Dr. Renee A. McPherson

Associate Professor, Geography and Environmental Sustainability University Director, South Central Climate Science Center The University of Oklahoma

Dr. Renee A. McPherson is Associate Professor of Geography and Environmental Sustainability at the University of Oklahoma and University Director of the South Central Climate Adaptation Science Center. She holds a B.S. in Mathematics and a B.S, M.S., and Ph.D. in Meteorology. Her research includes the societal, ecological, and physical impacts of climate variability and change, regional and applied climatology, and severe local storms. She teaches classes in climatology and physical geography, advises graduate students in their research and education, and mentors undergraduate students who are interested in research opportunities. Formerly, she was State Climatologist of Oklahoma and Acting Director of the Oklahoma Climatological Survey. In January 2019, she received the Charles E. Anderson Award from the American Meteorological Society for her "extraordinary, sustained efforts to broaden participation of traditionally underrepresented individuals in STEM research and education, particularly women and Native Americans." She serves as Lead Author of the Southern Great Plains chapter of the Fifth National Climate Assessment.

(A) **PROFESSIONAL PREPARATION**

University of Wisconsin	Madison, WI	Mathematics & Meteorology with Honors	B.S.	1987
University of Oklahoma	Norman, OK	Meteorology	M.S.	1991
University of Oklahoma	Norman, OK	Meteorology	Ph.D.	2003
Cooperative Institute of	Norman, OK	Scientific Administration/Management	Post-doc 2	2003-2004
Mesoscale Meteorological Studies				

(B) APPOINTMENTS

2017-present	University Director, South Central Climate Adaptation Science Center, Norman, OK
2012-present	Associate Professor, University of Oklahoma (OU), Geography and Environmental
*	Sustainability, Norman, OK
2007-present	Adjunct Associate Professor, OU School of Meteorology, Norman, OK
2015-2016	Co-director, South Central Climate Science Center, Norman, OK
2012-2015	Director of Research, South Central Climate Science Center, Norman, OK
2010-2012	State Climatologist of Oklahoma, University of Oklahoma, Norman, OK
2009; 2004-200	6 Acting Director, Oklahoma Climatological Survey (OCS), Norman, OK
2006-2009; 200	01-2003 Associate Director, OCS, Norman, OK
2003-2006	Adjunct Assistant Professor, OU School of Meteorology, Norman, OK
2003-2004	Asst. Director, Cooperative Institute of Mesoscale Meteorological Studies, Norman, OK
1995-2001	Assistant Director, Oklahoma Climatological Survey, OU, Norman, OK
1992-1995	Program Manager for Project EarthStorm & ARM Educational Outreach, OCS, Norman

(C) **PRODUCTS**

i. Five Most Relevant Products

Bamzai-Dodson, A., A.E. Cravens, A. Wade, and **R.A. McPherson**, 2021: Engaging with stakeholders to produce actionable science: a framework and guidance. *Weather, Climate and Society*, **13**, 1027–1041.

Bertrand, D., and **R.A. McPherson**, 2018: Future hydrologic extremes of the Red River Basin. *Journal of Applied Meteorology and Climatology*, **57**, 1321–1336.

- McPherson, R.A., and Coauthors, 2007: Statewide monitoring of the mesoscale environment: A technical update on the Oklahoma Mesonet. *J. Atmospheric & Oceanic Technology*, **24**, 301–321.
- VanBuskirk, O., P. Ćwik, R.A. McPherson, H. Lazrus, E.R. Martin, C.M. Kuster, and E. Mullens, 2021: Listening to stakeholders: Initiating research on sub-seasonal to seasonal heavy precipitation events in the contiguous U.S. by first understanding what stakeholders need. *Bulletin of the American Meteorological Society*, 102, E1972–E1986.
- Mullens, E., and **R.A. McPherson**, 2019: Quantitative scenarios for future hydrologic extremes in the U.S. Southern Great Plains. *International Journal of Climatology*, **39**, 2659–2676.

ii. Five Other Significant Products

- Adeel, Z., A.M. Alarcón, L. Bakkensen, E. Franco, G.M. Garfin, R.A. McPherson, K. Méndez, M.B. Roudaut, H. Saffari, and X. Wen, 2020: Developing a comprehensive methodology for evaluating economic impacts of floods in Canada. Mexico and the United States. *International Journal of Disaster Risk Reduction*, 50, Nov 2020, 101861.
- Klockow-McClain, K. E., **R.A. McPherson**, and R. Thomas, 2020: Cartographic design for improved decision-making: Trade-offs in uncertainty visualization for tornado threats. *Annuals of the AAG*, **110**, 314–333.
- McPherson, R.A., 2013: High-resolution surface observations for climate monitoring. *Climate Variability: Regional and Thematic Patterns*, A. Tarhule, Ed., InTechOpen, 165-188.
- McPherson, R.A., J. D. Lane, K. C. Crawford, and W. G. McPherson Jr., 2011: A climatological analysis of heatbursts in Oklahoma (1994 2009). *International Journal of Climatology*, **31**, 531-544.
- Rosendahl, D., **R.A. McPherson**, A. Wootten, E. Mullens, J. Blackband, and A. Bryan, 2019: Making sense of local climate projections. *Eos*, 100.

(D) Synergistic Activities

i. Broadening the Participation of Groups Underrepresented in STEM

In January 2019, I was awarded the Charles E. Anderson Award by the American Meteorological Society "for extraordinary, sustained efforts to broaden participation of traditionally underrepresented individuals in STEM research and education, particularly women and Native Americans."

ii. Service to Society in the U.S.

I supervised the development of award-winning software and training programs to serve professionals across Oklahoma, including public safety officials (OK-First). As a result, our team won the *Innovations in American Government Award* from Harvard University and the Ford Foundation in 2001.

iii. Service to the Scientific and Engineering Community

I served as an Observer for the American Association of Geographers at the United Nations Framework Convention on Climate Change in Lima, Peru (2014) and Paris, France (2015).

iv. International Scientific Exchange

As a result of my work helping to plan, implement, and maintain the 100+ station Oklahoma Mesonet, I partnered with Državni Hidrometeorološki Zavod (National Meteorological and Hydrological Service) to conduct a feasibility study for modernizing the weather, climate, hydrological, and environmental services of the Republic of Croatia.

v. Innovations in Teaching and Training

I co-developed a new, online course for university students and governmental managers (federal, tribal, state, municipal) entitled *Managing for a Changing Climate* that includes readings, assignments, role-playing activities, learning games, and 60+ short educational videos. The course has been offered for enrolled students at the University of Oklahoma, Louisiana State University, and the University of Florida, and for domestic and international practitioners as four multi-week short courses.