

ERIKA K. WISE
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EDUCATION

- Ph.D. University of Arizona, Tucson, AZ – Geography and Regional Development, August 2009. Global Change Ph.D. minor; Certificate in Geographic Information Systems.
- M.A. University of Arizona, Tucson, AZ – Geography and Regional Development, May 2004.
- B.S. University of California, Santa Cruz, CA – Earth Sciences (with honors), June 1997.

ACADEMIC POSITIONS

- Professor, Department of Geography, University of North Carolina-Chapel Hill, 2021–present.
- Associate Professor, Department of Geography, University of North Carolina-Chapel Hill, 2016–2021.
- Assistant Professor, Department of Geography, University of North Carolina-Chapel Hill, 2010 – 2016.
- Assistant Professor, Department of Geography, The University of Iowa, 2009 – 2010.

REFEREED PUBLICATIONS

- Wise, E. K. (2021). Sub-Seasonal tree-ring reconstructions for more comprehensive climate records in U.S. West Coast watersheds. *Geophysical Research Letters*, 48, e2020GL091598. <https://doi.org/10.1029/2020GL091598>.
- Gómez, A. M., Serre, M., Wise, E., & Pavelsky, T. (2021). Integrating community science research and space-time mapping to determine depth to groundwater in a remote rural region. *Water Resources Research*, 57, e2020WR029519. <https://doi.org/10.1029/2020WR029519>
- Hernández, A., C. Martin-Puertas, P. Moffa-Sánchez, E. Moreno-Chamarro, P. Ortega, S. Blockley, I. Cacho, K. Cobb, L. Comas-Bru, S. Giralt, H. Goosse, J. Luterbacher, B. Martrat, R. Muscheler, A. Parnell, S. Pla-Rabes, J. Sjolte, A. Scaife, D. Swingedouw, E.K. Wise, G. Xu. 2020. Modes of climate variability: Synthesis and review of proxy-based reconstructions through the Holocene. *Earth-Science Reviews*, 209, 103286, <https://doi.org/10.1016/j.earscirev.2020.103286>.
- Martin, J., G.T. Pederson C.A. Woodhouse, E.R. Cook, G. McCabe, K. J. Anchukaitis, E.K. Wise, P.J. Erger, L.S. Dolan, M. McGuire, S. Gangopadhyay, K.J. Chase, J.S. Littell, S.T. Gray, S. St. George, J.M. Friedman, D.J. Sauchyn, J. St. Jacques, and J.C. King. 2020. Increased drought severity tracks warming in the United States' largest river basin. *Proceedings of the National Academy of Sciences*, 117 (21), 11328-11336, doi: 10.1073/pnas.1916208117.
- Dannenberg, M.P., C. Song, E.K. Wise, N. Pederson, & D.A. Bishop. 2020. Delineating environmental stresses to primary production of U.S. forests from tree rings: Effects of climate seasonality, soil, and topography. *Journal of Geophysical Research – Biogeosciences*, 125, e2019JG005499, doi:10.1029/2019JG005499.
- Woodhouse, C.A. and E.K. Wise. 2020. The changing relationship between the upper and lower Missouri River basins during drought. *International Journal of Climatology*, doi: 10.1002/joc.6502.
- Dannenberg, M.P., E.K. Wise, and W.K. Smith. 2019. Reduced tree growth in the semiarid United States due to asymmetric responses to intensifying precipitation extremes. *Science Advances*, 5(10), doi: 10.1126/sciadv.aaw0667.

- Martin, J., G.T. Pederson C.A. Woodhouse, E.R. Cook, G. McCabe, E.K. Wise, P.J. Erger, L.S. Dolan, M. McGuire, S. Gangopadhyay, K.J. Chase, J.S. Littell, S.T. Gray, S. St. George, J.M. Friedman, D.J. Sauchyn, J. St. Jacques, and J.C. King. 2019. 1200 years of Upper Missouri River streamflow reconstructed from tree rings. *Quaternary Science Reviews*, 224, doi: 10.1016/j.quascirev.2019.105971.
- Wise, E.K and M.P. Dannenberg. 2019. Climate factors leading to asymmetric extreme capture in the tree-ring record. *Geophysical Research Letters*, 46: 3408-3416, doi: 10.1029/2019GL082295.
- Wise, E.K., C.A. Woodhouse, G. McCabe, G. Pederson, J. St-Jacques. 2018. Hydroclimatology of the Missouri River Basin, *Journal of Hydrometeorology*, 19 (1), 161–182.
- Dannenberg, M.P., Wise, E.K., Janko, M., Hwang, T., Smith, W.K. 2018. Atmospheric teleconnection influence on North American land surface phenology. *Environmental Research Letters*, 13 (034029), doi: 10.1088/1748-9326/aaa85a.
- Wise, E. K. and M. P. Dannenberg. 2017. Reconstructed storm tracks reveal three centuries of changing moisture delivery to North America, *Science Advances*, 3 (6), e1602263, doi:10.1126/sciadv.1602263.
- Dannenberg, M. P. and E. K. Wise. 2017. Shifting Pacific storm tracks as stressors to ecosystems of western North America. *Global Change Biology*, doi:10.1111/gcb.13748.
- Wise, E.K. 2016. Five centuries of U.S. West Coast drought: Occurrence, spatial distribution, and associated atmospheric circulation patterns. *Geophysical Research Letters*, 43, doi:10.1002/2016GL068487.
- Gray, C. and E. Wise. 2016. Country-specific effects of climate variability on human migration. *Climatic Change*, doi: 10.1007/s10584-015-1592-y.
- Dannenberg, M.P. and E.K. Wise. 2016. Seasonal Climate Signals from Multiple Tree-Ring Metrics: A Case Study of *Pinus ponderosa* in the Upper Columbia River Basin. *Journal of Geophysical Research Letters – Biogeosciences*, 121, doi:10.1002/2015JG003155.
- McAfee, S. and E.K. Wise. 2016. Intra-seasonal and inter-decadal variability in ENSO on impacts on the Pacific Northwest. *International Journal of Climatology*, 36(1): 508-516.
- Wise, E.K. M.L. Wrzesien, M.P. Dannenberg, and D.L. McGinnis. 2015. Cool-Season Precipitation Patterns Associated with Teleconnection Interactions in the United States. *Journal of Applied Meteorology and Climatology*, 54(2): 494-505.
- Dannenberg, M.P., C. Song, T. Hwang, and E.K. Wise. 2015. Empirical evidence of El Niño—Southern Oscillation influence on land surface phenology and productivity in the western United States. *Remote Sensing of Environment*, 159(2015): 167-180.
- Wise, E.K. 2015. Tropical Pacific and Northern Hemisphere Influences on Reconstructions of the Pacific Decadal Oscillation. *International Journal of Climatology*, 35(1): 154-160.
- Wise, E.K. and M.P. Dannenberg. 2014. Persistence of pressure patterns over North America and the North Pacific since AD 1500. *Nature Communications*, 5:4912, doi: 10.1038/ncomms5912
- Dannenberg, M.P. and E.K. Wise. 2013. Performance of climate field reconstruction methods over multiple seasons and climate variables. *Journal of Geophysical Research - Atmospheres*, 118 (17), 9595-9610; doi: 10.1002/jgrd.50765.
- Wise, E.K. 2012. Hydroclimatology of the US Intermountain West. *Progress in Physical Geography*, 36 (4): 458-479.
- Wise, E.K. 2012. Clean Air Act, U.S. In *Encyclopedia of Global Warming and Climate Change*, 2nd edition, Philander, S.G. (ed). SAGE Publications: Thousand Oaks, CA.
- Wise, E.K. 2011. Incorporating climatological techniques to improve tree-ring site selection in complex terrain. *Tree-Ring Research* 67 (1): 51-56.
- Wise, E.K. 2010. Tree ring record of streamflow and drought in the upper Snake River. *Water Resources Research* 46 (W11529): doi:10.1029/2010WR009282.
- Wise, E.K. 2010. Climate–streamflow linkages in the north-central Rocky Mountains: Implications for a changing climate. *Annals of the Association of American Geographers* 100 (4): 806-817.

- Wise, E.K. 2010. Spatiotemporal variability of the precipitation dipole transition zone in the western United States. *Geophysical Research Letters*, 37 (L07706), doi:10.1029/2009GL042193.
- Wise, E.K. 2009. Climate-based sensitivity of air quality to climate change scenarios for the southwestern United States. *International Journal of Climatology* 29 (1): 87-97.
- Wise, E.K. 2008. Meteorologically influenced wildfire impacts on urban particulate matter and visibility in Tucson, Arizona, USA. *International Journal of Wildland Fire* 17 (2): 214-223.
- Tamerius, J., E.K. Wise, C.K. Uejio, A. McCoy, and A.C. Comrie. 2007. Climate and human health: Synthesizing environmental complexity and uncertainty. *Stochastic Environmental Research & Risk Assessment* 21 (5): 601-613.
- Wise, E.K. and A.C. Comrie. 2005. Meteorologically adjusted urban air quality trends in the southwestern United States. *Atmospheric Environment* 39 (16): 2969-2980.
- Wise, E.K. and A.C. Comrie. 2005. Extending the Kolmogorov-Zurbenko filter: Application to ozone, particulate matter, and meteorological trends. *Journal of the Air and Waste Management Association* 55 (8): 1208-1216.

MAJOR GRANTS & AWARDS

- National Science Foundation: *Collaborative Research: Multi-Century Perspectives on Current and Future Flow in the Lower Missouri River Basin*, 2020-2023, \$581,487
- Ellen Mosley-Thompson Best Publication Award, Paleoenvironmental Change Specialty Group, Association of American Geographers, 2018
- National Science Foundation: *Collaborative Research: High Frequency Hydroclimate Extremes and Synoptic Climate Drivers in Western North America at the End of the Little Ice Age*, 2018-2022, \$454,808
- National Science Foundation: *Collaborative Research: Multi-Site Paleo-Reconstruction of Missouri River Streamflows from Tree Ring Data*, 2014-2018, \$553,435
- National Science Foundation: *Detection of long-term variability in storm tracks using seasonally resolved tree-ring isotope records: Implications for hydroclimatic change in the U.S. Pacific Northwest*, 2013-2017, \$639,945
- National Science Foundation: *Synoptic Dendroclimatology: Using Tree Rings to Reconstruct the Driving Forces of Hydroclimatic Variability in the Western USA*, 2011-2015, \$251,290
- John Russell Mather Paper of the Year Award, Climate Specialty Group, Association of American Geographers, 2015

TEACHING & ADVISING (summary)

- Courses taught: Climate Change and the Media (FYS), Narrating Climate Change (FYS), The Blue Planet, Applied Climatology, Climate Change, Communicating Geography, Making Your Research Matter, Graduate Seminars on: the IPCC reports; Science Communication; Climate Change Workshop; Data & Dendro.
- Advisor for five PhD students; supervised seven Graduate Research Assistants and eleven Undergraduate Research Assistants.
- Faculty Mentor Trainee, TEAM ADVANCE program, UNC's NSF-funded program to promote access to equitable, intersectionality-informed mentoring for women in STEM fields, 2019-2020.
- IMPACTS (Inspiring Meaningful Programs and Communication Through Science) training fellow, Morehead Planetarium & Science Center, 2019-2020.
- UNC Johnston Scholars Faculty Mentor (2017-2021).

TEACHING-RELATED GRANTS

Integrated First Year Seminar Program Course Development Grant for new interdisciplinary team course, Quality Enhancement Plan Integrated Curricula Committee, UNC-CH, 2017, \$10,000.

Faculty International Travel Award, Center for European Studies, 2017, \$1000.

Global Partnership Award, Global Relations Office, University of North Carolina, 2017, \$1500.

King's College London Fund for the UNC/KCL Graduate Workshop in Geography, Institute for the Arts and Humanities, University of North Carolina, 2017, \$5600.

The Finish Line Project course redesign grant, research and practice to help first-generation college students succeed, Office of Undergraduate Education, UNC-CH, 2016, \$500.

Greenlaw 101 Project Participant Award, pilot study for UNC's first interactive general purpose classroom, Center for Faculty Excellence, UNC-CH, 2015.

Graduate Research Consultant Awards (9 Awards), Office for Undergraduate Research, UNC-CH.

PROFESSIONAL SERVICE (summary)

SERVICE TO DISCIPLINE

Mel Marcus Award Committee Member & Grant Proposal Reviewer, American Association of Geographers, 2017-present (2021-2022, Chair).

Invited Panelist, National Science Foundation, proposal review panel, 2017, 2019, 2021.

Judge, Climate Specialty Group Student Paper Competition, Association of American Geographers, April 2019.

Expert Advisory Panel, Controlled vocabularies for datasets on paleoclimate variables, The World Data Center for Paleoclimatology, NOAA-NCEI, 2017.

Judge, Evelyn L. Pruitt National Fellowship for Dissertation Research competition, Society of Woman Geographers, 2016, 2017, 2018, 2020.

Selection Committee, Climate Specialty Group Paper of the Year Award, American Association of Geographers (AAG), February 2016.

Liaison and Judge, Outstanding Student Paper Awards, Annual Meeting of the American Geophysical Union, 2015 and 2017.

Observer, American Association of Geographers delegation to the United Nations Framework Convention on Climate Change (UNFCCC) Conference of the Parties (COP21), Paris, France, 2015.

Reviewer for 37 journals, 5 book publishers, 10 National Science Foundation programs, the National Geographic Society, Natural Sciences and Engineering Research Council of Canada, Natural Environment Research Council of the UK, the German Research Foundation, and the U.S. Geological Survey.

SERVICE WITHIN UNC

Director, GISc Graduate Certificate Program, Department of Geography, University of North Carolina at Chapel Hill, 2020-present.

Co-Leader, Carolina Climate Change Scientist interdisciplinary UNC faculty research group, 2013-present.

Natural Sciences subcommittee proposal reviewer, Summer Undergraduate Research Fellowship (SURF) program, Office for Undergraduate Research, University of North Carolina at Chapel Hill, 2020-2021.

Distinguished Dissertation Award Committee Member, Graduate School, UNC-CH, 2013-2015

Committees, Department of Geography, UNC-CH: Graduate Awards (2014-2017, 2019-2020), Undergraduate Program (2010-2011, 2019), Colloquium (2011, Chair), Diversity (2016-2017; 2018, Chair), Merit (2016; 2017, Chair), Graduate Program (2011-2016) Geovisualization & Technology (2020-present, Chair).