

Dr. Michael C. Wimberly
University of Oklahoma
Norman, OK, USA

History of Employment

Interim Director, Data Institute for Societal Challenges, University of Oklahoma. 2025-
Associate Director, Data Institute for Societal Challenges, University of Oklahoma. 2024-2025
Professor, Department of Geography and Environmental Sustainability, University of Oklahoma, 2018-
Professor, Department of Natural Resource Management, South Dakota State University, 2011-
Associate Professor, Departments of Geography and Wildlife and Fisheries Sciences, South Dakota State University, 2005-2011 (tenure awarded in 2007)
Senior Scientist, Geospatial Sciences Center of Excellence, South Dakota State University, 2005-2018
Assistant Professor, Warnell School of Forest Resources, University of Georgia, 2001-2005
Ecologist, USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR, July 1999-2001

Degrees

Ph.D., Forest Ecology, Oregon State University, 1999
M.S., Quantitative Resource Management, University of Washington, 1995
B.A., Environmental Science, University of Virginia, 1990

Narrative of Research Experience

My research focuses on geospatial data science at the intersection of environmental change and public health. I develop methods that integrate satellite Earth observations, climate data, and epidemiological information to understand and forecast climate-sensitive health risks, particularly vector-borne diseases such as malaria and West Nile virus.

I have led interdisciplinary teams to translate research into operational decision-support systems, including the EPIDEMIA malaria early warning platform in Ethiopia and the ArboMAP system for West Nile virus forecasting in the United States. My work also addresses urbanization, climate change, and microclimate processes, with applications for heat exposure and environmental health. My projects emphasize scalable analytics, stakeholder collaboration, and real-world impact.

Key Publications (Selected)

Bump, E. R., A. Bharadwaja, S. Simonson, E. Ortega, and M. C. Wimberly. 2025. Integrating wind speed into climate-based West Nile virus models: A comparative analysis in two distinct regions. *GeoHealth*, 9, e2024GH001320.

Jamal, Y., C. C. Murdock, R. K. Baharia, R. Sharma, K. Vaishnav, V. Desai, V. Kohli, A. K. Mohanty, M. Pascual, S. Sharma, A. Anvikar, and M. C. Wimberly. 2025. Spatiotemporal patterns of urban heat in indoor and outdoor microclimates. *Environmental Research Letters*, 20: 114050.

Korah, A., L. Smith, and M. C. Wimberly. 2025. Understanding urban expansion across primary and secondary cities in Ghana. *Habitat International*, 158, 103339.

Nekorchuk, D. M., A. Bharadwaja, S. Simonson, E. Ortega, C. M. B. Franca, E. Dinh, R. Reik, R. Burkholder, and M. C. Wimberly. 2024. The Arbovirus Mapping and Prediction (ArboMAP) system for West Nile virus forecasting. *JAMIA Open* 7: ooad110.

Wimberly, M. C., D. Wanyama, R. Doughty, H. Peiro, and S. Crowell. 2024. Increasing fire activity in African tropical forests is associated with deforestation and climate change. *Geophysical Research Letters*, 51(9), e2023GL106240.

- Brown, J. J., M. Pascual, M. C. Wimberly, L. R. Johnson, and C. C. Murdock. 2023. Humidity – The overlooked variable in the thermal biology of mosquito-borne disease. *Ecology Letters* 26: 1029-1049.
- Teka, H. L. Golassa, G. Medhin, M. Balkew, C. Sisay, E. Gadisa, D. M. Nekorchuk, M. C. Wimberly, and F. G. Tadesse. 2023. Trend analysis of malaria in urban settings in Ethiopia from 2014 to 2019. *Malaria Journal* 22: 235.
- Neta, G., W. Pan, K. Ebi, D. F. Buss, T. Castranio, R. Lowe, S. J. Ryan, A. M. Stewart-Ibarra, L. K. Hapairai, M. Sehgal, M. C. Wimberly, L. Rollock, M. Lichtveld, J. Balbus. 2022. Advancing climate change health adaptation through implementation science. *The Lancet Planetary Health* 6: e909-18.
- Wimberly, M. C., J. K. Davis, M. B. Hildreth, and J. Clayton. 2022. Integrated forecasts based on public health surveillance and meteorological information predict West Nile virus in a high-risk region of North America. *Environmental Health Perspectives* 130(8): 087006.
- Wimberly, M. C., K. M. de Beurs, T. V. Loboda, W. K. Pan. 2021. Satellite observations and malaria: new opportunities for research and applications. *Trends in Parasitology* 37: 525-537.
- Rehr, R. C., C. Bandaragoda, B. F. Zaitchik, and M. C. Wimberly. 2020. A GeoHealth response to a geoscience community climate change position statement. *GeoHealth* 4: e2020GH000265.
- Wimberly, M. C., J. K. Davis, M. V. Evans, A. Hess, P. M. Newberry, N. Solano-Asamoah, and C. C. Murdock. 2020. Land cover affects microclimate and temperature suitability for arbovirus transmission in an urban landscape. *PLoS Neglected Tropical Diseases* 14: e0008614.
- Hess, A., J. K. Davis, and M. C. Wimberly. 2018. Identifying environmental risk factors and mapping the distribution of West Nile virus in an endemic region of North America. *GeoHealth* 2: 395-409.
- Merkord, C. L., Y. Liu, A. Mihretie, T. Gebrehiwot, W. Awoke, E. Bayabil, G. M. Henebry, G. T. Kassa, M. Lake, and M. C. Wimberly. 2017. Integrating malaria surveillance with climate data for outbreak detection and forecasting: the EPIDEMIA system. *Malaria Journal* 16:89.
- Midekisa A., B. Beyene, A. Mihretie, E. Bayabil, M. C. Wimberly. 2015. Seasonal associations of climatic drivers and malaria in the highlands of Ethiopia. *Parasites & Vectors* 8: 339.
- Wimberly, M. C., A. Lamsal, P. Giacomo, and T. Chuang. 2014. Regional variation of climatic influences on West Nile virus outbreaks in the United States. *American Journal of Tropical Medicine and Hygiene* 91: 677-684.
- Wright, C. K., and M. C. Wimberly. 2013. Recent land use change in the western Corn Belt threatens grasslands and wetlands. *Proceedings of the National Academy of Sciences of the United States of America* 110: 4134-4139.

Fellowships and Awards

2024. Superior Research Performance Award, University of Oklahoma College of Atmospheric and Geographic Sciences.
2022. GeoHealth Section Award, American Geophysical Union.
2016. Faculty of Science Visiting Research Fellowship, University of New South Wales.
2015. President's International Fellowship for Visiting Scientists, Chinese Academy of Sciences.
2014. Honorable Mention – Outstanding Paper in Landscape Ecology, United States Chapter of the International Association for Landscape Ecology.
2014. Award for Faculty Engagement in Global Research, South Dakota State University.

Professional Society Memberships

- American Geophysical Union
- American Meteorological Society
- American Society of Tropical Medicine and Hygiene