

Deborah J. Bathke

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Education

Doctor of Philosophy, Atmospheric Science The Ohio State University	2004
Master of Science, Geosciences University of Nebraska-Lincoln	1998
Bachelor of Science, Meteorology-Climatology University of Nebraska-Lincoln	1995

Professional Experience

Associate Research Professor School of Natural Resources National Drought Mitigation Center University of Nebraska-Lincoln	May 2016 – Present
Associate Professor of Practice Department of Earth and Atmospheric Sciences University of Nebraska-Lincoln	August 2015 – May 2016
Assistant Professor of Practice Department of Earth and Atmospheric Sciences University of Nebraska-Lincoln	August 2011 – August 2015
Visiting Scientist National Oceanic and Atmospheric Administration Boulder, Colorado	January 2014 – September 2014
Assistant Professor of Practice School of Natural Resources (24%), National Drought Mitigation Center (35%), Department of Earth and Atmospheric Sciences (41%) University of Nebraska-Lincoln	July 2008 – June 2011
Assistant State Climatologist/Assistant College Professor Department of Plant and Environmental Sciences New Mexico State University	May 2005 – June 2008
Program Specialist Air Quality Division Nebraska Department of Environmental Quality	January – May 2005

Graduate Teaching Associate

Department of Geography
The Ohio State University

September 1998 – December 1998;
January 2003 – June 2003

Graduate Research Fellow

Byrd Polar Research Center
The Ohio State University

January 1999 – December 2002

Graduate Teaching Associate

Department of Geography
University of Nebraska-Lincoln

January 1998 – May 1998

Graduate Research Associate

Department of Geosciences
University of Nebraska-Lincoln

January 1996 – December 1997

Teaching

Traditional

Earth's Climate: Past, Present, and Future (UNL), senior level course for majors x1 2014
Severe and Unusual Weather, survey course for non-majors (UNL) x12 2008 – 2016
Climate Masters of Nebraska (UNL) x1 2013
Introduction to Applied Climatology, survey course for Natural Resources majors (UNL) x 2 2008 – 2009
Graduate Research Forum (UNL) x 1 2009
Basic Meteorology, survey course (Ohio State) x 2 2008

Laboratory

Basic Meteorology (Ohio State) x 4 2003
Introduction to Physical Geography Lab (UNL) x3 1998

Learning Community (William H. Thompson)

Severe and Unusual Weather (UNL) x6 2011 – 2015

Distance Education

Severe and Unusual Weather (UNL) x6 2011-2013

Advising

Chief Undergraduate Adviser,

Department of Earth and Atmospheric Sciences

August 2011 – May 2016

Rachel Phinney, B.S. (adviser), University of Nebraska

Undergraduate Research: The Role of Social Media in Disseminating and Collecting Drought Information

2016 – present

Beichen Zhang, B.S. (REU adviser), Northwest A&F University, China

Undergraduate Research: A Comparison of Drought Indicators to Crop Yields for Nebraska from 1981 to 2012

Summer 2016

Claire Schirle, B.S. (adviser), University of Nebraska

Undergraduate Thesis: Utility and Applicability of the VegDRI Drought Index in the Western United States

2015 – 2016

Stephen Shield, B.S. (adviser), University of Nebraska Undergraduate Thesis: Analysis of Drought Mitigation in Multi-Hazard Mitigation Planning	2015 – 2016
Jacob Petr, B.S. (adviser), University of Nebraska Undergraduate Thesis: Measuring Climate Resilience in Developing Countries Using the Community Capitals Framework	2013 - 2016
Crystal Bergman, Ph.D. (committee member) Dissertation: Improving Drought Management for Transboundary River Basins in the United States through Collaborative Planning	August 2009 - 2014
Joseph Robine, M.S. (co-adviser) Thesis: Developing a Drought Resiliency Index	August 2011 - Present
Joseph Robine, B.S. (adviser) Thesis: Spatial Patterns of Drought Triggers and Indicators	May 2010 – August 2011
Jonathon Burnham, B.S. (adviser) Thesis: The Effect of ENSO on Nebraska Winter Snowfall	August 2009 – August 2010

Research Activity

Climate Scientist with the National Drought Mitigation Center. Research focus includes drought risk management strategies, drought planning, development of decision-support tools, and community education and engagement in drought planning and monitoring.	July 2008 - Present
Principal Investigator with the Climate Assessment of the Southwest (CLIMAS) NOAA Regional Integrated Science Assessment Program. Research included developing of web-based products and decision-support tools to meet stakeholder needs and investigating climate change impacts on New Mexico's water resources.	May 2005 – June 2008
Research Fellow with the Byrd Polar Research Center Ice Core Paleoclimatology Group. Research included the laboratory and statistical analysis of ice core chemical and physical properties and their relationship to gridded meteorological, surface station, and mesoscale model atmospheric data.	January 1998 – January 2003
Graduate and Undergraduate Research Assistant. Research included the statistical analysis of ice core oxygen isotopic data and the relationship to gridded meteorological data.	January 1995 – August 1998

International Program Activities

Jordan , Worked with the International Centre for Biosaline Agriculture to organize and conduct stakeholder engagement meetings in Amman in October.	2016
Antigua , Worked with the Caribbean Institute of Meteorology and Hydrology to organize and conduct a drought policy workshop in February.	2016
Austria , Judged the student poster competition at the 8 th European Conference on Severe Storms in Wiener Neustadt in September.	2015

Funded Grants

<i>Drought Planning Using Community Threat and Hazard Identification and Risk Assessment.</i> PI: D. Bulling. Co-I: L. Pytlik Zillig, and C. Stiles, University of Nebraska-Lincoln), NOAA, \$279,998.	2016-2018
<i>HPRCC: NIDIS Portal Assistance,</i> PI: N. Umphlett. Co-I: M. Svoboda, B. Fuchs, and D. Bathke, NOAA, \$150,000.	2016 – 2017
<i>Drought Information Services for Ag in the U.S.,</i> PI: B. Fuchs, Co-I: M. Svoboda, and T. Tadesse), USDA, \$827,501.	2016 – 2017
<i>North Platte NRD Drought Tournament,</i> PI: T. Bernadt, Co-I: N. Wall, and E. Wickham), \$5,823.	
<i>Building a Comprehensive Geoscience Learning Experience,</i> NSF, PI: M. Searls, Co-I: L. Arthurs, D. Bathke, and D. Harwood), \$358, 857.	2015-2018
<i>Providing Drought Information Services for the Nation: the National Drought Mitigation Center,</i> PI: M. Hayes, Co-I: M. Svoboda, T. Tadesse, D. Bathke, and B. Fuchs, University of Nebraska-Lincoln, NOAA, \$2,443,222.	2015-2018
<i>Enhancing the NDMC/NCAR Partnership for Drought Risk Management Strategies,</i> PI: M. Hayes, Co-I: M. Svoboda and D. Bathke, University of Nebraska-Lincoln, \$125,000.	2015 –2017
<i>Drought Risk Management for the United States,</i> PI: M. Hayes, Co-I: M. Svoboda, T. Tadesse, D. Bathke, and B. Fuchs, University of Nebraska-Lincoln), NOAA, \$693,696.	2014-2016
<i>Drought Information Service in Support of the National Integrated Drought Information System,</i> PI: M. Hayes, Co-I: M. Svoboda, T. Tadesse, D. Bathke, and B. Fuchs, University of Nebraska-Lincoln), NOAA, \$739,885.	2013 -- 2016
<i>Regional Climate Service Support in the High Plains Region,</i> PI: M. Shulski, Co-I:, M. Hayes, M. Svoboda, University of Nebraska-Lincoln), NOAA, \$830,000.	2011 – 2013
<i>Colorado Drought Planning Assistance,</i> PI: M. Hayes, Co-I: and C. Knutson, University of Nebraska-Lincoln), Colorado Water Conservation Board, \$12,000.	2009 – 2010
<i>Distance Education Course Development,</i> PI: D. Bathke, University of Nebraska-Lincoln, \$3000.	2010 – 2010
<i>Reducing Drought Vulnerability: A Decision-Making Tool to Improve Drought Management of Urban Landscapes,</i> PI: R. St. Hilaire , Co-I: from New Mexico State University, C. Fraisse from the University of Florida, and G. Garfin from the University of Arizona), NOAA, \$106,013.	2008 – 2009
<i>Enhancing and Evaluating the Dynamic Drought Index Tool,</i> PI: G. Carbone, Co-I: and others from the University of South Carolina and the University of Arizona), NOAA, \$83,206.	2008 – 2009
<i>Integrating Climate Science for Decision-Support, Mitigating Risk and Promoting Resilience</i> PI: J. Overpeck , Co-I: and collaborators from University of Arizona), , NOAA RISA Program funded at approximately \$1.2 million per year for 5 years.	2007 – 2010
<i>Reducing New Mexico’s Agricultural Drought Vulnerability through Stakeholder Assessment,</i> PI: C. Fraisse , Co-I: and others from the University of Florida, the University of Georgia, and the University of Arizona, NOAA, \$153,777 .	2007 – 2008

<i>Drought Index Tools to Improve Drought Monitoring and Preparedness</i> , NOAA, PI: K. Dow, Co-I: and others from the University of South Carolina and the University of Arizona), NOAA, funded at \$149,359.	2007 – 2008
<i>Tree-ring Reconstructions of Hydroclimatic Variability in the Rio Grande Basin</i> , PI: C. Woodhouse, Co-I: and others from the University of Arizona and the University of Colorado, NOAA, \$59,845.	2007 – 2008
<i>Development of a Fine-Scale GIS System for Modeling Monsoon Season Flash Flood Events in the Lower Rio Grande of New Mexico</i> , New Mexico Student Water Research Program, D. Bathke, New Mexico Water Resources Research Institute, \$5,000.	2007 – 2010
<i>Support for climate monitoring and education</i> , D. Bathke, New Mexico Flood Plain Manager's Association, \$2,500.	2006 – 2007
<i>Instrumentation support</i> , D. Bathke, New Mexico Water Task Force, \$24,000.	2006
<i>Assessing the meteorological processes that control the variability of net accumulation over Greenland</i> , D. Bathke and M. Mosley-Thompson, NASA Training Grant, \$66,000.	1999 – 2002

Publications

Refereed

- Oglesby, R.J., Bathke, D.J., Rowe, Wilhite, D., 2015: *Understanding and Assessing Projected Future Climate Change for Nebraska and the Great Plains*, 25(2), 97-107.
- Tadesse, T., Bathke, D., Wall, N., Petr J., and Haigh, T., 2015: Participatory Research Workshop on Seasonal Prediction of Hydroclimatic Extremes in the Greater Horn of Africa, *Bulletin of the American Meteorological Society*, 96 (8), ES139-ES142.
- DeMouche, L., Bathke, D.J., and Doesken, N., 2007: Master Gardeners Role in Encouraging Water Conservation Using a Rain Gauge Network, *Journal of Extension*, 45 (4), 2007.
- Rogers, J.C., Bathke, D.J., Mosley-Thompson, E., Wang, S-H., 2004: Atmospheric circulation and cyclone frequency variations linked to the primary modes of Greenland Accumulation, *Geophysical Research Letters*, 31, L23208.
- Mosley-Thompson, E., J.R. McConnell, R.C. Bales, Z. Li, P.-N. Lin, K. Steffen, L.G. Thompson, R. Edwards, and D. Bathke, 2001: Local to regional-scale variability of annual net accumulation on the Greenland ice sheet from PARCA cores, *Journal of Geophysical Research*, 106 (D24), 33839-33852.

Non-Refereed (Conference Proceedings, Abstracts, and Technical Reports), 2006-present

- Zayak, T., Bathke, D., Wall, N., Bernadt, T., Wickham, E. , 2016: *North Platte Natural Resources District Invitational Drought Tournament Playbook*.
- Carson, A., Hill, H., Olsen, R., Bathke, D., Wall, N., Bernadt, T., Hayes, M., Haigh, T., Podebradska, M., Mucia, T., Wall, M., Mantonya, K., Black, C., Bryant, M., Teague A., Kluck, D., 2016: *Playbook for the San Antonio Watershed Multi-hazard Tournament*.
- Carson, A., Hill, H., Olsen, R., Bathke, D., Wall, N., Bernadt, T., Hayes, M., Haigh, T., Podebradska, M., Mucia, T., Wall, M., Mantonya, K., Black, C., Bryant, M., Teague A., Kluck, D., 2015: *Playbook for the San Antonio Watershed Multi-hazard Tournament*.
- Lackstrom, K., Bathke, D., Finnessy, T., Wilhite, D., and Wall, N., 2015: *Building Drought Resilience Across Scales and Sectors*. National Adaptation Forum, St. Louis, MO, 2015.
- Mucia, T. and Bathke, D., 2015: Dreaming of a White Christmas? *Nebraskaland Magazine*, December 2015.

- Smith, K. and Bathke, D., 2015: *States, Communities and Drought Planning*. American Water Resources Association Summer Specialty Conference on Climate Change Adaptation, New Orleans, LA, 2015.
- Bathke, D.J., Mantonya, K., Wall, N.A., and Wall, M., 2014: *An Integrated Framework for Drought Impact Assessment and Resilience Planning*. Presented at the Great Plains Drought Symposium, Lincoln, NE, 2014.
- Bathke, D.J., Wall, N.A., Haigh, T., Smith, K.H., and Bernadt, T, 2014: *Public Participation, Education, and Engagement in Drought Planning*. 2015 American Geophysical Union Fall Meeting, San Francisco, 2014.
- Bathke, D.J., Haigh, T., and Wall, N.A. (2013, October). *Using Community Capitals in Drought Planning and Resilience*. Presented at the 9th Annual Community Capitals Institute in Brookings, SD, 2013.
- Bathke, D.J., Oglesby, R.J. Rowe, C.M., Wilhite, D., 2014: *Understanding and Assessing Climate Change: Implications for Nebraska*. Available at: <http://snr.unl.edu/download/research/projects/climateimpacts/2014ClimateChange.pdf>.
- Bathke, D.J., Wall, N.A., Haigh, T., Hayes, M.J, and Svoboda, M.D., 2013: *Engaging the Drought Preparedness Community: Celebrating Successes and Planning for the Future*. Abstract Proceedings of the 92nd Meeting of the American Meteorological Society, Austin.
- Bathke, D.J., Wall, N., Nothwehr, J., Smith, K., Woudenberg, D., Bernadt, T., Bergman, C., Robine, J. Hayes, M., Svoboda, M., Darby, L., and Pulwarty, R., 2012: *Building a Sustainable Network of Drought Communities*, NIDIS, available <http://www.drought.gov>, 37 pp.
- Hayes, M., C. Bergman, D. Bathke, J. Nothwehr, N. Wall, M. Svoboda, T. Bernadt, and J. Robine, 2011: *Engaging Drought Decision-Makers across the United States*. Proceedings of COST 734 Final Conference, Topolcianky, Slovakia, May 4-5, 2011.
- Bathke, D.J, Nothwehr, J., Wall, N.A., C.J. Bergman, M.D. Svoboda, M.J. Hayes, T.K. Bernadt, and J. Robine, 2011: *Building a Cooperative Network of Drought Communities*. Abstract Proceedings of the 19th Conference on Applied Climatology, Asheville, NC, 2011.
- Bathke, D.J, J. Nothwehr, N.A. Wall, Bergman, C.J., Svoboda, M.D., Hayes, M., Bernadt, T.K., and Robine, J., 2011: *Building a Cooperative Network of Drought Communities*. Abstract Proceedings of the 19th Conference on Applied Climatology, Asheville, NC, 2011.
- Bergman, C.J., Hayes, M.J., Bathke, D.J., Knutson, C.L., and Tang, Z., 2011: *The Status of Drought Planning for Watersheds and Hydrologic Basins in the United States*. Abstract Proceedings of the 19th Conference on Applied Climatology, Asheville, NC.
- Bergman, C., Bathke, D., Svoboda, M., Wall, N., Nothwehr, J., Robine, J., Bernadt, T., and Hayes, M., 2011: *Vision into Action: The Establishment and Facilitation of an Effective Drought Coordinator Network in the United States*. Abstract Proceedings of the 91st Meeting of the American Meteorological Society, Seattle.
- Robine, J., Bathke, D.J., Svoboda M.D., Nothwehr, J., Bergman, C.J., Wall, N.A., Bernadt, T.K., and Hayes, M.J., 2011: *Spatial Patterns of Drought Triggers and Indicators*. Abstract Proceedings of the 91st Meeting of the American Meteorological Society, Seattle.
- Hayes, M., Bathke, D., Nothwehr, J., Robine, J., Bergman, C., Svoboda, M., Wall, N., and Bernadt, T. 2010: *Vision into Action: the Establishment and Facilitation of an Effective Drought Coordinator Network in the United States*. A View of the Future for Research on Climate Change Impacts on Water: Workshop Focusing on Adaptation Strategies and Information Needs. Sponsored by NOAA, the Water Research Foundation, and the Water Environment Research Foundation. Denver, CO, August 31-September1, 2010.
- Bathke, Deborah J, 2010: *Meteorology 140: Severe and Unusual Weather, a Course Portfolio*. Available at <http://www.courseporfolio.org>.

- Bathke, D.J, Nothwehr, J., Smith, K., Widhalm, M., Hunt, E., and Hayes, M.J. ,2009: *Status of Drought Early Warning in the United States: National Integrated Drought Information System Workshop Summary*. Available <http://www.drought.gov>, 24 pp.
- Garfin, G.M, Bathke, D.J., Carbone, G., Fraisse, C.W., Roncoli, C., Dow, K., Lay, E., Hartmann, H.C., Rhee, J., Crimmins, M., Higgins, M., and DeMouche, L., 2008: *Regional knowledge transfers: Coping with drought through collaboration*, Proceedings of the 17th Conference on Applied Climatology, Whistler, BC, Canada.
- Bathke, D.J., Creel, B.J. , Granados-Olivas, A., Sánchez-Flore, E. , 2007 *Climate Change Impacts on Transboundary Groundwater Aquifers*: Abstract Proceedings of the American Water Resources Association Annual Conference, November 12-15, 2007.
- New Mexico Climate Change Work Group, 2006: *The Impact of Climate Change on New Mexico’s Water Supply & Ability to Manage Water Resources*. Available at: <http://www.nmdrought.state.nm.us/>.

Service to the Profession

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| Member, Steering Committee, NIDIS Intermountain West Drought Early Warning System. | 2016 |
| Co-Chair, “Engaging the Preparedness Community” workgroup for the National Integrated Drought Information System (NIDIS) Implementation Team | 2009 – 2017 |
| Member, the National Integrated Drought Information System (NIDIS) Implementation Team | 2006 – 2017 |
| Member, “Engaging the Preparedness Community” workgroup for the National Integrated Drought Information System (NIDIS) Implementation team (2006 – 2009). | 2006 – 2009 |
| Peer Reviewer: Natural Hazards, International Journal of Climatology, Journal of Applied Meteorology and Climatology, Great Plains Research, Journal of the American Water Resources Association, Journal of Agricultural and Forest Meteorology, and the NOAA SARP and NSF REU grant programs | Ongoing |

Service to the University, College, and Department

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| Evaluator, Meteorology-Climatology Transfer Credits | 2015 - 2016 |
| Member, ACE Outcomes 5-Year Review faculty group | 2015 |
| Presenter, Extension Faculty Professional Development on Changing Climate Workshop | 2015 |
| Member, in UNL’s Quality Initiative Project, <i>Exploring Learning and Career Preparation within the Undergraduate Major</i> | 2014 –2015 |
| Member, Department of Earth and Atmospheric Sciences, Information Committee | 2014 – 2016 |
| Lead, Meteorology-Climatology biennial and 5-year Academic Program Review program assessments | 2011 – 2016 |

Member , Department of Earth and Atmospheric Sciences, ACE Assessment Committee	2011 – 2016
Member , Graduate Faculty, University of Nebraska-Lincoln	2010 – present
Member , Atmospheric Sciences Assistant Professor Search Committee	2010 –2011
Member , Climate Variability Extension Education Search Committee	2009 –2009
Member , SNR Summer Weather Camp Organizational Committee	2010 –2011
Member , Central Plains Severe Weather Symposium Organizational Committee	2009 –2010

Service to the Community

Organizer/Trainer , Drought Resilience Training for the Montana WaterCorps, Bozeman, MT	2015
Presenter , <i>Nebraska Citizens for Science Forum</i> , Lincoln, NE	2014
Presenter , <i>Ag Safety Days</i> , Fairbury, NE	2014
Presenter/Participant , <i>ND Tribal Climate and Weather Extremes Workshop & Tribal Community Resilience Training</i>	2012
Judge , <i>Climate Change Summit for Students</i> , ANDRILL	2011
Co-Presenter , <i>Sunday with a Scientist</i> , Nebraska State Museum	2011
Presenter , Allen Elementary/Middle School, Allen, NE	2011
Organizer and Presenter , UNL Girl Scout Weather Camp	2010
Presenter , <i>Mead Agricultural Research and Development Center Science Festival</i>	2009 – 2010
Coordinator , Nebraska Earth Science Week	2010
Presenter , 4-H Workshop on Weather and Climate	2010
Volunteer , <i>Dinosaurs and Disasters</i>	2009 – Present
Volunteer , <i>Central Plains Severe Weather Symposium and Family Weatherfest</i>	2009 – 2010
Chair , Drought Monitoring Workgroup of the New Mexico Governor’s Drought Task Force	2006 – 2008
Member , Drought Monitoring Workgroup of the New Mexico Governor’s Drought Task Force	2006 – 2006
State Coordinator and Trainer , New Mexico Community Collaborative Rain, Hail, and Snow Network (CoCoRaHS)	2005 – 2008
Presenter , Approximately 10 extension activities at agricultural field days and conferences to pecan growers, viticulturists, and various other producers in the use of weather and climate information in New Mexico and West Texas.	2005 – 2008
Instructor , Weather and Climate Information for New Mexico Master Gardeners	2005 – 2008

Interviewee , The New Yorker, Fox News, Las-Cruces Sun-Times, Albuquerque Journal, KSNM	2005 – 2008
Co-Chair , Workgroup on Hydrometeorological Data for the New Mexico Governor’s Coordinated Resource Management Initiative	2005 – 2006

Organization of Symposia or Meetings, Invited Speaker

Workshop Co-organizer: <i>NIDIS Engaging Preparedness Communities Workshop</i> , Lincoln, NE.	2016
Member/Co-Organizer: Steering Committee for <i>the Western Drought Coordinators Workshop</i> , Seattle, WA.	2015
Member/Co-Organizer: Steering Committee for the <i>Drought and Wildfire Workshop</i> , Boise, ID.	2015
Session Co-organizer: <i>Building Drought Resilience Across Scales and Sectors</i> , Working Group, National Adaptation Forum, St. Louis, MO.	2015
Invited Speaker: <i>Building Blocks: Capacity Building and Resiliency</i> , Plenary Session, Extension Disaster Education Network Annual Meeting, Florence, AL.	2014
Invited Speaker: <i>Understanding and Assessing Climate Change: Implications for Nebraska</i> , Panel Discussion, Heuermann Lectures, University of Nebraska-Lincoln.	2014
Invited Speaker: <i>Slow Onset, Steady Change: How Drought Policy is Evolving to Enhance Resilience</i> , Panel Discussion, 39th Annual Natural Hazards Research and Applications Workshop, Broomfield, CO.	2014
Consultant/Referee: Drought Planning Gaming Scenarios in Saskatoon, Saskatchewan; Denver, CO; Okanagan, BC; Norman, OK.	2012; 2014
Co-Organizer/Facilitator: <i>Drought Outlook and Management Considerations for Rangeland Livestock Production Workshop</i> , Socorro, NM.	2013
Invited Speaker: Tribal Climate and Extremes Workshop, Ft. Yates, ND.	2012
Organizer/Facilitator: The National Integrated Drought Information System’s <i>Building a Sustainable Network of Drought Communities Workshop</i> (national workshop), Chicago, IL.	2011
Organizer/Facilitator: The Southern Climate Impacts Planning Program’s State Drought Planning Workshop (regional workshop), Memphis, TN.	2011

Professional Development Training (2007 to 2014)

Teaching Technology: 8 classes

Pedagogy: 11 classes, 1 five-week course, and 1 year-long fellowship

Grant Writing: 2 workshops

Instrumentation: 2 short-courses

Advising: 5 courses and 1 three-day workshop

Professional Memberships

American Meteorological Society

American Association of State Climatologists

Phi Kappa Phi Honor Society

Gamma Sigma Delta Agricultural Honor Society