for Air Quality, Health, and Society, University of Utah. 2013-
- * AMS Committee on Open Environmental Information Services. 2013-
- * Chair, AMS Board of Higher Education. 2013-2015

SELECTED PRESENTATIONS

- * February 2024. CIWRO Workshop on Fire Weather and Forecasting. Norman, OK
- * November 2023. Southwest Higher Education Knowledge and Technology Exchange (SHEKATE). Salt Lake City, UT
- * October 2023. NASA Health and Air Quality Applied Sciences Conference. Salt Lake City, UT
- * April 2023. 7th Annual Utah Science for Solutions Conference. Provo, UT
- * June 2022. 20th AMS Mountain Meteorology, Park City, UT
- * March 2019. Session Chair. Wildfire Tech Summit. Sacramento, CA
- * November 2018. Invited Presentation. Wildfires in the Western United States. University of Nebraska.
- * January 2018. Session Chair. Nationwide Network of Networks. Sixth Symposium on the Weather, Water, and Climate Enterprise
- * October 2017. Panelist, NAS Workshop on the Future of Atmospheric Boundary Layer Observations. Warrenton, VA
- * January 2017. Invited Presentation. Surface Observations: How Do We Best Utilize the Flood of Observations From Fixed, Mobile, and Internet of Thing Platforms? 2017 AMS Observation Symposium. Seattle WA
- * January 2016. 19th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA and the AMS Board on the Urban Environment. New Orleans, LA
- * September 2015. Invited. KMA/COMET Olympic Forecaster Training Course 2015. Boulder, CO
- * June 2015. Invited. FHWA White Paper on Mobile Observations. Denver, CO
- * January 2015. Invited Panel Co-Chair. Undergraduate Education Statement. 24th AMS Symposium on Education. Phoenix, AZ
- * January 2015. 31st Conference on Environmental Information Processing Technologies. Phoenix, PA
- * August 2014. Invited Panelist. AMS Summer Community Meeting. State College, PA

FEDERAL AND OTHER RESEARCH SUPPORT DURING THE PAST FIVE YEARS

Pending (Lead PI)

- * Great Salt Lake Evaporation Modeling Program. Utah Division of Water Resources. \$259,292. 3/1/2024-6/2025.

Current (Lead PI)

- * Support Services for the National Mesonet Program of the National Weather Service. Agency: Synoptic Data Public Benefit Corporation. \$ 1,461,444 4/2020-4/2024.
- * Alaska Fire and Fuels System 2023-26. Agency: DOI BLM. Total Amount: \$117,681. 6/23-10/26.
- * Great Lakes Fire and Fuels System 2023-26. Agency:mGreat Lakes Compact. Total Amount: \$106,631. 6/23-10/26.
- * MesoWest program: Annual contributions from \$100-\$25,000 from private citizens, agencies, and commercial firms

Current (Co-I)

- * U.S.-Canada Center in Climate Resilient Western Interconnected Grid. National Science Foundation. \$5,000,000. 10/23-9/28 (lead PI: Parvania)
- * Mobile Air Quality Observation Project. \$440,000. 7/23-6/24. Utah Division of Air Quality. (Lead PI Mendoza)
- * REU Site: An Inclusive Research Experience in Alpine Meteorology (REALM). Agency: National Science Foundation. Total amount: \$557,504. 6/23-5/28 (lead PI: Hallar).
- * CSTAR: Collaborative Research to Advance Probabilistic Forecasting and Hazard Assessment in Mountainous Regions. Agency: NOAA. Total amount: \$450,000. 5/20-4/24. (lead-PI Steenburgh)

Prior during Past 5 years

- * REALM- Research Experience in Alpine Meteorology. Agency: National Science Foundation. Total amount: \$344,982. 6/19-5/23. (lead. PI: Hallar)
- * Fuel and Fire Project. Agency: Great Lakes Forest Fire Compact. Total amount: \$242,000. 1/08-12/23.
- * Impacts of the Great Salt Lake on Summer Ozone Concentrations Along the Wasatch Front. Agency: Utah Division of Air Quality. Total Amount: \$63,084. 7/21/-12/23.
- * Fire Weather Monitoring. Agency: Rocky Mountain Power. Total amount: \$59,633. 3/20-10/20.
- * Alaska Fire and Fuels System. Agency: DOI BLM. Total Amount: \$101,000. 9/16-4/21.
- * Assessment of HRRR Model Forecasts of Convective Outflows in the Fire Environment. Joint Fire Science Program. \$227,408. 9/17-6/20.
- * CSTAR: Collaborative Research to Advance Analysis, Forecast, and Decision Support Services for High-Impact Weather Events. Agency: NOAA. Total amount: \$450,000. 7/2017-6/20. (lead-PI Steenburgh)
- * Data Hub Services for the National Mesonet Project. NOAA/NWS subcontract with SynopticData. \$1,936,000. 1/17-4/20.
- * CIF21 DIBBs: STORM: Spatio-Temporal Online Reasoning and Management of Large Social and Science Data NSF DIBBs program. Agency: NSF. Total amount: \$1,157,975. 11/14- - 10/19. (Lead PI F. Lin)