

Renee A. McPherson

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EDUCATION

- Ph.D. Meteorology, University of Oklahoma, Norman, OK, 2003
M.S. Meteorology, University of Oklahoma, Norman, OK, 1991
B.S. Mathematics and Meteorology with Honors, University of Wisconsin-Madison, Madison, WI, 1987
Diploma Madison West High School, Madison, WI, 1983 (GPA 4.0)

EXPERIENCE

Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK

Associate Professor, August 2012 to Present

My research foci include land-air-vegetation interactions, regional and applied climatology, surface observing systems, meteorology, and societal and ecological impacts of climate variability and change. I teach classes in climatology and physical geography, advise graduate students in their research and education, and mentor undergraduate students who are interested in research opportunities. I serve as a member of several professional committees in the broader community and at the University, hold an adjunct associate professor appointment in the OU School of Meteorology, and actively participate in departmental activities. In 2013, I serve as committee chair for Kimberly Klockow (Ph.D.), Toni Klemm (Ph.D.), Emma Fagan (M.A.), and Amber Cannon (M.A.) as well as committee member for Juddy Okpara-Ejiaku (Ph.D.), Virginia Silvis (Ph.D.), Aparna Bamzai (Ph.D.), and Paulette Blanchard (M.A.) These items are detailed below.

South Central Climate Science Center, University of Oklahoma, Norman, OK

Director of Research, March 2012 to Present

I oversee the Consortium-related activities of the South Central Climate Science Center, as a co-governing partner of the U.S. Geological Survey (USGS). Activities include coordination with USGS Headquarters, our USGS Director, our Consortium (Texas Tech University, Oklahoma State University, Chickasaw Nation, Choctaw Nation of Oklahoma, Louisiana State University, and NOAA's Geophysical Fluid Dynamics Laboratory), the six Landscape Conservation Cooperatives within our region, and the seven other Climate Science Centers. I supervise the University of Oklahoma employees of the Center and provide informal supervision of non-OU employees in the Consortium in the Norman main office. In collaboration with Dean Berrien Moore, I am responsible for our multi-million dollar budget.

I seek partnerships between our federal partners and Center faculty for research opportunities and help faculty develop management-relevant proposals. I instigate or enable the development of large, multi-disciplinary proposals that extend the capabilities of the broader Center team. For example, in collaboration with Center faculty at the University of Oklahoma and Oklahoma State University, I co-led the successful \$20 Million award from the National Science Foundation's EPSCoR program to improve research infrastructure for adaptation of socio-ecological systems to climate variability and change. In 2013, I became a member of the leadership team for the Southern Climate Impacts Planning Program.

Oklahoma Climatological Survey, University of Oklahoma, Norman, OK

State Climatologist, January 2010 to Present

Acting Director, August 2009 to December 2009

Associate Director, October 2006 to August 2009

Acting Director, August 2004 to September 2006

Acting Director, February 2003 to August 2003

Associate Director, April 2001 to January 2003

Assistant Director, 1995 to March 2001

Group Leader, Emerging Projects Division, 1996 to 1999

Co-Director, Project EarthStorm, 1996 to 1999

Assistant Director, Project EarthStorm & ARM Educational Outreach, 1992 to 1996

As State Climatologist, I conduct research and develop research programs that are relevant to the historical and future climate of Oklahoma. Although some of the research is focused on basic climatological processes, such as land-air-vegetation interactions, many studies examine the applications of climatic knowledge to weather- and climate-sensitive sectors such as agriculture, energy, and water resources.

My primary responsibility as acting or associate director was to oversee the programs of the Oklahoma Climatological Survey (OCS). I assisted the director in OCS operations, including supervising up to 75 employees, acting as an advisor, verifying the integrity of the OCS budget, representing OCS in meetings, writing proposals, conducting staff hires, completing deliverables for grants and contracts, engaging other state agencies in partnership activities, and working with the legislature on funding. While I was acting director (over 3 years) and when the health of the director's spouse was critical (7 months), I directed the entire agency.

I partnered with Oklahoma legislators, OCS and Mesonet customers, and the OU/OSU team to obtain initial permanent appropriations of OK-First and EarthStorm for \$250,000 annually through the Oklahoma Department of Public Safety (DPS) in 1998, additional permanent appropriations of \$130,000 from DPS in 1999, and \$1.2 Million in permanent appropriations for the Oklahoma Mesonet in 2001. I worked with colleagues to amend the state legislative mandate of OCS to include the Oklahoma Mesonet (SB 547, 2003; passed), to add the OCS Director (or designee) to the carbon sequestration committee (HB 1051, 2003; passed), and to include the Oklahoma Mesonet into the Electric Utility Restructuring Act (SB220, 2000; failed).

Much of my career has been devoted to successful implementation, maintenance, and innovation of the Oklahoma Mesonet. I have guided Mesonet personnel through critical

decisions for the health of the network and sought opportunities to match the strengths of our personnel with the needs of our customers. I initiated and oversaw most of the OCS and Mesonet web sites in the 1990s and early 2000s that resulted in award-winning decision support systems and significant interest from external organizations. As co-chair of the Steering Committee in 2003-04, I helped lead strategic planning activities for the Oklahoma Mesonet.

I have served as principal or co-investigator on grants and contracts totaling over \$40 million. I authored or co-authored numerous peer-reviewed publications and over 50 additional manuscripts or informal publications, including several technical reports and a laboratory manual for undergraduate meteorology students.

Through grants via the National Weather Service, I led the effort to prototype a data ingest and quality assurance system for the modernized cooperative observer network in New England. I led a needs assessment for the modernization of the national meteorological and hydrological services of the Republic of Croatia, and served as lead author for the final report for the feasibility study conducted by a team from the National Weather Center.

I partnered with several outside groups and individual scientists to make better use of the Oklahoma Mesonet infrastructure (e.g., Oklahoma Departments of Environmental Quality, Public Safety, Emergency Management, and Education; Oklahoma rural electric cooperatives). I worked with colleagues and the Oklahoma Water Resources Board to install prototype sites for groundwater depth measurement.

I initiated the long-standing partnership between OCS and the Ministry of Natural Resources in the Province of Québec. I led activities to transfer technology from OCS to the private sector (e.g., Weather Decision Technologies), coordinating intellectual property issues with OU's Office of Technology Development.

I coordinated Mesonet 2002, an international institute that addressed the planning, design, funding, implementation, and operation of multi-purpose, mesoscale, atmospheric environmental monitoring networks. I guided the Joint Urban 2003 field experiment to Oklahoma City and the first Clarus Interagency Coordinating Committee meeting to Norman. The former experiment (co-sponsored by the Department of Energy, Department of Homeland Security, and Defense Threat Reduction Agency) was designed to collect high-resolution meteorological and dispersion data in an urban environment. The latter meeting, sponsored by the Federal Highway Administration, discussed establishing an ingest, quality assurance, and dissemination function for road weather services nationwide.

Funded by the National Science Foundation, I developed a K-12 program to educate 50+ dedicated teachers statewide who used Oklahoma Mesonet data in their classrooms. The inquiry-based curricular materials that I developed were nationally recognized by the National Staff Development Council. I provided guidance for the development of a host of data visualization tools (WxScope, WxScope Plugin, WeatherScope) and web-based decision support systems. I oversaw OCS's educational outreach programs when our K-12 and public safety outreach programs both won national awards. In 2009, these programs served 500+ K-12 students, 65 teachers, and 400+ public safety officials.

School of Meteorology, University of Oklahoma, Norman, OK**Adjunct Associate Professor, 2007 to present****Adjunct Assistant Professor, 2003 to 2006**

I served as committee chair for five Masters students in the School of Meteorology. I also have served on the committee for one Masters (Meteorology) and two Ph.D. students (Meteorology and Geography). I served as an advisor for 18 undergraduates, five students in Senior Capstone, and one student who completed her Senior Honors project. I am a member of the Undergraduate Studies Committee, regularly participate in School of Meteorology faculty meetings, and served as a member of the faculty search committee for a cloud physicist/physical meteorologist. I designed, developed, and taught Applied Climatology and Meteorology (METR 4803/5803), the first applied climatology course in the School for more than a decade. I used cooperative, service learning, and computer-based learning activities. The final project required the students to provide a weather- or climate-related service to a customer near OU.

Cooperative Institute of Mesoscale Meteorological Studies, University of Oklahoma, Norman, OK**Assistant Director, August 2003 – July 2004**

My primary responsibility was to serve as a liaison to the National Oceanic and Atmospheric Administration (NOAA) partners of the Cooperative Institute of Mesoscale Meteorological Studies (CIMMS). To this end, I supervised 100 CIMMS employees who were affiliates of NOAA units, primarily in Norman, OK; oversaw the transfer of CIMMS intellectual property to the public and private sectors (via the “University of Oklahoma’s Treatment of Intellectual Property with Respect to the NOAA Weather Partners”); and participated in the administration of CIMMS. In collaboration with the CIMMS director and my colleagues, I prepared the briefing book for the Five-Year CIMMS Review, conducted by NOAA’s Science Advisory Board. I participated in the two-day workshop to develop an OU radar initiative, which culminated in a formal document provided to OU President David Boren.

School of Meteorology, University of Oklahoma, Norman, OK**Graduate Research Assistant, 1987-1991****Class instructor, Dynamics I, Spring 1990****Class instructor, Introduction to Meteorology, Fall 1991****Lab instructor, Dynamics I, Spring 1989**

During my Masters program, I conducted research on the predictability of supercell thunderstorms using the Klemp-Wilhemson cloud model. I taught three classes (see below), created a new laboratory section for Dynamics I, established the School’s Student Affairs Committee, and tutored undergraduates. I also helped to edit the NSF proposal that initially funded the Center for Analysis and Prediction of Storms. I created and taught a laboratory section in Dynamics I to help the students apply what they learned in lecture (15 students in Spring 1989). Although fully funded as a GRA, I asked to serve as instructor for Dynamics I (26 students) and Introduction to Meteorology (120 students) so that I could teach. I developed the materials for both classes.

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- Klockow, K. E., and R. A. McPherson, 2013: A spatio-temporal analysis of tornado warning response: Potential implications of Warn-on-Forecast. *Appl. Geog.*, in review.
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- McPherson, R. A., 2013: Vegetation-atmosphere interactions: Impacts of Oklahoma's winter wheat crop on temperature and moisture fields. *J. Appl. Meteor. Clim.*, in review.
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- Boone, K. M., R. A. McPherson, M. B. Richman, and D. J. Karoly, 2012: Spatial coherence of rainfall variations using the Oklahoma Mesonet. *Intl J. Clim.*, **32**, 843-853.
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- Arndt, D. A., J. B. Basara, R. A. McPherson, B. G. Illston, G. D. McManus, and D. B. Demko, 2009: The overland reintensification of Tropical Storm Erin (2007). *Bull. Amer. Meteor. Soc.*, **90**, 1079-1093.
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- McPherson, R. A., C. Fiebrich, K. C. Crawford, R. L. Elliott, J. R. Kilby, D. L. Grimsley, J. E. Martinez, J. B. Basara, B. G. Illston, D. A. Morris, K. A. Kloesel, S. J. Stadler, A. D. Melvin, A.J. Sutherland, and H. Shrivastava, 2007: Statewide monitoring of the mesoscale environment: A technical update on the Oklahoma Mesonet. *J. Atmos. Oceanic Technol.*, **24**, 301–321.
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- McPherson, R. A., 2013: High-resolution surface observations for climate monitoring. In *Climate Variability - Regional and Thematic Patterns*, InTech: Rijeka, Croatia, in press.
- Oklahoma Climatological Survey, 2005: Explorations in meteorology: A lab manual. [Eds. K. C. Crawford, K. A. Kloesel, R. A. McPherson, A. D. Melvin, and D. A. Morris] Thompson/Brooks/Cole Publishing, Belmont, CA, 202 pp.

OTHER PUBLICATIONS OR ABSTRACTS

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- Klockow, K. E., R. A. Peppler, R. Smith, N. C. Grams, A. Cannon, and R. A. McPherson, 2013: Tornado Stories in Central Oklahoma – Town Hall Meetings to Help Understand Local Knowledge and Beliefs. Eighth Symposium on Policy and Socio-economic Research, American Meteorological Society, J2.4.
- Klockow, K. E., R. A. McPherson and R. P. Thomas, 2013: Representations of risk space and decision-making in tornado warnings. Eighth Symposium on Policy and Socio-economic Research, American Meteorological Society, 5.4.

- Silvis, V. G., R. McPherson, H. Lazrus, M. B. Richman, and M. D. Hunter, 2013: Analysis of Teleconnections and Drought for the Arbuckle-Simpson Aquifer, 25th Conference on Climate Variability and Change, American Meteorological Society, 577.
- Qiao, L., Y. Hong., R. McPherson, M. Shafer, D. Williams, and D. Lilly, 2013: Climate change and hydrological response in the trans-state Oologah Lake watershed—comparison between statistical downscaled CMIP3 and dynamical downscaled NARCCAP simulations. 25th Conference on Climate Variability and Change, American Meteorological Society, 107.
- Fagan, E., C. E. Lunday, and R. McPherson, 2013: A Brief Comparison Between North America Regional Climate Change Assessment Program (NARCCAP) Output and Oklahoma Mesonet Observations: Temperature Comparisons. 12th Annual Student Conference, American Meteorological Society, S135.
- Lunday, C. E., E. Fagan, and R. McPherson, 2013: A Comparison Between North American Regional Climate Change Assessment Program Output and Oklahoma Mesonet Observations: Precipitation. 12th Annual Student Conference, American Meteorological Society, S125.
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- Monroe, K., H. Lazrus, R. McPherson, V. Silvis, R. Morss, E. Towler, and D. PaiMazumder, 2012: Water decisions for sustainability of the Arbuckle-Simpson Aquifer. Proc. Land Grant and Sea Grant National Water Conference, Portland, OR, United States Department of Agriculture - National Institute of Food and Agriculture, 26.
- Lazrus, H., R. McPherson, R. Morss, D. PaiMazumeder, E. Towler, and V. Silvis, 2012: Water decisions for sustainability of the Arbuckle-Simpson aquifer. 2012 Fall Meeting, American Geophysical Union, December 3-7, 2012.
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- AMS, 2011: Final report of the AMS ad hoc Committee on a Nationwide Network of Networks. American Meteorological Society, Boston, MA, 94 pp.
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- OCS, 2011: Oklahoma State Report 2010. In *The State Climatologist*, American Association of State Climatologists, pp. 109-113.
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- CIMMS, 2003: Briefing Book, Review of the Cooperative Institute for Mesoscale Meteorological Studies by NOAA's Science Advisory Board. Prepared for the National Oceanic and Atmospheric Administration. University of Oklahoma, Norman, OK, October 15-16, 2003, 146 pp.
- OCS, 2003: Annual Report for the University of Oklahoma Regents: Oklahoma Climatological Survey Unit Report for 2002, 10 pp.
- Crawford, K. C., R. A. McPherson, and R. L. Elliott, 2002: The Oklahoma Mesonet: Ten years later. Preprints of the 19th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography and Hydrology, American Meteorological Society, Orlando, FL, January 13-17, 2002.
- Basara, J. B., R. A. McPherson, D. S. Arndt, B. G. Illston, M. J. Haugland, C. A. Fiebrich, and K. C. Crawford, 2002: The Oklahoma Mesonet: An Infrastructure for Quantifying Land-Atmosphere Interactions. Mississippi River Climate and Hydrology Conference, American Meteorological Society, May 13, 2002.

- Fiebrich, C. A., and R. A. McPherson, 2002: An examination of the impact of harvested winter wheat fields on summer air temperatures in Oklahoma. Annual Meeting, Association of American Geographers, Los Angeles, CA, March 19–23, 2002.
- McPherson, R. A., 2002: The impact of Oklahoma's winter wheat crop on the mesoscale environment. Preprints of the 16th Conference on Hydrology, American Meteorological Society, Orlando, FL, January 13–17, 2002.
- Oklahoma Climatological Survey, 2000: 50th Oklahoma Legislature, Second Session, 2006 Sunset Review, 14 pp.
- Morris, D. A., K. C. Crawford, H. L. Johnson, R. A. McPherson, M. A. Shafer, and J. M. Wolfinbarger, 2000: OK-FIRST: An innovative information-support system for public safety agencies. Preprints of the Second Symposium on Environmental Applications, American Meteorological Society, Long Beach, CA, 32–37.
- Kloesel, K. A., K. C. Crawford, R. A. McPherson, D. A. Morris, R. Jesuroga, and C. Subramaniam, 2000: Applying environmental data to aid decision making during hazardous weather events. Preprints of the Second Symposium on Environmental Applications, American Meteorological Society, Long Beach, CA, 38–39.
- Kloesel, K.A., K.C. Crawford, R.A. McPherson, D.A. Morris, R. Jesuroga, and C. Subramaniam, 2000: Leveraging the Internet to aid decision making during hazardous weather events. Preprints of the 16th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography and Hydrology, American Meteorological Society, Long Beach, CA, 414–415.
- Oklahoma Climatological Survey, 2000: 47th Oklahoma Legislature, Second Session, 2000 Sunset Review, 10 pp.
- McPherson, R., K. Crawford, J. M. Wolfinbarger, A. D. Melvin, and D. Morris, 1999: From rags to riches – Seven years in the life of a climate office's educational programs. Preprints of the Eighth Symposium on Education, American Meteorological Society, Dallas, TX, January 10–15, 1999.
- Melvin, A. D., and R. McPherson, 1999: The Oklahoma Climatological Survey's new web site for teachers, students, and parents. Preprints of the Eighth Symposium on Education, American Meteorological Society, Dallas, TX, January 10–15, 1999.
- Melvin, A. D., and R. McPherson, 1998: Southern Great Plains Atmospheric Radiation Measurement (ARM) educational outreach program. Preprints of the Seventh Symposium on Education, American Meteorological Society, Phoenix, AZ, January 11–16, 1998.
- Crawford, K.C., D.A. Morris, R.A. McPherson, H.L. Johnson, M.A. Shafer, J.M. Wolfinbarger, and T.W. Hughes, 1998: OK-FIRST: a decision-support system for public safety agencies. Preprints of the 14th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography and Hydrology, American Meteorological Society, Phoenix, AZ, 5–9.
- McPherson, R., and K. Crawford, 1996: The EARTHSTORM project: how teachers can incorporate the latest technology into the classroom. Preprints of the Fourth

- International Conference on School and Popular Meteorological and Oceanographic Education, Royal Meteorological Society and American Meteorological Society, Edinburgh, Scotland, July 22–26, 1996.
- Oklahoma Climatological Survey, 1996: TWISTER™ calendar. Warner Bros. & Transcript Press.
- Crawford, K.C., R.H. Hardy, D.J. Shellberg, and R.A. McPherson, 1995: The annular eclipse of 10 May 1994: atmospheric responses observed by the Oklahoma Mesonet. Ninth Conference Applied Climatology, American Meteorological Society, Dallas, TX.
- McPherson, R., and W. McPherson, Jr., 1994: Dissemination and display of real-time mesonet data in K-12 classrooms. Preprints of the Third Symposium on Education and the 10th International Conference on Interactive Information and Processing Systems for Meteorology, Oceanography and Hydrology, American Meteorological Society, Nashville, TN, January 23–28, 1994.
- Wolfenbarger, M., W. McPherson, R. McPherson, D. Morris, and K. Paine, 1992–1994: WxScope for the Macintosh. (Visualization software.)
- Crawford, K.C., R.A. McPherson, A.L. Cavallo, and S.V. Duca, 1993: The EarthStorm project: using real-time weather data from the Oklahoma Mesonet. Preprints of the Third International Conference on School and Popular Meteorological and Oceanographic Education, American Meteorological Society, Toronto, ON, Canada, 1–6.
- Stadler, S.J., H.L. Johnson, K.C. Crawford, and R.A. McPherson, 1993: Inclusion of climate data in a real-time educational data stream. Preprints of the Eighth Conference on Applied Climatology, American Meteorological Society, Anaheim, CA, 286–288.
- McPherson, W.G., and K.C. Crawford, 1993: Real-time decision making using Oklahoma Mesonet data. Preprints of the 17th Conference on Severe Local Storms, American Meteorological Society, St. Louis, MO, 380–384.
- McPherson, R. A., 1992: Predictability experiments of a numerically modeled supercell storm. CAPS Scientific Report No. 92-001, 128 pp.
- McPherson, R. A., and K. K. Droegemeier, 1991: Numerical predictability experiments of the 20 May 1977 Del City, OK supercell storm. Preprints of the Ninth AMS Conference on Numerical Weather Prediction, Denver, CO, October, 1991.

FUNDED GRANTS, CONTRACTS, AND OTHER AWARDS

I have served as principal investigator (PI) or co-investigator (Co-PI) on the following grants and contracts that total over \$40 million.

2014+	\$2,649,535	South Central Climate Science Center, Co-PI (PI: B. Moore), U.S. Department of the Interior
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2014+	\$450,000	University Strategic Organization, South Central Climate Science Center, Co-PI (PI: B. Moore), University of Oklahoma, Vice President for Research
2014+	\$16,000,000	NSF EPSCoR RII: Enhancing the resilience of socio-economic systems to climate variability in Oklahoma, Science PI, National Science Foundation
2014+	\$3,200,000	NSF EPSCoR RII: Enhancing the resilience of socio-economic systems to climate variability in Oklahoma, Science PI, Oklahoma State Regents for Higher Education
2013	\$4,000,000	NSF EPSCoR RII: Enhancing the resilience of socio-economic systems to climate variability in Oklahoma, Science PI, National Science Foundation
2013	\$800,000	NSF EPSCoR RII: Enhancing the resilience of socio-economic systems to climate variability in Oklahoma, Science PI, Oklahoma State Regents for Higher Education
2013	\$637,305	South Central Climate Science Center, Co-PI (PI: B. Moore), U.S. Department of the Interior
2013	\$150,000	University Strategic Organization, South Central Climate Science Center, University of Oklahoma, Vice President for Research
2013+	\$3,500,000	Southern Climate Impacts Planning Program (SCIPP) Phase II, Co-PI (PI: M. Shafer), U.S. Dept. of Commerce, NOAA Regional Integrated Sciences and Assessments (RISA) Program
2013	\$50,959	Regional Graduate Student, Post-doc, and Early Career Research Workshop, PI, U.S. Geological Survey
2013	\$291,580	Ecosystem Stress Response Function of Climate Change for the Arkansas-Red River Basin, Co-PI (PI: Wayne Kellogg), U.S. Geological Survey
2012	\$250,592	South Central Climate Science Center – Supplement for Internal Funding, Co-PI (PI: B. Moore), U.S. Department of the Interior
2012	\$706,053	South Central Climate Science Center, Co-PI (PI: B. Moore), U.S. Department of the Interior
2012	\$150,000	University Strategic Organization, South Central Climate Science Center, University of Oklahoma, Vice President for Research
2012	\$40,000	Cost Share, South Central Climate Science Center, University of Oklahoma, Vice President for Research
2012	\$67,703	The Impact of Uncertainty Information on Tornado Warning Response, U.S. Dept. of Commerce, NOAA
2012	\$91,926	Water decisions for sustainability in the Arbuckle-Simpson aquifer, National Center for Atmospheric Research
2012	\$43,364	Utilization of Regional Climate Science Programs in Reservoir and Watershed Impact Assessments, U.S. Army Corps of Engineers
2012	\$60,000	Acquiring data from the Oklahoma Mesonet to assist DOE/ARM achieve its scientific objective, PI, Battelle - Pacific Northwest National Laboratory
2012	\$120,000	Operation and maintenance of the USDA-ARS micronets, PI, USDA Agriculture Research Service
2011	\$118,934	Developing standard procedures for filling climatic data gaps for use in building performance monitoring and analysis, Co-PI (PI:

		L. Song), American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)
2011	\$50,000	2011 Choctaw Drought Contingency Plan, Co-PI (PI: Choctaw Nation of Oklahoma), U.S. Bureau of Indian Affairs
2011	\$60,000	Acquiring data from the Oklahoma Mesonet to assist DOE/ARM achieve its scientific objective, PI, Battelle - Pacific Northwest National Laboratory
2011	\$120,000	Operation and maintenance of the USDA-ARS micronets, PI, USDA Agriculture Research Service
2010	\$60,000	Acquiring Data from the Oklahoma Mesonet to Assist DOE/ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2010	\$120,000	Operation and maintenance of the USDA-ARS micronets, PI, USDA Agriculture Research Service
2010	\$19,976	IntelliDrive Mobile Data Collection and Application Demonstration Project, Co-PI, National Center for Atmospheric Research
2010	\$3,000	Monthly Climate Impacts Report for Oklahoma, Co-PI, American Association of State Climatologists
2010	\$99,822	Software and Product Development for Mesonet-Québec, Co-PI, Société de protection des forêts contre les insectes et maladies (SOPFIM)
2009	\$118,902	Quantifying evaporation and effective precipitation across varying seasonal and within-season climatic signals across Oklahoma, co-PI, Oklahoma Water Resources Board
2009	\$120,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, U. S. Department of Agriculture (USDA), Agriculture Research Service
2009	\$50,000	Acquiring Data from the Oklahoma Mesonet to Assist DOE/ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2008	\$130,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, USDA, Agriculture Research Service
2008	\$495,000	Modernization of the Meteorological and Hydrological Services of Croatia, Co-PI, U.S. Trade and Development Agency
2008	\$50,000	Acquiring Data from the Oklahoma Mesonet to Assist DOE/ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2008	\$5,500	OWRB Fittstown Tower Maintenance, Co-PI, Oklahoma Water Resources Board

2007	\$120,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, USDA, Agriculture Research Service
2007	\$50,000	Acquiring Data from the Oklahoma Mesonet to Assist DOE / ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2007	\$5,500	OWRB Fittstown Tower Maintenance, Co-PI, Oklahoma Water Resources Board
2006-11	N / A	Technical Support Indefinite Deliverable / Indefinite Quantity Contract, Principal Investigator, Subcontract through Cambridge Systematics, Inc. for the Federal Highway Administration, U.S. Department of Transportation
2006	\$333,715	The Oklahoma City Urban Micronet Project (OKCNET), Co-PI, OU Vice President of Research
2006	\$120,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, USDA, Agriculture Research Service
2006	\$5,500	OWRB Fittstown Tower Maintenance, Co-PI, Oklahoma Water Resources Board
2006	\$73,374	Scientific Guidance, Research, and Educational Outreach for the ARM CART Southern Great Plains Locale (Year 2), Co-PI, U.S. Department of Energy
2006	\$650,000	Upgrade of the Oklahoma Mesonet and Installation of an Urban Micronet in Oklahoma City, Oklahoma State Regents for Higher Education, Awarded in collaboration with Oklahoma State University
2006	\$381,414	Prototype a Modernized Data Ingest, Quality Assurance, and Monitoring System for NOAA's Environmental Real-Time Observing Network (NERON) – Phase 3, PI, U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration
2005	\$391,812	Clarus Weather System Design, PI, Subcontract to Mixon/Hill, Inc. for U.S. Department of Transportation, Federal Highway Administration
2005	\$342,973	Prototype a Modernized Data Ingest, Quality Assurance, and Monitoring System for NOAA's Environmental Real-Time Observing Network (NERON) – Phase 2, PI, U.S. Department of Commerce, National Oceanic and Atmospheric Administration
2005	\$130,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, USDA, Agriculture Research Service

2005	\$72,727	Scientific Guidance, Research, and Educational Outreach for the ARM CART Southern Great Plains Locale (Year 1), Co-PI, U.S. Department of Energy
2005	\$17,555	Oklahoma Water Resources Board (OWRB) Fittstown Tower Installation, Co-PI, Oklahoma Water Resources Board
2004	\$208,436	Prototype a Modernization Data Ingest and Quality Assurance System for a National Surface Mesonetwork – Phase 1, PI, U.S. Department of Commerce, National Oceanic and Atmospheric Administration
2004	\$50,000	Acquiring Data from the Oklahoma Mesonetwork to Assist DOE / ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2004	\$234,508	Systems Integration and Prototype COOP Operations Management, Co-PI, National Oceanic and Atmospheric Administration
2004	\$71,996	Scientific Guidance, Research, and Educational Outreach for the ARM CART Southern Great Plains Locale, Co-PI, U.S. Department of Energy
2004	\$120,000	Subcontract to Oklahoma State University for Operation and Maintenance of the Little Washita Micronet, PI, USDA, Agriculture Research Service
2003	\$500,000	Mesonet Communications Upgrade, Co-PI, Master Lease Program, Oklahoma State Regents for Higher Education, Awarded in collaboration with Oklahoma State University
2003	\$50,000	Acquiring Data from the Oklahoma Mesonetwork to Assist DOE / ARM Achieve Its Scientific Objective, PI, Battelle - Pacific Northwest National Laboratory
2001	\$258,542	Development of Mesonet-Québec, Sponsored Research Agreement, Co-PI, Ministry of Natural Resources, Province of Québec, Canada
2001	\$100,000	Collaborative Association for Software Development, Sponsored Research Agreement, Co-PI, Weather Decision Technologies
2001	\$100,000	OU Foundation Gift, The Williams Company
2001	\$100,000	Innovations in American Government Award, Ford Foundation
2001	\$49,075	Ozone Monitoring Subcontract, PI, Oklahoma State Department of Environmental Quality
2000	\$72,449	Effects of Oklahoma's Winter Wheat Crop on the Prestorm Environment, PI, National Science Foundation

2000	\$73,848	IM-AWARE: Instructional Meteorology – Applications of Weather for Awareness, Readiness, and Education, Co-PI, National Science Foundation
2000	\$25,450	EPSCoR Mini-Proposal – Year 3, PI, NSF EPSCoR
2000	\$52,833	Academic Equipment Grant, Co-PI, Sun Microsystems, Inc.
1999	\$41,375	EarthStorm U II, PI, Oklahoma EPSCoR Program
1998	\$400,000	ONALERT, Co-PI, National Weather Service Headquarters
1998	\$250,000	OK-SAFE, Co-PI, Oklahoma State Department of Public Safety
1998	\$72,232	EarthStorm U: Extending the Use of and Research with Oklahoma Environmental Data to Faculty from Oklahoma's Two- and Four-Year Colleges, PI, Oklahoma EPSCoR Program
1997	\$40,228	Web Site Development for Earth and Physical Sciences, Geography and Mathematics Education, PI, Oklahoma State Department of Education
1997	\$11,924	Partial Funding of the Oklahoma Mesonet and ARM Summer Teacher Workshops, PI, National Science Foundation – EPSCoR Program
1996	\$16,250	OCS Outreach for K-12, PI, University of Oklahoma Associates
1996	\$549,910	The OK-FIRST Project, Co-PI, U. S. Department of Commerce
1995	\$150,000	Participation in the GLOBE Atmospheric Science Experiment, Co-PI, National Science Foundation
1995	\$88,226	Telecommunications, Technology, and the Environment, PI, Oklahoma State Department of Education
1995	\$25,000	Support for the Operation and Maintenance of the Oklahoma Mesonet, Co-PI, Oklahoma State Department of Transportation
1992	\$766,094	EARTHSTORM (EARTH-system education for Science Teachers using the Oklahoma Regional Mesonet, Co-PI, National Science Foundation
1991	~\$900,000	ARM Educational Support Program, Co-PI, Atmospheric Radiation Monitoring Experiment, ~\$100,000 per year for 10 years

PROPOSALS UNDER REVIEW OR DEVELOPMENT

2013	\$4,000,000	WSC Category 2: Integrated Social and Natural Systems Approach for Sustainability of the Arbuckle-Simpson Watershed, PI, National Science Foundation
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GRADUATE STUDENT MENTORSHIP**Committee Chair**

T. Klemm (Ph.D. in Geography)

A. Cannon (M.A. in Geography)

E. Fagan (M.A. in Geography)

K. Klockow (Ph.D. in Geography; Spatializing Tornado Warning Lead-time: Risk Perception and Response in a Spatio-temporal Framework; defends on August 9, 2013)

K. Klockow (MS in Professional Meteorology; Economic Benefits of the Oklahoma Mesonet to Crop Producers; Aug 2008)

J. Rathke (MS in Meteorology; Modeling Road Pavement Temperatures with Skin Temperature Observations from the Oklahoma Mesonet; Aug 2007)

M. Sturgis (MS in Meteorology; Spatial Coherence of Rainfall Variations using the Oklahoma Mesonet; Aug 2007)

C. Whittier (MS in Meteorology; Quantifying the Influence of Environmental Conditions on the Effect of Winter Wheat; Aug 2007)

K. Tapp (MS in Professional Meteorology; Investigation of the Use of WSR-88D Precipitation Estimates for Near-Real-Time Quality Assurance of Meteorological Surface Network Rainfall Observations; Aug 2007)

Committee Membership

J. Minyon (Ph.D. in Advanced Programs)

J. Okpara-Ejiaku (Ph.D. in Geography)

P. Blanchard (M.A. in Geography)

V. Silvis (Ph.D. in Geography)

I. Lodangco (Ph.D. in Meteorology; Impact of El Niño on Tropical Storms in the Forecast Area of the Philippine National Meteorological Center; passed general exam May 2013)

N. Dilekli (Ph.D. in Geography; Developing an Evaluating a Web-based Emergency Management Spatial Decision Support System; August 2010)

R. Lam (MS in Professional Meteorology; Anomalous Weather Patterns Associated with Extreme Temperatures in Southeast Alaska; May 2010)

C. Fiebrich (Ph.D. in Meteorology; Merging the Historical Climate Archives with Data from Newly Automated Sites—Maintaining Continuity in the Climate Record; May 2007)

Undergraduate Mentorship

C. Lunday (Meteorology; Honors Research Project, 2012-13)

E. Fagan (Meteorology; Undergraduate Research, 2012-13)

C. Martin and E. Rockwell (Meteorology; Capstone Research, 2010-11)

K. Bolognini, D. Sherman, & E. Wardrop (Meteorology; Capstone Research, 2008-09)

J. Dubois and J. Rathke (Meteorology; Capstone Research, 2005-06)

TEACHING

Fall 2013:

GEOG 1114, sec. 020, Introduction to Physical Geography, est. 110 students

Spring 2013:

GEOG 4970, sec. 900, Applied Climatology, 3 students

GEOG 5970, sec. 900, Applied Climatology, 10 students (instruction evaluation: 5 of 5; combined with 4970)

Fall 2012:

GEOG 1114, sec. 020, Introduction to Physical Geography, 106 students (4.03 of 5)

Spring 2012:

GEOG 3890, sec. 003, Applied Climatology, 7 students (4.5 of 5)

Spring 2010 (8-week course):

METR 4803, sec. 100, Applied Climatology, 20 students

METR 5803, sec. 100, Applied Climatology, 1 student

Spring 2009:

METR 4803, sec. 002, Applied Climatology, 8 students (4.63 of 5)

METR 5803, sec. 002, Applied Climatology, 8 students (4.67 of 5)

Spring 2008:

METR 4803, sec. 003, Applied Climatology, 11 students (4.65 of 5)

METR 5803, sec. 003, Applied Climatology, 5 students (4.5 of 5)

INTERNATIONAL EXPERIENCE

In partnership with an OU team, I conducted a needs assessment and feasibility study for the modernization of the national meteorological and hydrological service (Državni hidrometeorološki zavod) of the Republic of Croatia. I was lead author on the final documents and visited DHMZ staff in Zagreb three times during the year-long project. In 2011, the DHMZ sought funding from the World Bank to start the modernization process.

I led the initial partnership development effort between the Oklahoma Mesonet and the Ministère des Ressources Naturelles of the Province of Québec, Canada. The partnership has led to Mesonet-Québec in 2001 and AgWeather Québec (<http://agrometeo.org/>) in 2009.

I participated in the Fourth International Conference on School and Popular Meteorological and Oceanographic Education (July 1996) in Edinburgh, Scotland, shepherding several EarthStorm teachers in their presentations.

HONORS, AWARDS, AND LEADERSHIP ASSIGNMENTS

2013- Member, Student Awards Committee, Department of Geography and Environmental Sustainability

2012- Member, Water Resources Committee, American Meteorological Society

- 2010-13 Member, Commission on the Weather and Climate Enterprise, American Meteorological Society
- 2010- Full Member (State Climatologist), American Association of State Climatologists (AASC)
- 2012-13 Lead Author, Great Plains Chapter, National Climate Assessment, U.S. Global Change Research Program
- 2010-13 Research Affiliate, Southern Climate Impacts Planning Program, University of Oklahoma
- 2010- Member, Weather Enterprise Steering Committee, University of Oklahoma
- 2012 Planning Committee, AMS Summer Community Meeting
- 2012 Planning Committee, All-CSC Meeting, Climate Science Centers
- 2011 Invited Presentation, American Meteorological Society, Town Hall Meeting on the Nationwide Network of Networks, January 26
- 2011 Invited Presentation, Oklahoma Chapter Soil and Water Conservation Society, Annual Meeting, June 10
- 2011 Invited Presentation, American Association of State Climatologists, Annual Meeting, July 22
- 2011 Invited Presentation, American Meteorological Society, Summer Community Meeting, August 11
- 2011 Invited Presentation, Oklahoma Interfaith Power and Light, Town Hall on Global Climate Change, Nov. 16
- 2010- Member, Review Committee, AASC Dissertation Medal for Applied Climatology
- 2010- Subject Matter Expert, Metadata Joint Action Group, Committee for Integrated Observing Systems, Office of the Federal Coordinator of Meteorology
- 2010- Member, Oklahoma Climate Change Partnership
- 2009-11 Member, Artificial Recharge Technical Work Group, State of Oklahoma (Senate Bill 1410)
- 2009-13 Chair, Metadata Working Group, Ad Hoc Committee on the Nationwide Network of Networks, American Meteorological Society
- 2006-10 Member, Surface Transportation/ Intelligent Transportation Systems Committee, American Meteorological Society
- 2005-09 Associate Member, American Association of State Climatologists
- 2004- Adjunct Faculty Representative, Undergraduate Studies Committee, University of Oklahoma, School of Meteorology

- 2004- Fellow, Cooperative Institute of Mesoscale Meteorological Studies, University of Oklahoma
- 2004- Member, Clarus Initiative Coordinating Committee, Federal Highway Administration
- 1992- Member, American Meteorological Society
- 2010 Invited Participant, Knowledge Management Workshop, National Climate Assessment, Reston, VA
- 2010 Invited Participant, Sectoral and Regional Assessments Workshop, National Climate Assessment, Reston, VA
- 2010 Invited Presentation, AMS Summer Community Meeting, State College, PA
- 2010 Invited Presentation, James Kimpel Symposium, Norman, OK
- 2010 Invited Presentation, 8th annual Oklahoma Ground Water Association Conference, Oklahoma City, OK
- 2009 Invited Presentation, Oklahoma Governor's Water Conference, Midwest City, OK
- 2009 Technical Innovation Award for development and implementation of the Sperry-Piltz Ice Accumulation Index, Oklahoma Public Works Association
- 2009 Invited Presentation, American Meteorological Society Summer Community Meeting, Norman, OK
- 2009 Session Moderator, Climate Prediction Applications Science Workshop, Norman, OK
- 2009 Group Co-Chair, National Weather Center Radar Initiative 5-Year Vision planning team
- 2008-09 Mentor, Excellence in Proposals, OU Vice President of Research
- 2006-07 Member, Program Committee, Third National Symposium on Surface Transportation Weather
- 2006 OCS Lead Representative, Sunset Review for H.B. 2150, Senate Sunset Committee, State of Oklahoma, Oklahoma City, OK (March 28, 2006)
- 2006 OCS Lead Representative, Sunset Review for H.B. 2150, House Sunset Committee, State of Oklahoma, Oklahoma City, OK (February 6, 2006)
- 2006 Weather and Society * Integrated Studies (WAS*IS) participant
- 2005 Special Award to the Oklahoma Mesonet for "serving Oklahoma and the meteorological community by providing high-quality data and information used to protect lives, reduce costs, facilitate cutting-edge research, and educate the next generation," American Meteorological Society
- 2004-07 Fellow, Sasaki Institute Policy Program, University of Oklahoma
- 2004-06 Co-chair, Oklahoma Mesonet Steering Committee

- 2004-06 Associate Editor, *Weather and Forecasting*, American Meteorological Society
- 2004 Douglas Lilly Award for Best Ph.D. Publication, School of Meteorology, University of Oklahoma
- 2004 Award of Achievement – Special Publication 2004, OCS Fact Sheets, Oklahoma College Public Relations Association
- 2004 Member, Norman Future Committee, City of Norman, OK
- 2004-05 University of Oklahoma Representative, Diversity Council, Collaborative Adaptive Sensing of the Atmosphere, National Science Foundation Engineering Research Center
- 2003 Summer Policy Colloquium, American Meteorological Society, Washington, DC
- 2003 Invited Presentation, Annual Meeting, U.S. Department of Energy's Atmospheric Radiation Measurement Program
- 2003 Content Expert, Content Advisory Board for Earth Sciences, Oklahoma Subject Area Test
- 2001 Innovations in American Government Award, Winner, Harvard University, OK-First Project
- 2001 Finalist, Stockholm Challenge Award for technology innovation, OK-First Project team
- 2000 Special Award to OCS for its "actions during the May 3, 1999 tornado outbreak," American Meteorological Society
- 2000 OCS Lead Representative, Sunset Review for H.B. 1849, Senate Sunset Committee, State of Oklahoma, Oklahoma City, OK (March 21, 2000)
- 1999 Co-chair, Eighth Symposium on Education, K-12 session, American Meteorological Society
- 1998-99 Chapter President, Central Oklahoma Chapter of the American Meteorological Society
- 1998-99 Chapter President, Central Oklahoma Chapter of the National Weather Association
- 1998 Invited Best Practices (EarthStorm), Results-Based Staff Development for the Middle Grades Consumer's Guide, National Staff Development Council
- 1993-99 Member, Board of School & Popular Meteorological and Oceanic Education, American Meteorological Society
- 1997-99 Member, Instructional Subcommittee on Technology, University of Oklahoma
- 1998 Member, Subcommittee on Microcomputer Purchasing, University of Oklahoma
- 1996-99 Program Committee, Symposia on Education, American Meteorological Society

- 1991 Problem Developer, Meteorological Applied Problem-Solving; University of Oklahoma, Oklahoma City Community College, and Center for Analysis and Prediction of Storms
- 1988 Master's representative, Chairman, Student Affairs Committee, University of Oklahoma
- 1988 Lab instructor, University of Oklahoma Academic Camp, Honors Program, University of Oklahoma
- 1988 The Macelwane Award in Meteorology, First Place, American Meteorological Society; for "University of Wisconsin severe storms intercept project: a study of a weakly forced squall line in Oklahoma"
- 1988 June Bacon-Bercey Scholarship in Atmospheric Sciences for Women, American Geophysical Union
- 1988 Zonta Amelia Earhart Fellowship Award, Zonta International
- 1987 Co-chairman, American Meteorological Society Student Chapter, University of Wisconsin-Madison
- 1986-87 Undergraduate representative, Department of Meteorology, University of Wisconsin-Madison
- 1986 Phi Beta Kappa, University of Wisconsin-Madison
- 1986 Phi Kappa Phi, University of Wisconsin-Madison
- 1985 Golden Key National Honor Society, University of Wisconsin-Madison

PROFESSIONAL ORGANIZATIONS & SERVICE

Member, American Meteorological Society (see committee assignments above)

Member, Association of American Geographers

Member, American Geophysical Union

Member, American Association of State Climatologists

Member, Oklahoma Emergency Management Association

Member, Phi Beta Kappa

I have served as a reviewer for proposals to the National Science Foundation and the Southwest Climate Science Center, for manuscripts submitted to *International Journal of Climatology*, *Weather and Forecasting*, and *Monthly Weather Review*, for draft proposals in OU's Excellence in Proposals program, and for proposals for OU's "Using Technology for the Improvement of Learning" grants.

I served on the Design Committee for OU's Water Research Laboratory (2012-13) as well as on the Planning Committees for the AMS Summer Community Meeting (2012) All-Climate Science Centers Meeting (2012).