

MARTHA D SHULSKI

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EDUCATION

- Ph.D. *Soil Science / Climatology*, Department of Soil, Water and Climate, University of Minnesota (2002)
- M.S. *Agricultural Meteorology*, Department of Agronomy, University of Nebraska-Lincoln (1998)
- B.S. *Meteorology*, Department of Marine, Earth and Atmospheric Sciences, North Carolina State University (1996)

PROFESSIONAL EXPERIENCE

- 2016-present Director, Nebraska State Climate Office and State Climatologist
Associate Professor, School of Natural Resources, University of Nebraska-Lincoln
- 2013-2016 Director, NOAA High Plains Regional Climate Center and Associate Professor,
School of Natural Resources, University of Nebraska-Lincoln
- 2009-2013 Director, NOAA High Plains Regional Climate Center and Assistant Professor,
School of Natural Resources, University of Nebraska-Lincoln
- 2002-2009 Research Professional, Alaska Climate Research Center, Geophysical Institute,
University of Alaska Fairbanks
- 1999-2002 Graduate Research Assistant, Department of Soil, Water and Climate, University
of Minnesota
- 1999 Research Technician, High Plains Regional Climate Center, University of
Nebraska-Lincoln
- 1997-1998 Graduate Research Assistant, Climate and Bio-Atmospheric Sciences Group,
Department of Agronomy, University of Nebraska-Lincoln

GRANTS AND CONTRACTS AWARDED

- Adaptive Capacity and Resilience in the New Arctic (Co-PI)*, National Science Foundation,
\$99,864; Jan. 2018 – Dec. 2018.
- An Integrated Approach to Improved Wind Forecasting in Nebraska (PI)*, Nebraska Center for
Energy Science Research, \$69,998; Jan. 2018 – Dec. 2018.
- Nebraska Mesonet (PI)*, Nebraska Department of Natural Resources, \$75,000; Jul. 2017 – Jun.
2018.
- Risk Management Education for Livestock and Forage Producers (Co-PI)*, U.S. Department of
Agriculture, \$98,439; Sep. 2017 – Sep. 2018.
- An Integrated Approach to Improved Wind Forecasting in Nebraska (PI)*, Nebraska Center for
Energy Science Research, \$54,998; Jan. 2017 – Dec. 2017.

Nebraska Mesonet (PI), Nebraska Department of Natural Resources, \$150,000; Jul. 2016 – Jun. 2017.

Increasing the Capacity for Municipal Climate Adaptation Planning in the Lower Missouri River Basin States (PI), National Oceanic and Atmospheric Administration, \$207,842; Jul. 2016 – Jun. 2018.

Nebraska Mesonet (PI), Nebraska Department of Natural Resources, \$150,000; Jul. 2015 – Jun. 2016.

Regional Climate Services Support in the High Plains Region: The High Plains Regional Climate Center (PI), National Oceanic and Atmospheric Administration, \$393,782; Aug. 2015 – Jul. 2016.

Nebraska's Automated Weather Data Network (PI), Nebraska Department of Natural Resources, \$300,000; Jun. 2013 – Mar. 2015.

Regional Climate Services Support in the High Plains Region: The High Plains Regional Climate Center (PI), National Oceanic and Atmospheric Administration, \$1,218,274; Oct 2013 – Mar 2015.

Center for Integrated Earth Observation and Modeling (CIEOM): Needs, Strategic Plans, and Funding Outlooks (Co-PI with 7 collaborators), UNL, \$10,000; Sep. 2013 – Aug. 2014.

Regional Climate Services Support in the High Plains Region: The High Plains Regional Climate Center (PI), National Oceanic and Atmospheric Administration, \$260,057; May 2013 – Sep. 2013.

Regional Climate Services Support in the High Plains Region: The High Plains Regional Climate Center (PI), National Oceanic and Atmospheric Administration, \$52,011; Apr. 2013.

Soybean Producer Use of Soywater – Upgrading HPRCC Resources to Meet the Growing Demand (Co-PI with 1 collaborator), Nebraska Soybean Board, \$6,000; Apr. 2013 – Sep. 2013.

Developing “CornSoyWater” – A Web-based Irrigation Decision Aid for Corn and Soybeans in Nebraska (Co-PI with 10 collaborators), \$122,000; Jan. 2013 – Dec. 2014.

Enhancing Decision Support for Drought Risk in the United States: The Drought Risk Atlas (Co-PI with 3 collaborators), National Oceanic and Atmospheric Administration, \$273,822; Aug. 2012 – Jul. 2014.

Central Great Plains Climate Change Education Partnership Supplemental Proposal (Co-PI with 6 collaborators), National Science Foundation, \$211,985; Jun. 2011 – May 2012.

Useful to Usable (U2U): Transforming Climate Variability and Change Information for Cereal Crop Producers (Co-PI with 21 collaborators), U.S. Department of Agriculture, Agriculture and Food Research Initiative, \$5,000,000; Jan. 2011 – Dec. 2015.

Regional Climate Services Support in the High Plains Region: The High Plains Regional Climate Center (PI), National Oceanic and Atmospheric Administration, \$1,286,475; Jul. 2010 – Mar. 2013.

Educational Outreach in Nebraska Through Weather Camp (PI), National Oceanic and Atmospheric Administration, \$4,300; Jul. 2010 – May 2011.

Beaufort and Chukchi Sea Mesoscale Meteorology Model Study (Co-PI with 6 collaborators), Minerals Management Service, U.S. Department of the Interior, \$1,400,000; Jan. 2009 – Mar. 2013.

Beaufort Sea Mesoscale Meteorology Model Study (Co-PI with 5 collaborators), Minerals Management Service, U.S. Department of the Interior, \$340,000; Sept. 2006 – Aug. 2008.

Quality Assurance of Weather Data and the Probability of Favorable Weather for Prescribed Fire in Alaska (Co-PI with 2 collaborators), Joint Fire Sciences Program, U.S. Forest Service \$75,000; Aug. 2005 – Jul. 2007.

- Climate change in the Koyukuk and Yukon Flats Regions of Alaska (Co-PI with 2 collaborators),* Alaska Fish and Wildlife Service and University of Alaska Fairbanks, \$5,000; Jan. – Aug. 2006.
- Climate of the Coastal Zone of the Alaskan North Slope (PI),* British Petroleum Corporation, \$10,000; Jan. – Mar. 2005.
- Implementation of Climatological Summaries for Snow Fence Design Training and Web Site Development (PI),* Minnesota Department of Transportation, \$17,200; Jun. 2001 – May 2002.

PUBLICATIONS

Peer-Reviewed Articles and Reports

2017

1. Wang, T., T.E. Franz, R. Li, J. You, **M.D. Shulski**, C. Ray, 2017. *Evaluating Climate and Soil Effects on Regional Soil Moisture Spatial Variability Using EOFs*. *Water Resources Research*, 53, 4022-4035, doi:10.1002/2017WR020642.
2. Wang T., T.E. Franz, J. You, **M.D. Shulski**, C. Ray, 2017. *Evaluating Controls of Soil Properties and Climatic Conditions on the Use of an Exponential Filter for Converting Near Surface to Root Zone Soil Moisture Contents*, *Journal of Hydrology*, 548, 683-696, doi:10.1016/2017.03.055.
3. Aegerter C., J. Wang, C. Ge, S. Irmak, R. Oblesby, B. Wardlow, H. Yang, J. You, **M.D. Shulski**, 2017, *Mesoscale Modeling of the Meteorological Impacts of Irrigation During the 2012 Central Plains Drought*, *Journal of Applied Meteorology and Climatology*, 56, 1259-1283, doi:10.1175/JAMC-D-16-0292.1.
4. Wilhite D.A., K.C. Morrow, **M.D. Shulski**, 2017. *Changes in Arctic Climate and Central U.S. Weather Patterns: Is There a Link?*, *Bulletin of the American Meteorological Society*, doi: 10.1175/BAMS-D-16-0110.

2016

5. Zhang J., F. Liu, W. Tao, J. Krieger, **M.D. Shulski**, X. Zhang, 2016. *Mesoscale Climatology and Variation of Surface Winds over the Chukchi-Beaufort Coastal Areas*, *Journal of Climate*, 29, 2721-2739.
6. Wang T., T.E. Franz, W. Yue, J. Szilagyi, V.A. Zlotnik, J. You, X. Chen, **M.D. Shulski**, A. Young, 2016. *Feasibility analysis of using inverse modeling for estimating natural groundwater recharge from a large-scale soil moisture monitoring network*, *Journal of Hydrology*, 533, 250-265.
7. Wang J., A.L. Kessner, C. Aegerter, A. Sharma, L. Judd, B. Wardlow, J. You, **M.D. Shulski**, S. Irmak, A. Kilic, J. Zeng, 2016. *A multi-sensor view of the 2012 central Plains drought from space*, *Frontiers in Environmental Science*, 10.3389/fenvs.2016.00045.

2015

8. Boustead B.E.M., S. Hilberg, **M.D. Shulski**, and K.G. Hubbard, 2015. *The Accumulated Winter Season Severity Index (AWSI)*, *Journal of Applied Meteorology and Climatology*, 54, 1693-1712.
9. **Shulski, M.D.**, W. Baule, C. Stiles, and N.A. Umphlett, 2015. *Investigation of Nebraska's variable and changing climate: A Historical Perspective*. *Great Plains Research*, 25 (2) 109-120.
10. Prokopy L.S., C.E. Hart, R. Massey, M. Widhalm, J. Andresen, J. Angel, T. Blewett, O.C. Doering, R. Elmore, B.M. Gramig, P. Guinan, B.L. Hall, A. Jain, C.L. Knutson, M.C. Lemos, L.W. Morton, D. Niyogi, R. Power, **M.D. Shulski**, C. X. Song, E.S. Takle, and D. Today, 2015.

Improving team communication for enhanced delivery of agro-climate decision support tools. Agricultural Systems, 138, 31-37.

11. Dai, S., **M.D. Shulski**, K.G. Hubbard, and E.S. Takle, 2015. *A spatiotemporal analysis of Midwest US temperature and precipitation trends during the growing season from 1980 to 2013.* International Journal of Climatology, 10.1002/joc.4354.
12. Wang, T., T.E. Franz, V.A. Zlotnik, J. You, and **M.D. Shulski**, 2015. *Investigating soil controls on soil moisture spatial variability: Numerical simulations and field observations.* Journal of Hydrology, 525, 576-586.

2014

13. Baule W., and **M.D. Shulski**, 2014. *Climatology and trends of wind speed in the Beaufort/Chukchi Sea coastal region from 1979 – 2009.* International Journal of Climatology, 34(8), 2819-2833.
14. Coop, A.J., K.G. Hubbard, **M.D. Shulski**, J. You, and D.B. Marx, 2014. *Spatial accuracy of climate networks: A case study in Nebraska.* Journal of Applied Meteorology and Climatology, 53(8), 1932-1942.
15. Takle E.S., C.J. Anderson, J. Andresen, J. Angel, R. Elmore, B.M. Gramig, P. Guinan, S. Hilberg, D. Kluck, R. Massey, D. Niyogi, J. Schneider, **M. Shulski**, D. Today, and M. Widhalm, 2014. *Climate forecasts for corn producer decision-making.* Earth Interactions, 18 (5), 1-8.
16. **Shulski M.**, J. You, J. Krieger, W. Baule, J. Zhang, X. Zhang, and W. Horowitz, 2014. *Quality assessment of meteorological data for the Beaufort and Chukchi Sea coastal region using automated routines.* Arctic, 67(1), 104-112.

2013

17. **Shulski M.**, N. Umphlett, K. Hubbard, and T. Pathak, 2013. *Climate Change – What does it mean for Nebraska?*, Institute of Agriculture and Natural Resources NebGuide, G2208.
18. Zhang, X., J. Zhang, J. Krieger, **M. Shulski**, F. Liu, S. Stegall, W. Tao, J. You, W. Baule, and B. Potter, 2013. *Beaufort and Chukchi Seas mesoscale meteorology modeling study, Final Report*, U.S. Department of the Interior, Bureau of Ocean Energy Management, Alaska OCS Region, Anchorage, AK. OCS Study BOEM 2013-0119. 203 pp.
19. Kunkel K.E., L.E. Stevens, S.E. Stevens, L. Sun, E. Janssen, D. Wuebbles, M.C. Kruk, D.P. Thomas, **M. Shulski**, N.A. Umphlett, K.G. Hubbard, K. Robbins, L. Romolo, A. Akyuz, T. Pathak, T.R. Bergantino, and J.G. Dobson, 2013. *Regional Climate Trends and Scenarios for the U.S. National Climate Assessment, Part 4: Climate of the U.S. Great Plains.* NOAA Technical Report, NESDIS 142-4.

2012

20. Pathak T., K. Hubbard and **M. Shulski**, 2012. *Soil Temperature: A guide for planting agronomic and horticulture crops in Nebraska.* Institute of Agriculture and Natural Resources NebGuide, vol. g2122.
21. Saito K., S. Yamaguchi, H. Iwata, Y. Harazono, K. Kosugi, M. Lehning, **M. Shulski**, 2012. *Climatic physical snowpack properties for large-scale modeling examined by observations and a physical model.* Polar Science, 6(1), 79-95.
22. Bieniek P.A., U.S. Bhatt, R.L. Thoman, H. Angeloff, J. Partain, J. Papineau, F. Fritsch, E. Holloway, J.E. Walsh, C. Daly, **M. Shulski**, G. Hufford, D.F. Hill, S. Calos, R. Gens, 2012. *Climate divisions for Alaska based on objective methods*, Journal of Climate, 51(7), 1276-1289.

2011

23. Klein D. and **M. Shulski**, 2011. *Reindeer and lichens incompatible in a Bering Sea island ecosystem.* Arctic, 64 (3), 353-361.
24. McNeeley S. and **M. Shulski**, 2011. *Anatomy of a closing window: Vulnerability to changing*

seasonality in Interior Alaska. Global Environmental Change, doi:10.1016/j.gloenvcha.2011.02.2003.

25. Wendler G., J. Conner, B. Moore, **M. Shulski**, and M. Stuefer, 2011. *Climatology of Alaskan wildfires with special emphasis on the extreme year of 2004*. Theoretical and Applied Climatology, 104, 459-472.

2010

26. DeGaetano A.T., T.J. Brown, S.D. Hilberg, K. Redmond, K. Robbins, P. Robinson, **M. Shulski**, and M. McGuirk, 2010. *Towards regional climate services: The role of NOAA's Regional Climate Centers*. Bulletin of the American Meteorological Society, 91, 1633-1644.
27. Wendler G., **M. Shulski**, and B. Moore, 2010. *Changes in the climate of the Alaskan North Slope and the ice concentration of the adjacent Beaufort Sea*. Theoretical and Applied Climatology, 99, 67-74.

2009

28. **Shulski M.**, J. Walsh, E. Stevens, and R. Thoman, 2009. *Diagnosis of extended cold season temperature anomalies in Alaska*. Monthly Weather Review, 138 (2), 453-462.
29. **Shulski M.**, and H. M. Mogil. 2009. *Alaska's weather and climate*, Weatherwise, Jan/Feb 2009, 14-21.
30. Wendler G., and **M. Shulski**, 2009. *A century of climate change for Fairbanks, Alaska*. Arctic, 62 (3): 295-300.
31. Klein, D., and **M. Shulski**. 2009. *Lichen recovery following heavy grazing by reindeer delayed by climate warming*, Ambio, 38, 11-16.
32. Klein, D., J. Walsh, and **M. Shulski**, 2009. *What killed the reindeer of St. Matthew Island?*, Weatherwise, Nov/Dec 2009, 33-38.

2002 – 2006

33. Damoah R., N. Spichtinger, R. Servranckx, M. Fromm, E. Eloranta, I. Razenkov, P. James, **M. Shulski**, C. Forster, and A. Stohl, 2006. *Transport modeling of a pyro-convection event in Alaska*. Atmospheric Chemistry and Physics, 6,173-185.
34. Wendler G., **M.D. Shulski**, and B. Hartmann, 2005. *Potential climatic effects of cirrus contrails for the subarctic setting of Fairbanks, Alaska*. Theoretical and Applied Climatology, 81,149-159.
35. Wendler G., B. Hartmann, C. Wyatt, **M.D. Shulski**, and H. Stone, 2005. *Midsummer energy balance for the ice covered southern seas*, Boundary Layer Meteorology, 117,131-148.
36. Fan X., J.-F. Chou, B.-R. Guo, and **M.D. Shulski**, 2004. *A coupled simple climate model and its global analysis*. Theoretical and Applied Climatology, 79, 31-43.
37. **Shulski M.D.**, and M.W. Seeley, 2004. *Application of snowfall and wind statistics to snow transport modeling for snowdrift control in Minnesota*. Journal of Applied Meteorology, 43, 1711-1721.
38. **Shulski M.D.**, E.A. Walter-Shea, K.G. Hubbard, G.Y. Yuen, and G. Horst, 2004. *Penetration of photosynthetically active and ultraviolet radiation into alfalfa and tall fescue canopies*. Journal of Agronomy, 96, 1562-1571.
39. Yuen G.Y., C.C. Jochum, L.J. Giesler, **M.D. Shulski**, E.A. Walter-Shea, and K.G. Hubbard. 2002, *UV-B biosimetry in turfgrass canopies*. Crop Science, 42, 859-868.

Books

1. Hubbard, K., J. You, and **M. Shulski**. 2012. *Toward a Better Quality Control of Weather Data*. In, *Recent Research in Quality Control*, INTECH, Shanghai, China, pp. 1 – 29.
2. **Shulski, M.** and G. Wendler. 2007. *The Climate of Alaska*, University of Alaska Press, Fairbanks, AK, 216 pp.

Popular Literature

1. **Shulski, M.**, and H.M. Mogil. 2009. Alaska's weather and climate, *Weatherwise*, Jan/Feb 14-21.
2. Klein, D., J. Walsh, and **M. Shulski**, 2009. What killed the reindeer of St Matthew Island?, *Weatherwise*, Nov/Dec 33-38.

PRESENTATIONS

Invited Speaker

1. *The Nebraska Mesonet*, NOAA National Weather Service Integrated Warning Team Workshop, Lincoln, NE, November, 2017.
2. *Responding to a Changing Climate in Nebraska*, IANR Growing Nebraska Summit, Lincoln, NE, November, 2017.
3. *Impacts of Climate Change in Nebraska*, UNL Sustainability Summit, Lincoln, NE, September, 2017.
4. *Climate Change in Nebraska*, Cover Crops Session, International Water for Food Conference, Lincoln, NE, April, 2017.
5. *Regional Climate Change*, Environmental Protection Agency Region 7 Creating Resilient Water Utilities Workshop, Lenexa, KS, April, 2017.
6. *The Nebraska State Climate Office*, Nebraska Extension In-Service, Mead, NE, March, 2017.
7. *Global Climate Change*, University of Nebraska – Lincoln Humanities Symposium, Lincoln, NE, February, 2017.
8. *Climate Change in Nebraska*, Weather and Climate Resources for Farm Management, Ord, NE, February, 2017.
9. *Climate 101*, Integrating Weather and Climate Information into Management Decisions, Lincoln, NE, January, 2017.
10. *Nebraska Weather and Climate Resources*, Nebraska Extension Crop Production Clinic, Gering, Kearney and North Platte, NE, January, 2017.
11. *An Introduction to Climate Change*, Nebraska Corn Board and Corn Growers Association Board Meeting, Lincoln, NE, January, 2017.
12. *Nebraska's Historical Climate*, Nebraska Conservation Summit, Omaha, NE, December 2016.
13. *The American Association of State Climatologists*, Regional Climate Services Workshop, Lincoln, NE, September 2016.
14. *Our Changing Climate*, Sac and Fox Nation Environmental Department's 3rd Annual Campfire Talk, Reserve, KS, September 2016.
15. *Central Plains Climate – Past, Present, and Future*, High Plains American Meteorological Society Annual Conference, North Platte, NE, August 2016.
16. *The Nebraska Mesonet*, Upper Elkhorn Natural Resource District Board Meeting, O'Neill, NE, July 2016.
17. *The Nebraska State Climate Office*, Agriculture Builders of Nebraska Meeting, Lincoln, NE, July 2016.
18. *The Nebraska State Climate Office*, Climate Change Seminar for Elected Officials in Nebraska, Lincoln, NE, June 2016.
19. *The Nebraska Mesonet*, Central Platte Natural Resource District Board Meeting, Grand Island, NE, April 2016.
20. *Useful to Usable Climate Decision Support Tools*, Regional Climate Partners Workshop, Brookings, SD and Casper, WY, March 2016.
21. *Climate Change in the North Central U.S. and Implications for Urban Areas*, North Central

- Reginal Water Network Workshop, Lincoln, NE, March 2016.
22. *Climate Resources for Agricultural Decisions*, USDA Nebraska No-Till Conference, Holdrege, NE, February 2016.
 23. *Climate Change in Nebraska and Implications for Urban Pests*, Nebraska Urban Pest Management Conference, Lincoln, NE, February 2016.
 24. *The High Plains Regional Climate Center*, USGS Field Office, Lincoln, NE, January 2015
 25. *Climate Services in Nebraska and the High Plains Region*, Federal Executives Association Luncheon, Lincoln, NE, December 2014.
 26. *Climate Resources at the High Plains Regional Climate Center*, Drought Resiliency for Kansas Tribal Nations Workshop, Kansas City, MO, November 2014.
 27. *Climate Resources at the High Plains Regional Climate Center*, Heartland Regional Climate Adaptation Network, Iowa City, IA, November 2014.
 28. *Weather Variability in the Northern Great Plains*, Northern Plains Resources Conservation Act Regional Roundtable, Rapid City, SD, September 2014.
 29. *Products and Services at the High Plains Regional Climate Center*, Wind River Indian Reservation Workshop, Lincoln, NE, August 2014.
 30. *Climate Variability in the Great Plains – Implications for the Future*, Forum for Sustainable Water Management, Lincoln, NE, August 2014.
 31. *Implications of Climate Change on State and Local Governments*, Great Plains Government Finance Officers Association Spring Meeting, Omaha, NE, May 2013.
 32. *Midwest and Great Plains Drought Webinar*, National Oceanic and Atmospheric Administration Central Region Webinar Series, May 2013.
 33. *Climate Issues in the Missouri River Basin*, Workshop on Planning and Response to Extreme Weather Events and Climate Change, Olathe, KS, February 2013.
 34. *Nebraska Legislative Bill 583 Testimony* (Amendment to the state’s Climate Assessment Response Committee), Nebraska Agricultural Committee for the Unicameral Legislature, Lincoln, NE, February 2013.
 35. *Climate Services Overview*, Sustainable Agriculture in a Changing Climate: North Central Region Professional Development Program Workshop, Nebraska City, NE, February 2013.
 36. *Drought of 2012*, Nebraska Department of Environmental Quality Seminar Series, Lincoln, NE, January 2013.
 37. *Development and Analysis of the Beaufort and Chukchi Coastal Region Meteorological Database*, Alaska Marine Science Symposium, Beaufort/Chukchi Meteorology Workshop, Anchorage, AK, January 2013.
 38. *Drought 2013 Forecast*, University of Nebraska Briefing to State Legislators, Lincoln, NE, November 2012.
 39. *Drought of 2012*, Tri-County Urban Area Security Initiative: Critical Infrastructure and Key Resources Subcommittee, Omaha, NE, September 2012.
 40. *Climate Issues of the Great Plains*, Kansas State University EPSCoR Climate Change and Mitigation Annual Research Symposium, August 2012.
 41. *Climate Services and Research at the High Plains Regional Climate Center*, Heartland Climate Change Conference: Agricultural Decision Making with a Water and Climate Change Perspective, Nebraska City, NE, November 2011.
 42. *Climate and Water Issues in the Missouri River Basin*, University Industry Consortium Annual Meeting, Lincoln, NE, October 2011.
 43. *Services at the High Plains Regional Climate Center*, Oglala Sioux Climate Meeting, Kansas City, MO, September 2011.
 44. *Climate Change and Agriculture*, Kansas Wheat Board, Manhattan, KS, March 2011.

45. *Activities of the High Plains Regional Climate Center*, Missouri River Basin Climate Collaboration Team Meeting, Nebraska City, NE, March 2011.
46. *Impacts of a Changing Climate on the Alaskan Landscape and Beyond*, School of Natural Resources Geography Seminar, Lincoln, NE, February 2011.
47. *Activities of the High Plains Regional Climate Center*, Panhandle Research and Extension Center Meeting, Scottsbluff, NE, November 2010.
48. *Agricultural Climatology and the UNL School of Natural Resources*, University of Zagreb (Croatia) Agronomy Faculty Seminar, Zagreb, Croatia, October 2010.
49. *Life in the Last Frontier: Impacts of a changing climate on the Alaskan landscape and beyond*, Oescher Lifelong Learning Seminar, Lincoln, NE, October 2010.
50. *The High Plains Regional Climate Center*, Tribal College Faculty Training Session, Boulder, CO, August 2010.
51. *The High Plains Regional Climate Center and Tribal Opportunities*, American Indian Alaska Native Climate Change Working Group Meeting, Kansas City, MO, June 2010.
52. *The High Plains Regional Climate Center*, UNL Department of Agronomy and Horticulture Seminar, Lincoln, NE, April 2010.
53. *Activities of the High Plains Regional Climate Center*, American Meteorological Society Annual Meeting, Atlanta, GA, January 2010.
54. *Life in the Last Frontier: Impacts of a changing climate on the Alaskan landscape and beyond*, School of Natural Resources Outreach Seminar, Lincoln, NE, October 2009.
55. *The Climate of Alaska*, Alaska Weather Symposium, University of Alaska, Fairbanks, AK, March 2009. (Keynote)
56. *Weather Extremes and Population Extinction in the Bering Sea*, First International Symposium on Arctic Research (ISAR-1), Tokyo, Japan, November 2008.
57. *Observed Climate Change in Northern Alaska*, Wildlife Response to Environmental Arctic Change (WildREACH), Fairbanks, AK, November 2008.

Conference Presentations (*Underline indicates graduate student)

1. **Shulski, M.**, N. Umphlett, Z. Tang, T. Abdel-Monem, F. Uhlarik, *Localizing Climate Information for Municipal Planning in the Central U.S.*, Poster presentation at the American Geophysical Union Annual Meeting, New Orleans, LA, December 2017.
2. **Shulski, M.**, N. Umphlett, Z. Tang, T. Abdel-Monem, F. Uhlarik, *Informing Decisions and Increasing Resilience – Working with municipal planners in the lower Missouri River Basin*, Oral presentation at the 23rd Conference on Applied Climatology, Asheville, NC, June 2017.
3. **Shulski, M.**, S. McNeeley, G. Collins, C. Knutson, M. Svoboda, D. Kluck. *Capacity Building for Tribal Communities: An example of a community-led social-ecological-climate partnership in the Northern Plains*, Oral presentation at the Annual American Meteorological Society Meeting, Phoenix, AZ, January 2015.
4. **Shulski, M.**, N. Umphlett, J. Lahowetz, W. Baule, and W. Sorensen. *Climate Impact Reporter - A New Tool to Archive and Display Impacts to Extreme Climate Events*, Poster presentation at the Nebraska Water Symposium, Lincoln, NE, October 2013.
5. Umphlett, N., J. Lahowetz, **M. Shulski**, W. Sorensen, and W. Baule. *The Climate Impact Reporter*, Oral presentation at the American Association of State Climatologists Annual Meeting, St. Louis, MO, July 2013.
6. Umphlett, N., J. Lahowetz, **M. Shulski**, W. Sorensen, and W. Baule. *Climate Impact Reporter: A new tool for archiving and displaying climate-related impacts to extreme events*. Poster presentation at the Climate Prediction Application Science Workshop, Logan, UT, April 2013.
7. **Shulski, M.**, W. Baule, J. Krieger, J. You, J. Zhang, X. Zhang, and W. Horowitz. *Development*

- and Analysis of a New Meteorological Database for the Beaufort and Chukchi Seas Coastal Regions*, Poster presentation at the Alaska Marine Science Symposium, Anchorage, AK, January 2013.
8. Krieger, J., J. Zhang, F. Liu, **M. Shulski**, W. Tao, and X. Zhang. *Chukchi/Beaufort High-resolution Atmospheric Reanalysis (CBHAR)*, Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2012.
 9. Umphlett, N., N. Wall, T. Haigh, Z. Tang, M. Hayes, and **M. Shulski**. *Climate-related Risk and a Resilient Rural Future: An exploration of linkages and the role of the High Plains Regional Climate Center and the National Drought Mitigation Center*, Oral presentation at the Rural Futures Conference, Lincoln, NE, May 2012.
 10. Zhang, X., J. Zhang, J. Krieger, F. Liu, W. Tao, and **M. Shulski**. *Toward Producing a High-Resolution Regional Reanalysis for Arctic Marginal Ice Zone along Alaska Coast*, Poster presentation at the 4th World Climate Research Programme International Conference On Reanalysis, Silver Spring, MD, May 2012.
 11. Umphlett, N., and **M. Shulski**. *Stakeholder Engagement in the U.S. Central Region for Improving Regional Climate Services and Climate Change Education*, Poster presentation at the American Meteorological Society Annual Meeting, New Orleans, LA, January 2012.
 12. Krieger, J., J. Zhang, F. Liu, **M. Shulski**, and X. Zhang. *Toward Producing a Beaufort/Chukchi Seas Regional Reanalysis*. Poster presentation at the 16th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS) in New Orleans, LA, January 2012.
 13. Krieger, J., J. Zhang, **M. Shulski**, F. Liu, W. Tao, and X. Zhang. *Toward Producing a Beaufort/Chukchi Seas Regional Reanalysis*. Poster presentation at the Alaska Marine Science Symposium, Anchorage, AK, January 2012.
 14. Baule, W. and **M. Shulski**. *A comparison of the warm-season wind regimes of the Beaufort/Chukchi Seas Coasts using observations and the North American Regional Reanalysis*. Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.
 15. Potter, B., J. Lenters, K. Hinkel, **M. Shulski**, N. Healey, A. Irmak, S. Jones, and Y. Sheng. *The Summertime Energy Balance of a Thermokarst Lake in Northern Alaska: A Three-Year Study of Seasonal and Interannual Variability*. Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2011.
 16. Liu, F., J. Krieger, J. Zhang, **M. Shulski**, and X. Zhang. *Evaluation of the Surface Layer Scheme in WRFDA*. Poster presentation at the 12th WRF Users' Workshop, Boulder, CO, June 2011.
 17. Boustead, B., S. Hilberg, **M. Shulski**, and K. Hubbard. *An Accumulated Winter Season Severity Index (AWSSI)*. Oral presentation at the 19th Conference on Applied Climatology, Asheville, NC, June 2011.
 18. Prokopy, L.S., J. Andresen, D. Niyogi, **M. Shulski**, and D. Todey. *Useful to Usable (U2U): Transforming Climate Variability and Change Information for Cereal Crop Producers*. Poster presentation at the American Meteorological Society 19th Conference on Applied Climatology, Asheville, NC, June 2011.
 19. Krieger, J., J. Zhang, **M. Shulski**, F. Liu, and X. Zhang. *Beaufort/Chukchi Seas Mesoscale Meteorology Modeling Study*. Poster presentation at the 11th Conference on Polar Meteorology and Oceanography, Boston, MA, May 2011.
 20. Pathak, T., K. Hubbard, and **M. Shulski**. *Soil Temperature: Indicator of earlier shifts and a guide for planting agricultural and horticulture crops*. Poster presentation at the Climate Information for Managing Risks International Symposium, Orlando, FL, May 2011.
 21. **Shulski, M.**, N. Umphlett, and S. Hilberg. *Assessing Climate Information Needs in the*

- Agricultural Community: A look at the Central US.* Oral presentation at the NOAA Climate Prediction Application Science Workshop, Des Moines, IA, March 2011.
22. Umphlett, N., and **M. Shulski**. *High Plains Regional Climate Center: Increasing the awareness of climate issues through stakeholder engagement and public outreach events.* Poster presentation at the American Meteorological Society Annual Meeting, Seattle, WA, January 2011.
 23. Zhang, J., J. Krieger, **M. Shulski**, F. Liu, S. Stegall, J. Gonowon, X. Zhang, and D. Atkinson. *Chukchi/Beaufort Seas Meteorology Study: Mesoscale and Climatological Aspects.* Poster presentation at the Alaska Marine Science Symposium, Anchorage, AK, January 2010.
 24. **Shulski, M.**, K. Hubbard, and J. You. *Development of an Irrigation Scheduling Tool for the High Plains Region*, Poster presentation at the American Geophysical Union Fall Conference, San Francisco, CA, December 2009.
 25. Krieger, J., J. Zhang, **M. Shulski**, and X. Zhang. *Coupling a Thermodynamic Sea Ice Model with WRF.* Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2009.
 26. Walsh, J., K. Klein, and **M. Shulski**. *Extreme Winter Cyclones and the Extinction of a Reindeer Population.* Oral presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2009 (invited).
 27. Zhang, J., U. Bhatt, J. Krieger, **M. Shulski**, X. Zhang, and D. Atkinson. *Regional Climate Change Downscaling for Alaska.* Poster presentation at the American Geophysical Union Fall Meeting, San Francisco, CA, December 2009.
 28. Zhang, J., J. Krieger, **M. Shulski**, and X. Zhang. *Beaufort Sea Coastal Wind Regime Study from Observations and Model Simulations.* Poster presentation at the 10th Conference on Polar Meteorology and Oceanography, Madison, WI, May 2009.
 29. Zhang, J., J. Krieger, **M. Shulski**, X. Fan, and D. Morton. *Chukchi/Beaufort Seas Surface Wind Field Study*, Oral presentation at the Alaska Weather Symposium, Fairbanks, AK, March 2009.
 30. Krieger, J., J. Zhang, D. Atkinson, X. Zhang, and **M. Shulski**, 2009. *Sensitivity of WRF Model Forecasts to Different Physical Parameterizations in the Beaufort Sea Region.* Poster presentation at the 8th Conference on Coastal Atmospheric and Oceanic Prediction and Processes, Phoenix, AK, January 2009.
 31. Zhang, J., J. Krieger, **M. Shulski**, and X. Zhang. *Beaufort Sea Coastal Wind Regime Study From Observations and Model Simulations.* Poster presentation at the American Geophysical Union Fall Conference, San Francisco, CA, December 2008.
 32. Klene, A., **M. Shulski**, X. Fan, J. Krieger, D. Morton, and J. Zhang. *The Influence of the Brooks Range on the Wind Regime of the Beaufort Sea Coast.* Oral presentation at the Association of American Geographers 104th Annual Meeting, Boston, MA, April 2008.
 33. **Shulski, M.**, A. Klene, J. Zhang, X. Fan, J. Krieger, and D. Morton. *The influence of Sea Ice and Topography on the Wind Regime of the Beaufort Sea Coast.* Poster presentation at the American Geophysical Union Fall Conference, San Francisco, CA, December 2007.
 34. Fan, X., J. Zhang, J. Krieger, D. Morton, **M. Shulski**, A. Klene, and X. Zhang. *Assimilating QuikSCAT SeaWinds with WRF Model for High Latitude Sea Breeze simulation*, Poster presentation at the American Geophysical Union Fall Conference, San Francisco, CA, December 2007.
 35. Wendler, G., and **M. Shulski**. *Climate Change in Alaska.* Poster presentation at the Arctic Science Conference, Anchorage, AK, September 2007.
 36. Morton, D., J. Krieger, X. Fan, **M. Shulski**, J. Zhang, and A. Klene. *A Study of The Effects of Data Assimilation on Mesoscale Meteorological Modeling in the Beaufort Sea Region.* Oral

- presentation at the 7th Conference on Coastal Atmospheric and Oceanic Prediction and Processes. San Diego, CA, September 2007.
37. Krieger, J., J. Zhang, X. Fan, D. Morton, A. Klene, and **M. Shulski**. *Modeling the Beaufort Sea coastal wind regime using MM5 and WRF*. Poster presentation at the 9th Conference on Polar Meteorology and Oceanography, St. John's, Newfoundland, Canada, May 2007.
 38. A. Klene, D.J. Morton, J. Zhang, X. Fan, J.R. Krieger, and **M. Shulski**. Initial Evaluation of Real-time Weather Forecasts for the Beaufort Sea Region, Alaska. Poster presentation at the Association of American Geographers 103rd Annual Meeting, San Francisco, CA, April 2007.
 39. Fan, X., J. Krieger, D. Morton, J. Zhang, **M. Shulski**, and A. Klene. *Simulating Beaufort Sea Coastal Wind Events Using MM5 and WRF*. Oral presentation at the Great Alaska Weather Modeling Symposium, Fairbanks, AK, March 2007.
 40. McNeeley, S., **M. Shulski**, K. Lemkuhl, and J. Walsh. Climate Change and Variability in Interior Alaska: An Interdisciplinary Approach to Data Integration and Synthesis for Understanding Regional Patterns Relevant to Stakeholders. Poster presentation at the Arctic Science Conference, Fairbanks, AK, September 2006.
 41. **Shulski, M.** and G. Wendler. An Overview of Long-Term Climate Variability and Change in Alaska. Oral presentation at the Arctic Science Conference, Fairbanks, AK, October 2006.
 42. **Shulski, M.** and G. Wendler. *A climatological perspective of wildfires in Alaska*. Poster presentation at the European Geosciences Union, Vienna, Austria, April 2006.
 43. **Shulski, M.**, L. Jones, and G. Wendler. *Trends in Storminess Along Alaska's West Coast*. Poster presentation at the American Geophysical Union Fall Conference, San Francisco, CA, December 2005.
 44. **Shulski, M.** and G. Wendler. *Climate Variability and Change in Alaska*. Oral presentation at the 15th Conference on Applied Climatology, Savannah, GA, June 2005.
 45. **Shulski, M.** and G. Wendler. *Researching observed climate change and variability in Alaska*, Poster presentation at the International Conference on Arctic Research Planning (ICARP II), Copenhagen, Denmark, November 2005.
 46. **Shulski, M.**, G. Wendler, S. Alden, and N. Larkin. *Alaska's Exceptional 2004 Fire Season*. Oral presentation at the 6th Fire and Forest Meteorology Symposium, Canmore, Canada, October 2005.
 47. **Shulski, M.** and G. Wendler. *Changes in climate and associated extreme events in Alaska*. Oral presentation at the American Association for the Advancement of Science – Arctic Science Conference, Anchorage, AK, October 2004.
 48. **Shulski, M.** and G. Wendler. *Extreme temperature and precipitation events in Alaska*. Poster presentation at the American Geophysical Union, San Francisco, CA, December 2003.
 49. **Shulski, M.** and M. Seeley. *Trend analysis of the 20th century snowfall record for Minnesota*. Oral presentation at the American Meteorological Society, Symposium on Global Change and Climate Variations, Orlando, FL, January 2002.
 50. **Shulski, M.** and M. Seeley. *Climatological Characterization of Wind and Snowfall in Minnesota for Assessing the Impact of Living Snow Fences*. Oral presentation at the 24th Conference on Agricultural and Forest Meteorology, Davis, CA, August 2000.

HONORS AND AWARDS

University of Alaska Fairbanks Travel Award for participation in the International Conference on Arctic Research Planning in Copenhagen, Denmark (2005)

Research Partnership Award for University of Minnesota Center for Transportation Studies living snow fence design and website implementation interdisciplinary project (2003)
http://climate.umn.edu/snow_fence/index.html

OTHER PROFESSIONAL ACTIVITIES

1. *Reviewer*, Journal of Geophysical Research, Climate Dynamics, Danish Journal of Geography, Arctic, Journal of Disaster Research, Meteorology and Atmospheric Physics, Environmental Studies and Sciences, Natural Hazards, Bulletin of the American Meteorological Society, Journal of Geophysical Research – Atmospheres, Geophysical Research Letters
2. *Member*, American Association of State Climatologists, American Geophysical Union, American Meteorological Society, Lincoln-Lancaster County Air Pollution Control Advisory Board
3. *Member*, School of Natural Resources Graduate Committee (2010 –2015)
4. *Member*, School of Natural Resources Faculty Advisory Committee (2015 – present)
5. *Host and Organizer*, High Plains Regional Climate Annual Meeting (2010 – 2014)
6. *Search Committee Member*, Dean and Director, Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska – Lincoln (2010)
7. *Workshop Co-Organizer and Presenter*:
 Informing Decisions for Municipal Climate Adaptation Workshop, Lincoln, NE (2017)
 Fish and Wildlife Professional Workshop, Lincoln, NE (2017)
 Climate and Agriculture Tools Workshop, Brookings, SD and Casper, WY (2016)
 Climate Resiliency Extension Professional Development, Lincoln, NE (2015)
 Implications of a Changing Arctic on Water Resources and Agriculture in the Central U.S., Lincoln, NE (2015)
 Regional Climate Services, Lincoln, NE (2015)
 Climate Summary Training for the Wind River Reservation Region, Lincoln, NE (2015)
 Climate and Drought Summary for Kansas-based Tribes, Lincoln, NE (2015)
 Climate and Drought Summary Training for Kansas-based Tribes, Lawrence, KS (2015)
8. *Conference Co-Organizer*, Climate Prediction Applications Science Workshop – Des Moines, IA, March 1 – 4, 2010
9. *Session Co-Chair*, *Atmospheric Circulation, Dynamics, and Chemistry session at Global Change Connection to the Arctic Conference (GCCA-6)* – Tokyo, Japan, December 12-13, 2005

Scientific Outreach and Education Activities

1. Science and Math Enrichment Program (2003 – 2009)
2. Tanana Valley (Alaska) State Fair (2005 – 2009)
3. Alaska Statewide Science Symposium Judge (2005)
4. Science Fair Judge for elementary, middle, and high school (1997 – present)
5. Minnesota Children’s Water Festival (2000 – 2002)
6. Minnesota Agricultural Field Day (2000 – 2002)
7. Invited speaker for middle school science classes (1999 – present)
8. Nebraska Children’s Groundwater Festival (1999)

TEACHING

<i>Instructor</i>		
University of Nebraska	<i>Climate in Crisis</i>	Spring 2010, 2011,

		Fall 2016, 2017
University of Alaska Fairbanks	<i>Geography of Climate and Environmental Change, Weather and Climate</i>	Spring 2008, 2009 Fall 2007
MN Dept of Transportation	<i>Living Snow Fence Design Training Sessions</i>	Spring 2002
University of Minnesota	<i>Introduction to Atmospheric Science</i>	Fall 2000
<i>Invited Lecturer</i>		
University of Nebraska	<i>Climate and Society</i>	Spring 2009, 2011
	<i>Applied Climatology</i>	Fall 2010 - present
	<i>Microclimate: The Biological Environment</i>	Fall 1998
	<i>Meteorological Instrumentation</i>	Spring 1998
University of Alaska Fairbanks	<i>International Arctic Research Center Seminar Series</i>	Spring 2008
	<i>International Arctic Research Center Summer School Program</i>	Summer 2004, 2006
	<i>Weather and Climate of Alaska</i>	Spring 2005, 2006
	<i>Atmospheric Sciences Seminar</i>	Fall 2002 - 2004
University of Tsukuba, Japan	<i>Atmospheric Sciences Seminar</i>	Fall 2005
University of Minnesota	<i>Climate Models and Modelling</i>	Spring 2001

Student Advising

Advisor:

1. Natalie Umphlett (Ph.D. Applied Climate Science, 2014 – present)
Assessing climate capacity in the Missouri River basin and impacts to extreme climate events
2. Stonie Cooper (Ph.D. Applied Climate Science, 2014 – present)
Lightning climatology
3. Juliana Dai (Ph.D. Applied Climate Science, 2011 - 2016)
Climate Change and agriculture in the Great Plains
4. Barbara Boustead (Ph.D. Applied Climate Science, 2010 - 2014)
Climatology of extreme winter storms in the Great Plains
5. William Baule (M.S. Applied Climate Science, 2010 - 2012)
Western Arctic coast wind climatology and trends
6. Peter Bieniek (M.S. Atmospheric Science, 2006 - 2008)
Climate and predictability of Alaskan wildfires

Committee member:

1. Brittany Potter (M.S. Applied Climate Science, 2010 - 2011)
Climatology of the Alaskan North Slope
2. Andrea Coop (M.S. Applied Climate Science, 2009 – 2011)
Spatial accuracy of climate networks in Nebraska
3. Juan Jaimes (M.S. Applied Climate Science, 2011 – 2013)
Improving time structure patterns of orthogonal markov chains

Undergraduate mentor:

1. Corrin Bemis, Undergraduate thesis advisor (School of Natural Resources – UNL, 2017-18)
Barriers to wind energy development in Nebraska
2. Erinn Richert, Undergraduate thesis advisor (School of Natural Resources – UNL, 2012-13)
Climate change and summer precipitation in Nebraska
3. Leigh Jones, REU student (North Carolina State University, 2005)
Storm patterns for Alaska's west coast
4. Elaine McGuiney, REU student (Pennsylvania State University, 2004)
Lightning climatology and application to wildfire science
5. Pablo Paiewonsky, REU student (Oswego State University, 2003)
Wind climatology for Alaska