

Julie L. Demuth, Ph.D.
Curriculum Vitae

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Education

- 2015 Ph.D., Public Communication and Technology, Colorado State University
Dissertation: “Developing a Valid Scale of Past Tornado Experiences”
- 2001 M.S., Atmospheric Science, Colorado State University
Thesis: “Objectively Estimating Tropical Cyclone Intensity and Wind Structure Using the
Advanced Microwave Sounding Unit”
- 1999 B.S., Meteorology, University of Nebraska-Lincoln

Professional Experience

- 2017 – present Project Scientist II – NCAR, Mesoscale and Microscale Meteorology Laboratory
- 2018 – 2020 Affiliate Faculty – University of Colorado, Department of Computer Science
- 2018 – 2019 Affiliate Faculty – Colorado State University, Department of Journalism and Media
Communication
- 2017 – 2019 Affiliate Faculty – Colorado State University, Department of Atmospheric Science
- 2015 – 2017 Project Scientist I – NCAR, MMM
- 2006 – 2015 Associate Scientist II and III – NCAR
- 2005 – 2006 Visiting Scientist – NCAR
- 2005 Research Associate (*part time*) – Cooperative Institute for Research in the Atmosphere,
Colorado State University, Fort Collins, CO
- 2003 – 2005 Program Officer – National Research Council, Board on Atmospheric Sciences and
Climate, Washington, DC
- 2002 Research Associate – Cooperative Institute for Research in the Atmosphere, Colorado
State University, Fort Collins, CO
- 2002 Fellow – National Research Council, Christine Mirzayan Science and Technology Policy
Graduate Student Fellowship Program, Board on Atmospheric Sciences and Climate
and Disasters Roundtable, Washington, DC
- 1999 Graduate Research Assistant – Department of Atmospheric Science, Colorado State
University
- 1997, 1998 Summer Research Intern – TRW, McLean, VA, and Washington, DC
- 1996 Summer Research Intern – National Oceanic and Atmospheric Administration, National
Weather Service, Test and Evaluation Branch, Sterling, VA

Publications

Refereed Journal Articles – In review

1. Demuth, J.L., R.E. Morss, I. Jankov, T. Alcott, C. Alexander, D. Nietfeld, T. Jensen, D. Novak, S Benjamin: Developing useful and usable convection-allowing model ensemble guidance for NWS forecasters. *Weather and Forecasting*. [submitted]
2. Morss, R.E., H. Lazrus, A. Bostrom, and J.L. Demuth: The influence of cultural worldviews on people’s responses to hurricane risks and threat information. Submitted to *Journal of Risk Research*.

3. Watts, J., R.E. Morss, C.M. Barton, and J.L. Demuth: Conceptualizing and implementing an agent-based model of information flow and decision making during hurricane threats. Submitted to *Environmental Modelling and Software*.

Refereed Journal Articles – Published

1. Bica, M., J.L. Demuth, J. Dykes, L. Palen, 2019: Communicating hurricane risks: Multi-method examination of risk imagery diffusion. In *Proceedings of Conference on Human Factors in Computing Systems (CHI 2019)*, ACM, New York, NY. Available online at <https://dl.acm.org/citation.cfm?id=3300545>
2. Morss, R.E., Lazrus, H., Demuth, J.L.: The “inter” within interdisciplinary research: Strategies for building integration across fields. *Risk Analysis: Perspectives Section* (in press)
3. Demuth, J.L., 2018: Explicating experience: Development of a valid scale of past hazard experience for tornadoes. *Risk Analysis*, 38, 1921-1943.
4. Demuth, J. L., R. E. Morss, L. Palen, Kenneth M. Anderson, Jennings Anderson, Marina Kogan, Melissa Bica, Kevin Stowe, Heather Lazrus, Jen Henderson, Olga Wilhelmi, 2018: “sometime da #beachlife ain't always da wave”: Understanding people’s evolving risk assessments and responses during Hurricane Sandy using Twitter. *Weather, Climate, and Society*, 10, 537-560.
5. Morss, R.E., Cuite, C.L., Demuth, J.L., Hallman, W. K., and Shwom, R. L., 2018: Is storm surge scary: The influence of hazard, impact, and fear-based messages and individual differences on responses to hurricane risks. *International Journal of Disaster Risk Reduction*, 30, 44-58.
6. Bostrom, A., Morss, R.E., Lazo, J.K., Demuth, J.L., Lazrus, H., 2018: Eyeing the storm: How residents of coastal Florida see hurricane forecasts and warnings. *International Journal of Disaster Risk Reduction*, 30, 105-119.
7. Stowe, K., M. Palmer, J. Anderson, L. Palen, K. M. Anderson, M. Kogan, R. Morss, J. Demuth, and H. Lazrus, 2018: Developing and evaluating annotation procedures for Twitter data during hazard events. *Proceedings of the Joint Workshop on Linguistic Annotation, Multiword Expressions and Constructions*, Sante Fe, NM.
8. Morss, R.E., J.L. Demuth, H. Lazrus, L. Palen, C.M. Barton, C.A. Davis, C. Snyder, O.V. Wilhelmi, K.M. Anderson, D.A. Ahijevych, J. Anderson, M. Bica, K.R. Fossell, J. Henderson, M. Kogan, K. Stowe, J. Watts, 2017: Hazardous weather prediction and communication in the modern information environment. *Bulletin of the American Meteorological Society*, 98, 2653-2674.
9. Cuite, C. L, R. L. Shwom, W. K. Hallman, R. E. Morss, J. L. Demuth, 2017: Improving coastal storm evacuation messages. *Weather, Climate, and Society*, 9, 155-170.
10. Demuth, J. L., R. E. Morss, J. K. Lazo, and C. Trumbo, 2016: The effects of past hurricane experiences on evacuation intentions through risk perception and efficacy beliefs: A mediation analysis. *Weather, Climate, and Society*, 8, 327-344.
11. Morss, R. E., J. L. Demuth, J. K. Lazo, K. Dickinson, H. Lazrus, and B. H. Morrow, 2016: Understanding public hurricane evacuation decisions and responses to forecast and warning messages. *Weather and Forecasting*, 31, 395-417.
12. Bostrom, A., R. E., Morss, J. K. Lazo, J. L. Demuth, and H. Lazrus, 2016: A mental models study of hurricane forecast and warning production, communication, and decision making. *Weather, Climate, and Society*, 8, 111-129.
13. Morss, R. E., K. Mulder, J. K. Lazo, and J. L. Demuth, 2016: How do people perceive, understand, and respond to flash flood risks and warnings. *Journal of Hydrology*, 541, 649-664.
14. Lazrus, H., R. E. Morss, J. L. Demuth, J. K. Lazo, and A. Bostrom, 2015: “Know what to do if you encounter a flash flood”: Mental models analysis for improving flash flood risk communication and public decision making. *Risk Analysis*, 36, 411-427.
15. Morss, R. E., J. L. Demuth, A. Bostrom, J. K. Lazo, and H. Lazrus, 2015: Flash flood risks and warning decisions: A mental models study of forecasters, public officials, and media broadcasters in Boulder, Colorado. *Risk Analysis*, 35, 2009-2028.

16. Lazo, J. K., A. Bostrom, R. E. Morss, J. L. Demuth, and H. Lazrus, 2015: Factors affecting hurricane evacuation intentions. *Risk Analysis*, 35, 1837-1857.
17. Demuth, J. L., R. E. Morss, J. K. Lazo, and D. C. Hilderbrand, 2013: Improving effectiveness of weather risk communication on the NWS point-and-click webpage. *Weather and Forecasting*, 28, 711-726.
18. Demuth, J. L., R. E. Morss, B. H. Morrow, and J. K. Lazo, 2012: Creation and communication of hurricane risk information. *Bulletin of the American Meteorological Society*, 93, 1133-1145.
19. Stewart, A. E., J. K. Lazo, R. E. Morss, and J. L. Demuth, 2012: The relationship of weather salience with the perceptions and uses of weather information in a nationwide sample of the United States. *Weather, Climate, and Society*, 4, 172-189.
20. Demuth, J. L., J. K. Lazo, and R. E. Morss, 2011: Exploring variations in people's sources, uses, and perceptions of weather forecasts. *Weather, Climate, & Society*, 3, 177-192.
21. Morss, R. E., J. K. Lazo, and J. L. Demuth, 2010: Examining the use of weather forecasts in decision scenarios: Results from a U.S. survey with implications for uncertainty communication. *Meteorological Applications*, 17, 149-162.
22. Schumacher, R. S., D. T. Lindsey, A. B. Schumacher, J. Braun, S. D. Miller, and J. L. Demuth, 2010: Multidisciplinary analysis of an unusual tornado: Meteorology, climatology, and the communication and interpretation of warnings. *Weather and Forecasting*, 25, 1412-1429.
23. Demuth, J. L., B. H. Morrow, and J. K. Lazo, 2009: Weather forecast uncertainty information: An exploratory study with broadcast meteorologists. *Bulletin of the American Meteorological Society*, 90, 1614-1618.
24. Lazo, J. K., R. E. Morss, and J. L. Demuth, 2009: 300 billion served: Sources, perceptions, uses, and values of weather forecasts. *Bulletin of the American Meteorological Society*, 90, 785-798.
25. Morss, R.E., J.L. Demuth, and J.K. Lazo, 2008: Communicating uncertainty in weather forecasts: A survey of the U.S. public. *Weather and Forecasting*, 23, 974-991.
26. Demuth, J. L., E. Grunfest, R. E. Morss, S. Drobot, J. K. Lazo, 2007: Weather and Society * Integrated Studies (WAS*IS): Building a community for integrating meteorology and social science. *Bulletin of the American Meteorological Society*, 88, 1729-1737.
27. Demuth, J. L., M. DeMaria, and J. A. Knaff, 2006: Improvement of Advanced Microwave Sounding Unit tropical cyclone intensity and size estimation algorithms. *Journal of Applied Meteorology and Climatology*, 45, 1573-1581.
28. Demuth, J. L., M. DeMaria, J. A. Knaff, and T. H. Vonder Haar, 2004: Evaluation of Advanced Microwave Sounding Unit tropical-cyclone intensity and size estimation algorithms. *Journal of Applied Meteorology and Climatology*, 43, 282-296.
29. Knaff, J. A., S. A. Seseske, M. DeMaria, and J. L. Demuth, 2004: On the influences of vertical wind shear on symmetric tropical cyclone structure derived from AMSU. *Monthly Weather Review*, 132, 2503-2510.

Refereed Reports and Conference Publications

1. (As a committee member and co-author) National Academies of Sciences, Engineering, and Medicine, 2018: Integrating Social and Behavioral Sciences within the Weather Enterprise. National Academy Press, Washington, DC, 198 pp.
2. Anderson, J., M. Kogan, M. Bica, L. Palen, K. Anderson, R. Morss, J. Demuth, H. Lazrus, O. Wilhelmi, and J. Henderson: Far far away in Far Rockaway: Responses to risks and impacts during Hurricane Sandy through first-person social media narratives. Proceedings of the Information Systems for Crisis Response and Management (ISCRAM) 2016 Conference.
3. Demuth, J. L., 2013: Weather risk information seeking and processing: Synthesizing the RISP model and applying it to weather risks. Association for Education in Journalism and Mass Communication (AEJMC) annual meeting, Communicating Science, Health, Environment, and Risk Division, Washington, DC.

Referred National Research Council Reports (while employed as an NRC Program Officer)

1. NRC, 2005: Improving the Scientific Foundation for Atmosphere-Land-Ocean Simulations: Report of a Workshop. Washington, DC: National Academy Press.
2. NRC, 2004: Flash Flood Forecasting Over Complex Terrain: With an Assessment of the Sulphur Mountain NEXRAD in Southern California. Washington, DC: National Academy Press.
3. NRC, 2004: Review of the U.S. CLIVAR Project Office. Washington, DC: National Academy Press.
4. NRC, 2004: Where the Weather Meets the Road: A Research Agenda for Improving Road Weather Services. Washington, DC: National Academy Press.
5. NRC, 2003: Critical Issues in Weather Modification Research. Washington, DC: National Academy Press.
6. NRC, 2003: Tracking and Predicting the Atmospheric Dispersion of Hazardous Material Releases: Implications for Homeland Security. Washington, DC: National Academy Press.
7. Demuth, J. L., 2002: Countering terrorism: Lessons learned from natural and technological disasters. Natural Disasters Roundtable Summary (February 28-March 1, 2002). Washington, DC: National Academy Press.

Non-refereed Reports and Conference Publications

1. Vallee, D., and Co-authors, 2013: The record Front Range and Eastern Colorado floods of September 11-17, 2013. Report to National Oceanic and Atmospheric Administration conducted as a National Weather Service (NWS) Service Assessment. Available online at: http://www.nws.noaa.gov/om/assessments/pdfs/14colorado_floods.pdf
2. Demuth, J. L., J. K. Lazo, and R. E. Morss, 2012: Assessing and improving the NWS point-and-click webpage forecast information. NCAR Technical Note, NCAR/TN-493+STR, 373 pp.
3. Morss, R. E., J. K. Lazo, and J. L. Demuth, 2009: Understanding the use of forecast uncertainty information in decision making: Results from a survey. Preprints, *Fourth AMS Symposium on Policy and Socioeconomic Research*, Phoenix, AZ.
4. Morrow, B. H., J. L. Demuth, and J. K. Lazo, 2008: Communicating weather forecast uncertainty: An exploratory study with broadcast meteorologists. Report to National Oceanic and Atmospheric Administration conducted in support of the AMS Ad Hoc Committee on Uncertainty in Forecasts, 28 pp.
5. Drobot, S., C. Schmidt, and J. L. Demuth, 2008: The January 5-6, 2008, California winter storm: Assessing information sources, actions, and damages. University of Colorado Hazards Center Quick Response Report QR207, 27 pp.
6. Vescio, M. and Co-authors, 2008: Service assessment: Super Tuesday tornado outbreak of February 5-6, 2008. Report to National Oceanic and Atmospheric Administration conducted as a National Weather Service (NWS) Service Assessment. Available online at: http://www.nws.noaa.gov/os/assessments/pdfs/super_tuesday.pdf
7. Demuth, J. L., R. E. Morss, and J. K. Lazo, 2007: Assessing how the U.S. public understands and uses weather forecast uncertainty information. Preprints, *16th AMS Conference on Applied Climatology*, San Antonio, TX.

Funded Research Grants

- 2019 – 2023 “Multi-scale processes impacting the predictability of severe convective weather events” (PI: G. Romine; co-PIs: J. Demuth, R. Sobash, L. Bosart, M. Weisman). Funded by NSF. [\$1,400,000]
- 2019 – 2021 “Integrating sense of place into geovisualization of hurricane storm surge” (PI. O. Wilhelmi; co-PIs: J. Demuth, H. Lazrus, B. Chamberlain, J. Gambill). Funded by NSF GSS. [\$399,583]
- 2018 – 2020 “Improving Convection-Permitting Ensemble Based Uncertainty Communication for Decision Support using the Weather Archive and Visualization Environment

- (WAVE)” (PI: J. Demuth; co-PIs: R. Morss, G. Romine, D. Nietfeld, M. Petty, J. Stewart, J. Henderson, M. Wandishin). Funded by NOAA JTTI. [\$584,420]
- 2018 – 2020 “Improving Forecaster and Partner Interpretation of Uncertainty and Confidence in Risk Information: Cool and Warm Season Tornado Threats in the Southeastern U.S.” (PI: J. Henderson; Institutional PI: J. Demuth; co-PI: J. Spinney). Funded by NOAA VORTEX-SE. [\$297,208]
- 2017 – 2018 “Enabling Effective Use of Deterministic-to-Probabilistic Precipitation Forecasts for Heavy and Extreme Events” (PI: T. Jensen; co-PIs: J. Demuth, M. Biswas, M. Klein). Funded by NOAA HMT. [\$298,213]
- 2017 – 2018 “Understanding and Enhancing Public Interpretation and Use of Probabilistic Tornado Warnings in the Southeastern United States” (PI: S. Savelli; Institutional PI: J. Demuth; co-PIs: S. Joslyn, R. Morss). Funded by NOAA VORTEX-SE. [\$299,969]
- 2017 – 2018 “Demonstration of a Rapid Update Convection-Permitting Ensemble Forecast System to Improve Hazardous Weather Prediction” (PI: G. Romine; co-PIs: D. Dowell, C. Schwartz, R. Sobash, C. Alexander, S. Benjamin; Senior Personnel: J. Demuth) Funded by NOAA HWT. [\$285,593]
- 2016 – 2019 “Improving Risk Communication and Reducing Vulnerabilities for Dynamic Tornado Threats in the Southeastern U.S.” (PI: J. Demuth; co-PIs: H. Lazrus, R. Morss, K. Anderson, L. Palen, J. Henderson). Funded by NOAA VORTEX-SE. [\$149,813]
- 2015 – 2018 “Refinement and Evaluation of Automated High-Resolution Ensemble-Based Hazard Detection Guidance Tools for Transition to NWS Operations.” (PI: S. Benjamin, Co-PIs: D. Novak, S. Weygandt, C. Alexander, I. Jankov, co-PIs: J. Demuth, G. DiMego, J. Hacker, T. Jensen). Funded by NOAA USWRP. [\$2,250,000]
- 2009 – 2012 “NWS Public Forecast and Forecast-at-a-Glance Product Improvement.” (PI: J. Lazo; co-PI: J. Demuth). Funded by NOAA OCWWS and OST. [\$185,165]
- 2008 – 2012 “Collaborative Research: Warning Decisions in Extreme Weather Events: An Integrated Multi-Method Approach.” (PI: J. Lazo, Co-PIs: R. Morss, A. Bostrom, K. Tierney; Senior Personnel: J. Demuth). Funded by NSF HSD. [\$750,000]
- 2008 – 2011 “Collaborative Research: Examining the Hurricane Warning System: Content, Channels, and Comprehension.” (PI: R. Morss; Co-PIs: J. Demuth, H. D. O’Hair, B. Morrow, J. Lazo, M. Jensen, C. Miller). Funded by NSF IMEE and DRMS. [\$400,000]

Honors and Awards

- 2013 NCAR Research Applications Lab Outstanding Publication Award, nominated for UCAR Outstanding Publication Award (for Demuth et al., 2012, “Creation and communication of hurricane risk information”)
- 2013 Student Paper Award, 3rd place, Communicating Science, Health, Environment, Risk Division (Paper title: “Weather risk information seeking and processing: Synthesizing the RISP model and applying it to weather risks”)
- 2002 Fellow, National Research Council, Christine Mirzayan Science and Technology Policy Graduate Fellowship Program, Board on Atmospheric Sciences and Climate and Disasters Roundtable, Washington, DC
- 2001 American Meteorological Society Global Change Scholarship
- 1999 – 2000 American Meteorological Society Graduate Student Fellowship
- 1999 Phi Beta Kappa Honor Society, Member Since 1999

Community Service, Educational Activities, and Professional Memberships

External Service and Leadership

- 2017 – 2020 Member, American Meteorological Society, Severe Local Storms Committee

- 2017 – 2019 Member, Alliance for Integrative Approaches to Extreme Environmental Events, Inaugural Steering Committee
- 2017 – 2018 Member, 2019 American Meteorological Society, Annual Meeting Organizing Committee (with President Roger Wakimoto)
- 2016 – 2018 Member, WMO High Impact Weather (HiWeather) Research Programme, Communication Task Group
- 2016 – 2017 Member, National Academies of Science, Engineering, and Medicine, Committee on Advancing Social and Behavioral Science Research and Application within the Weather Enterprise
- 2016 – 2017 Member, 2018 American Meteorological Society, Annual Meeting Organizing Committee (with Late President Matt Parker, Acting President Roger Wakimoto)
- 2015 – 2017 Member, VORTEX-SE (Verification of the Origins of Rotation in Tornadoes Experiment in the Southeast), Scientific Steering Committee
- 2015 – 2017 Member, American Meteorological Society, Board of Best Practices Task Team on Communicating Uncertainty for Winter Weather
- 2014 – 2018 Member, American Meteorological Society Committee on Effective Communication of Weather and Climate Information
- 2013 Member, NOAA/NWS Service Assessment Team on “The Record Front Range and Eastern Colorado Floods of September 1–17, 2013”
- 2009 – 2011 Member, National Weather Association Committee, Societal Impacts of Weather and Climate
- 2009 – 2011 Member, American Meteorological Society, Board on Enterprise Communication
- 2006 – 2011 Member, American Meteorological Society, Board on Societal Impacts
- 2007 – 2010 Member, American Meteorological Society, Ad Hoc Committee on Uncertainty in Forecasts
- 2008 Member, NOAA/NWS Service Assessment Team on “Super Tuesday Tornado Outbreak of February 5-6, 2008”

Conference Organization and Workshop Management

- 2019 Steering Committee, UCAR/NCAR Advanced Studies Program, Interdisciplinary Graduate Student Colloquium on “Quantifying and Communicating Uncertainty in High-Impact Weather Prediction”
- 2018 Conference Co-Chair, 29th Severe Local Storms Conference, American Meteorological Society
- 2016 Co-chair, VORTEX-SE (Verification of the Origins of Rotation in Tornadoes Experiment in the Southeast) Workshop Committee
- 2008 – 2012 Conference Co-chair, Fourth, Fifth, Sixth, and Seventh Symposia on Policy and Socio-Economic Research, Annual Meeting of the American Meteorological Society
- 2005 – 2009 Co-creator, Weather and Society * Integrated Studies (WAS*IS) workshop, and co-organizer of 6 WAS*IS workshops, including management of all workshop logistics and content (budget, applicant solicitation and review, agenda, guest speakers, etc.) for 4 workshops

Editorial Boards and Professional Reviews

- 2018 – 2020 Editorial Board, *Journal of International Crisis and Risk Communication Research*
- 2015 – 2019 Associate Editor, *Weather and Forecasting*
- 2019 Associate Editor, *Weather, Climate, and Society*
- 2018, 2013 Guest Editor, *Natural Hazards Review*
- Ongoing Journal article reviews for: *Bulletin of the American Meteorological Society*; *Climatic Change Letters*; *Environmental Communication*, *International Journal of Disaster Risk Research*; *Journal of International Crisis and Risk Communication Research*;

Meteorological Applications; Monthly Weather Review; Natural Hazards; Natural Hazards Review; Risk Analysis; Weather and Forecasting; Weather, Climate, and Society

Past Research proposal reviews for: NOAA JTTI, NOAA VORTEX-SE, NOAA SARP, NSF HDBE

Past Report reviews for: *National Research Council*

Supervising, Mentoring, and Student Advising

- 2018 – 2019 MA committee member and UCAR ASP graduate student fellow mentor, Zoey Rosen, Colorado State University, Department of Journalism and Media Communication
- 2018 – 2020 PhD committee member, Melissa Bica, University of Colorado, Department of Computer Science
- 2017 – 2019 PhD committee member, Samuel Childs, Colorado State University, Department of Atmospheric Science
- 2018 – present Supervisee, Dakota Smith, NCAR long-term visitor
- 2017 – 2019 Supervisee, Jamie Vickery, NCAR long-term visitor
- 2015 Science co-mentor, Sally Riccardi (Western Illinois University), meteorology undergraduate thesis research proposal
- 2012 Crystal Burghardt, NCAR/RAL Associate Scientist, data analysis for NWS Forecast-at-a-Glance research project
- 2010 Taylor Trogdon, NCAR Student Assistant, data analysis for NWS Forecast-at-a-Glance research project
- 2010 – 2011 Emily Laidlaw, NCAR/RAL Associate Scientist, transition of WAS*IS Workshop management

Teaching and Educational Outreach

- 2018 Guest lecturer, “Extreme Weather Risk Communication”, University of Utah, Department of Atmospheric Science, Professional Development Class, 6 Sept.
- 2018 Guest lecturer, “Extreme Weather Risk Communication,” Ohio State University, School of Environmental and Natural Resources, Communicating Environmental Risk Graduate Seminar, 29 March.
- 2017 Guest lecturer, “Weather Risk Communication, Perceptions, and Responses”, NOAA/NWS Science and Operations Officers (SOO) Development Course
- 2017 Discussant, Weather and Climate Societal Impacts Class, University of Nebraska-Lincoln, Department of Earth and Atmospheric Sciences
- 2016 Guest lecturer, “Weather Risk Communication, Perceptions, and Responses”, NOAA/NWS Science and Operations Officers (SOO) Development Course
- 2015 Guest lecturer, “Collaborating with Social Scientists”, NWS COMET Mesoscale Analysis and Prediction (COMAP) course
- 2014 Guest lecturer, “The Intersection of Social Sciences, Societal Impacts, and Weather”, University of Nebraska-Lincoln, Dept of Meteorology
- 2011 – 2013 Guest lecturer, presentations on weather-social science research, Meteorological Services of Canada/COMET Winter Weather Residence course
- 2013 Guest lecturer, “Weather-related Survey Design and Data Collection”, University of Colorado, Environmental Studies Program
- 2011 Guest lecturer, “The Human Side of Weather and Climate”, Colorado State University, Dept of Atmospheric Sciences
- 2010 Test designer and proctor, Colorado Northern Regional Science Olympiad, Meteorology Exam
- 2010 Guest lecturer, “Social Science, Societal Impacts, and Weather”, NWS COMET Mesoscale Analysis and Prediction (COMAP) course

2009 – 2012 Booth speaker, weather and social science, AMS Student Career Fair
2008, 2009, 2011, 2012, 2013, 2014 Guest presenter, presentations on weather-social science research
NCAR Undergraduate Leadership Workshop
2007 Guest lecturer, “Thoughts about Integrating Social Science with Weather and Climate”,
Colorado State University, Dept of Atmospheric Sciences

Professional Memberships (current)

American Meteorological Society
National Weather Association
Society for Risk Analysis

Selected Presentations

Invited External Presentations

1. (*keynote*) Demuth, J.L., “Risk, Information, and Vulnerability for Evolving Tornado Threats”, American Meteorological Society, Severe Local Storms conference, Stowe, VT, October 26, 2018.
2. Demuth, J.L., “Making forecasts better, together: NCAR-NOAA/GSD research on NWS forecasters’ hi-res ensemble interpretations, uses, and needs”, Presentation to NWS Scientific Services Division (SSD) Chiefs, Boulder, CO, June 21, 2018.
3. Demuth, J.L., “ ‘Hey @weather, I’m really getting tired of huddling my little girls in the closet’: Examining Risk Communication, Perceptions, and Responses for Evolving Tornado Threats”. NWA Severe Storms and Doppler Radar Conference, Ankeny, IA, March 24, 2018.
4. Demuth, J.L. “Risk communication, assessment, and responses to extreme weather”, University of Nebraska-Lincoln, Department of Earth and Atmospheric Sciences, Stout Seminar Series, Lincoln, NE, March 31, 2017.
5. Demuth, J.L. “Risk communication, assessment, and responses to extreme weather”, The Ohio State University, School of Environment and Natural Resources Seminar Series, Columbus, OH, April 13, 2017.
6. (*keynote*) Demuth, J. L., “Severe Convective Storms: Future Directions for Social Science Research”, AMS Severe Local Storms Conference, Portland, OR, November 7, 2016.
7. (*keynote*) Demuth, J. L. “Risk Communication for the Weather Community”, Nebraska Integrated Warning Team workshop, Kearney, NE, February 12, 2016.
8. Demuth, J. L., “A 50% Chance of an Effective Forecast”, Understanding Risk, Boulder, CO, October 23, 2015.
9. Demuth, J. L., “Improving Flash Flood Services through Risk Research: Who, What, & How”, NOAA National Water Center, Flash Flood Summit, Tuscaloosa, AL, September 9, 2014.
10. Demuth, J. L., “Societal Aspects of Severe Local Storms & Current Understanding of Populations at Risk”, AMS Annual Meeting, Special Symposium on Severe Local Storms: The Current State of the Science and Understanding Impacts, Atlanta, GA, February 5, 2014.
11. Demuth, J. L., “Assessing and Improving the NWS Point-and-Click Webpage Forecast Information”, Briefing to NWS Office of Climate, Water, and Weather Services and Office of Science and Technology, Silver Spring, MD, September 11, 2012.
12. Demuth, J. L., “The Human-Weather Intersection: Saving Lives in the Path of Destructive Tornadoes”, Congressional Briefing on Saving Lives in the Path of Destructive Tornadoes, Washington DC, March 29, 2012.
13. Demuth, J. L., “How People Perceive and Response to Weather Risks”, Michigan Severe Weather Awareness Summit Meeting, Lansing, MI, March 12, 2012.
14. Demuth, J. L., “Social Science, Societal Impacts, and Weather: Ongoing Efforts in NCAR’s Societal Impacts Program”, NWS Western Region SOO/DOH Workshop, Boulder, CO, September 14, 2010.

15. Demuth, J. L., "The Public's Perspective: Integrating Weather and Society", NWS Kansas Integrated Warning Team Workshop, Wichita, KS, September 2, 2010.
16. Demuth, J. L., "Social Science, Societal Impacts, and Weather", NWS Kansas Integrated Warning Team Workshop, Wichita, KS, September 1, 2010.
17. Demuth, J. L., J. Lazo, and D. Hilderbrand, "The Public's Assessment of the NWS Point-and-Click Forecasts", 2nd NOAA Testbed Workshop, Boulder, CO, May 5, 2010.
18. Demuth, J. L., with J. Lazo, H. Lazrus, and M. Tuttle Carr, "Further Integrating Social Science into the NWS", NWS National MIC-HIC Conference, Leesburg, VA, April 22, 2010.
19. Demuth, J. L., with D. Nietfeld, "Weather Forecast Information from the Public's Perspective", NWS Omaha WFO, Integrated Warning Team Workshop, Omaha, NE, September 15, 2009.
20. Demuth, J. L., with D. Nietfeld, "Societal Impacts of the Super Tuesday Tornado Outbreak of February 5-6, 2008", National Severe Weather Workshop, Norman, OK, March 5, 2009.
21. Demuth, J. L., with K. Barjenbruch, "Societal Aspects of the 2008 Super Tuesday Tornado Outbreak", NWS Kansas City WFO, Integrated Warning Team Workshop, Kansas City, MO, January 22, 2009.
22. Demuth, J. L., with D. Nietfeld, "What Weather Forecast Information do People Get, Want, Need, and Use?", NWS Kansas City WFO Integrated Warning Team Workshop, Kansas City, MO, January, 22, 2009.
23. Demuth, J. L., with E. Gruntfest, "Roles of Social Science Research and Weather Impacts", NWS Kansas City WFO Integrated Warning Team Workshop, Kansas City, MO, January, 22, 2009.
24. Demuth, J. L., "Pieces of the Puzzle: Exploring People's Attitudes and Behaviors for Weather Forecast Information", NWS Next Generation Warning Services Workshop, Norman, OK, December 2, 2008.
25. Demuth, J. L., with K. Barjenbruch, "Integrating Meteorology and Social Science: Societal Impacts in NWS Service Assessments", NWS Western Region SOO/DOH Workshop, Norman, OK, October 21, 2008.
26. Demuth, J. L., with M. Vescio, "Super Tuesday tornado outbreak of February 5-6, 2008", NWS Corporate Board Briefing, Silver Spring, MD, August 21, 2008.
27. Demuth, J. L., "Integrating Meteorology and Social Science: The NWS Service Assessment of the Super Tuesday Tornado Outbreak", National Research Council, Board on Atmospheric Sciences and Climate, Forum on Cutting Edge Research & Development in the Observation, Understanding, and Prediction of Severe Weather, Woods Hole, MA, June 6, 2008.

Invited External Webinars

1. Demuth, J.L., R. Morss, C. Alexander, T. Alcott, I. Jankov, D. Nietfeld, T. Jensen. "NWS Forecasters' Interpretations, Uses, and Needs re: High-Resolution Ensemble Guidance", Forecasting a Continuum of Environmental Threats (FACETs) Probability of What (POW) webinar, March 14, 2018.
2. Demuth, J. L., "NWS Forecasters' Interpretations, Uses, and Needs re: High-Resolution Ensemble Guidance", National Weather Service, Southern Region, Center Weather Service Unit, Meteorologist-in-Charge meeting, November 7, 2017.
3. Demuth, J. L., "Remarks to Committee on Future of Emergency Alerts and Warning Systems", National Academies Committee, November 1, 2016.
4. Demuth, J. L., "Improving Flash Flood Services through Risk Research", NWS Western Region Hydrology Program Managers meeting, November 18, 2014.
5. Demuth, J. L. with B. Mills and K. Galluppi, "Societal Aspects of Weather Forecast Information: Application to Marine Weather", Webinar to NWS-Environment Canada Marine Forecasting Workshop, February 13, 2014.
6. Demuth, J. L., "Societal Impacts, Social Sciences, and Weather", NWS Burlington WFO Winter Weather Seminar, December 8, 2011.

Invited Internal (NCAR-related) Presentations

1. Demuth, J.L., “Better warnings of thunderstorms and tornadoes through risk analysis research”, NCAR Journalism Summit, Boulder, CO, June 1, 2018.
2. Demuth, J. L., “Risk Communication, Assessment, and Responses to Extreme Weather”, MMM Seminar Series, Boulder, CO, February 26, 2016.
3. Demuth, J. L., R. E. Morss, A. Bostrom, J. Lazo, and H. Lazrus, “Flash Flood Risks and Warning Decisions in Boulder, CO”, RAL All-Staff Meeting, Boulder, CO, December 12, 2014.
4. Demuth, J. L., R. E. Morss, H. Lazrus, J. K. Lazo, “Communicating Weather-Related Risk for Use in Decisions, FEMA Administrator Craig Fugate visit, Boulder, CO, November 14, 2014.
5. Demuth, J. L., R. E., Morss, H. Lazrus, J. K. Lazo, “Weather Risk Communication Research: Hurricanes”, Science Discovery Day, Boulder, CO, August 21, 2013.
6. Demuth, J. L., “Public Perceptions and Responses to Weather Forecast Information”, NCAR Journalism Fellows, Boulder, CO, July 19, 2012.
7. Demuth, J. L., R. E. Morss, and J. K., Lazo, “People’s Attitudes about Weather Forecasts and Forecast Uncertainty information”, RAL ATEC Forecasters’ Training, Boulder, CO, February 24, 2009, and May 21, 2009.
8. Demuth, J. L., “Exploring Variations in People’s Sources, Perceptions, and Uses of Weather Forecast Information”, 3rd NCAR Community Workshop on GIS in Weather, Climate, and Impacts, Boulder, CO, October 28, 2008.
9. Demuth, J. L., and J. K. Lazo, “Assessing Laypeople’s Attitudes about Weather Forecasts and Forecast Uncertainty Information”, RAL Annual Retreat, Estes Park, CO, November 7-8, 2007.

Conference Presentations (last 5 years only)

1. Demuth, J.L., and Coauthors, Risk, information, and vulnerability for evolving tornado threats. American Meteorological Society annual meeting, Phoenix, AZ, 9 January 2019.
2. (*poster*) Demuth, J.L., S. Savelli, S. Joslyn, C. Qin, R. Morss, and K. Ash. “A 30% chance of a tornado?: Assessing public understanding, risk perception, and responses to probabilistic tornado warnings”, Society for Risk Analysis annual meeting, New Orleans, LA, December 3, 2018.
3. Demuth, J.L., R. Morss, C. Alexander, T. Alcott, I. Jankov, D. Nietfeld, T. Jensen. “NWS Forecasters’ Interpretations, Uses, and Needs re: High-Resolution Ensemble Guidance”, American Meteorological Society, Weather Analysis and Forecasting conference, Denver, CO, June 5, 2018.
4. (*poster*) Demuth, J.L., J. Vickery, H. Lazrus, J. Henderson, R. Morss, K. Ash, D. Smith, K. Anderson, L. Palen. “Hey @weather, I’m really getting tired of huddling my little girls in the closet”: Risk, Information, and Vulnerability for Evolving Tornado Threats (RIVETT). American Meteorological Society, Weather Analysis and Forecasting conference, Denver, CO, June 7, 2018
5. Demuth, J.L., R. Morss, C. Alexander, T. Alcott, I. Jankov, D. Nietfeld, T. Jensen. “NWS Forecasters’ Interpretations, Uses, and Needs re: High-Resolution Ensemble Guidance”, American Meteorological Society annual meeting, Austin, TX, January 9, 2018.
6. Demuth, J.L., R. Morss, C. Alexander, T. Alcott, I. Jankov, D. Nietfeld, T. Jensen. “Weather Forecasters’ Use of Ensemble-based Uncertainty Information for Communicating Risks of Extreme Weather”, Society for Risk Analysis annual meeting, Arlington, VA, December 13, 2017.
7. Demuth, J.L., R. Morss, C. Alexander, T. Alcott, I. Jankov, D. Nietfeld, T. Jensen. “NWS Forecasters’ Interpretations, Uses, and Needs re: High-Resolution Ensemble Guidance”, National Weather Association annual meeting, Garden Gove, CA, September 21, 2017.
8. Demuth, J.L., “Weather Forecasters’ Interpretations and Uses of Probabilistic Model Guidance for Communicating Risks of Extreme Weather”, Cambridge Risk and Uncertainty Conference, Cambridge, UK, June 14, 2017.

9. Demuth, J.L. R. Morss, H. Lazrus, O. Wilhelmi, L. Palen, K. Anderson, J. Anderson, M. Kogan, K. Stowe, M. Bica, J. Henderson, “Examining the dynamic ways that people evaluate and respond to evolving hurricane risks”, AMS annual meeting, Seattle, WA, January 25, 2017.
10. Demuth, J.L., R. Morss, L. Palen, K. Anderson, J. Watts, M. Barton, “Examining the dynamic ways that people evaluate and respond to evolving hurricane risks”, Society for Risk Analysis annual meeting, San Diego, CA, December 14, 2016.
11. Demuth, J. L., R. E. Morss, L. Palen, K. Anderson, J. Anderson, M. Kogan, K. Stowe, and M. Bica, “Understanding Dynamic Communication, Risk Perception, and Decisions During Hurricane Sandy Through Analysis of Twitter Data”, Society for Risk Analysis annual meeting, Arlington, VA, December 9, 2015.
12. (*poster*) Demuth, J. L., “A Valid Scale of Past Experiences for Tornado Risks”, Society for Risk Analysis annual meeting, Arlington, VA, December 7, 2015.
13. Demuth, J.L., “Developing a Valid Scale of Past Tornado Experiences”, IRCD Researchers Meeting, Boulder, CO, July 23, 2015.
14. Demuth, J. L., “Moving Beyond ‘Have You Experienced a Tornado?’: Developing a Valid Scale of Past Experiences for Tornado Risks”, AMS annual meeting, 10th Symposium on Societal Applications: Policy, Research and Practice, Phoenix, AZ, January 6, 2015.
15. Demuth, J. L., “Moving Beyond ‘Have You Experienced a Tornado?’: Developing a Valid Scale of Past Experiences for Tornado Risks”, Society for Risk Analysis annual meeting, Denver, CO, December 10, 2014.
16. Demuth, J. L., “Moving Beyond ‘Have You Experienced a Tornado?’: Developing a Valid Scale of Past Experiences for Tornado Risks”, AMS Severe Local Storms Conference, Madison, WI, November 3, 2014.
17. Demuth, J. L., “Developing a Valid Scale of Past Experiences for Tornado Risks”, World Weather Open Science Conference, Montreal, Quebec, August 18, 2014.
18. (*poster*) Demuth, J. L., Morss, R.E., Lazo, J.K., Lazrus, H., Morrow, B., “A Theoretically Guided Exploration of the Public’s Hurricane Message Perceptions and Response Behaviors”, World Weather Open Science Conference, Montreal, Quebec, August 17, 2014.
19. (*poster*) Demuth, J. L., Morss, R.E., Lazo, J.K., Lazrus, H., Morrow, B., “A Theoretically Guided Exploration of the Public’s Hurricane Message Perceptions and Response Behaviors”, AMS annual meeting, 9th Symposium on Policy and Socio-Economic Research, Atlanta, GA, February 2-3, 2014.