

QI S. HU

School of Natural Resources, and
Department of Earth and Atmospheric Sciences
703 Hardin Hall, University of Nebraska-Lincoln
Lincoln, Nebraska 68583-0987
Phone: (402) 474-3721, Fax: (402) 474-3721
E-mail: qihu@unl.edu

Professional Preparation

- Ph.D. 1992 Atmospheric Science, Colorado State University.
Dissertation: *Low-Frequency Oscillations in Radiative-Convective Models*
- M.S. 1986 Atmospheric Science, Colorado State University.
Thesis: *Explosive Cyclogenesis in the Lee of the Rocky Mountains*
- B.S. 1982 Meteorology, Lanzhou University, China.
Thesis: *Thermodynamic Effects of the Tibetan Plateau on Atmospheric Circulations in Eastern Northern Hemisphere*

Appointments

- 2009-present, Full Professor, School of Natural Resource and Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska
- 2013, Program leader of Applied Climate Science, School of Natural Resource, UNL
- 2003-2009, Associated Professor, School of Natural Resource and Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska
- 1999-2003, Assistant Professor, School of Natural Resource and Department of Earth and Atmospheric Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska
- 1995-1999, Research Assistant Professor, Department of Soil and Atmospheric Sciences, University of Missouri-Columbia, Columbia, Missouri
- 1995-1999, Director, Missouri Climate Center, Columbia, Missouri
- 1995-1999, Missouri State Climatologist, Columbia, Missouri
- 1994-1995, Research Scientist, Department of Environmental Sciences, Pacific Northwest National Laboratories, Richland, Washington
- 1992-1994, Post-Doctoral Research Scientist, Atmospheric Sciences Research Center, State University of New York-Albany, Albany, New York

Products – Refereed journal publications

- 1) Achugbu, I.C., L. Chen, and **Q. Hu**, 2025: Different effects of irrigation in dry and wet years in the U.S. Great Plains. *J. Climate* (accepted)
- 2) Xu, S., **Q. Hu**, and G. Luo, 2025: Evaporated water in Central Asia: Contribution to precipitation and drought mitigation. *J. Hydrology* (in review)
- 3) Ling, Q., G. Luo, and **Q. Hu**, 2025: Irrigation exacerbates the dryness of dry climate. *Climatic Change* (in review)
- 4) Achugbu, I.C., L. Chen, **Q. Hu**, and F. Muñoz-Arriola, 2025: Evaluating the historical performance and future change of extreme precipitation indices over the Missouri River

- Basin based on NA-CORDEX multimodel ensemble. *Atmosphere*, 16, 579, <https://doi.org/10.3390/atmos16050579>
- 5) **Hu, Q.**, I.C. Achugbu, and L. Chen, 2024: Irrigation effects on regional circulation and climate in the U.S. Great Plains: A case study. *J. Climate*, <https://doi.org/10.1175/JCLI-D-23-0717.1>
 - 6) Huang, R., X. Chen, **Q. Hu**, S. Jiang, J. Dong, 2023: Impacts of altitudinal ecohydrological dynamic changes on water balance under warming climate in a watershed of the Qilian Mountains, China. *Science of the Total Environment*, <https://doi.org/10.1016/j.scitotenv.2023.168070/>
 - 7) Ling, Q., X. Yuan, **Q. Hu**, F. Ochege, L. Edwin, H. He, B. Chen, G. Hou, and G. Luo, 2023: Temperature change in the Tianshan Mountains and its external drivers. *Atmospheric Research*, 294, 106972, <https://doi.org/10.1016/j.atmosres.2023.106972>
 - 8) **Hu, Q.**, Z. Han, and S. Wang, 2022: Cloud radiative effects on MJO development in DYNAMO. *J. Climate*, 35, 3363-3378, <https://doi.org/10.1175/JCLI-D-21-0882.1>
 - 9) **Hu, Q.**, and Z. Han, 2022: Northward expansion of desert climate in Central Asia in recent decades. *Geophysical Research Letters*, 49, e2022GL098895, <https://doi.org/10.1029/2022GL098895> (findings were reported in journal *Nature: Climate change is turning more of Central Asia into desert*. 16 June 2022 <https://www.nature.com/articles/d41586-022-01667-2>)
 - 10) Wang, J., X. Chen, M. Gao, **Q. Hu**, and J. Liu, 2022: Changes of nonlinearity and stability of streamflow recession characteristics under climate warming in a large-glaciated basin of the Tibetan Plateau. *Hydrology and Earth System Sciences*, 26, 3901–3920. <http://doi.org/10.5194/hess-26-3901-2022>
 - 11) Wang, J., X. Chen, J. Liu, and **Q. Hu**, 2021: Changes of precipitation–runoff relationship induced by climate variation in a large-glaciated basin of the Tibetan Plateau. *J. Geophys. Res. - Atmos.*, 126, e2020JD034367. <https://doi.org/10.1029/2020JD034367>.
 - 12) Wang, X., G. Yin, Z. Hu, D. He, Q. Cui, X. Feng, Z. Teng, **Q. Hu**, J. Li, and Q. Zhou, 2021: Dynamical variations of the global COVID-19 pandemic based on a SEICR disease model: A new approach of Yi Hua Jie Mu. *GeoHealth*, 5, <https://doi.org/10.1029/2021GH000455>.
 - 13) **Hu, Q.**, and G. Limpert, 2021: Lift in the vertical shear of southerly jet embedded in a uniform westerly flow. *Quart. J. Royal Meteor. Soc.*, 147, 1584-1605. <https://doi.org/10.1002/QJ.3982>.
 - 14) Li, X., **Q. Hu**, R. Wang, D. Zhang, and Q. Zhang, 2021: Influences of the timing of extreme precipitation on floods in the Poyang Lake basin, China. *Hydrology Research*, 52, 26-42. <https://doi.org/10.2166/nh.2021.078>.
 - 15) Wang, J., X. Chen, **Q. Hu**, J. Liu, 2020: Response of terrestrial water storage to climate variation in the Tibetan Plateau. *J. Hydrology*. doi.org/10.1016/j.jhydrol.2020.124652.
 - 16) Dong, B., J.D. Lenters, **Q. Hu**, C.J. Kucharik, T. Wang, M.E. Soylu, and P.M. Mykleby, 2020: Seasonal to decadal variability and change in the surface water balance of the central U.S. from 1984-2007. *J. Hydrometeorology*. doi.org/10.1175/JHM-D-19-0050.1.
 - 17) Li, X., **Q. Hu**, and R. Wang, 2020: Response of rainfall erosivity to changes in extreme precipitation in the Poyang Lake basin, China. *J. Soil and Water Conservation* 75, 537-548. <https://doi.org/10.2489/jswc.2020.00203>.
 - 18) Huang, R., X. Chen, and **Q. Hu**, 2019: Changes in vegetation and surface water balance at basin-scale in central China with rising atmospheric CO₂. *Climatic Change*. doi.org/10.1007/s10584-019-02475-w.

- 19) Li, X., and **Q. Hu**, 2019: Spatiotemporal changes in extreme precipitation and its dependence on topography over the Poyang Lake basin, China. *Advances in Meteorology*. doi.org/10.1155/2019/1253932.
- 20) Qiu, N., X. Chen, **Q. Hu**, J. Liu, R. Huang, and M. Gao, 2018: Hydro-stochastic interpolation coupling with Budyko approach for spatial prediction of mean annual runoff. *Hydrology and Earth System Sciences*, 22, 2891-2901. <https://doi.org/10.5194/hess-22-2891-2018>
- 21) **Hu, Q.**, J.A. Torres-Alavez, and M. Van Den Broeke, 2018: Land-cover change and the “Dust Bowl” drought in the U.S. Great Plains. *J. Climate*, 31, 4657-4667. <https://doi.org/10.1175/JCLI-D-17-0515.1>.
- 22) Chen, X., S. Wang, Z.Y. Hu, Q. Zhou, and **Q. Hu**, 2018: Spatiotemporal characteristics of seasonal precipitation and their relationships with ENSO in Central Asia during 1901-2013. *J. Geographical Sci.*, 28, 1341-1368, <https://doi.org/10.1007/s11442-018-1529-2>.
- 23) Amuti, T., G. Luo, G. Yin, **Q. Hu**, and E. Walter-Shea, 2018: Evaluation of a process-based agro-ecosystem model (Agro-IBIS) for maize in Xinjiang, Northwest China. *Agronomy*. <https://doi.org/10.3390/agronomy8030029>.
- 24) Li, X., Q. Zhang, **Q. Hu**, D. Zhang, and X. Ye, 2017: Lake flooding sensitivity to the relative timing of peak flows between the upstream and downstream waterways: A case study of the Poyang Lake, China. *Hydrol. Proc.*, 31, 4217-4228.
- 25) Van Den Broeke, M., A. Kalin, J.A. Torres, R. Oglesby, and **Q. Hu**, 2017: A warm-season comparison of WRF coupled to the CLM4.0, Noah-MP, and Bucket hydrology land surface schemes over the central United States. *J. Theor. Appl. Climatol.*, 134, 801–816. <https://doi.org/10.1007/s00704-017-2301-8>.
- 26) Qiu, Y., **Q. Hu**, and C. Zhang, 2017: WRF simulation and downscaling of local climate in central Asia. *Int. J. Climatology*. <https://doi.org/10.1002/joc.5018>.
- 27) Hu, Z.Y., **Q. Hu**, C. Zhang, X. Chen, and Q. Li, 2016: Evaluation of reanalysis, spatially interpolated, and satellite remotely sensed precipitation datasets in Central Asia. *J. Geophys. Res. -Atmos.*, 121, 5648–5663. <https://doi.org/10.1002/2016JD024781>.
- 28) Chen, Y., **Q. Hu**, Y. Yang, and W. Qian, 2016: Anomaly-based analysis of extreme heat events in eastern China using reanalysis data and model predictions. *Int. J. Climatology*. <https://doi.org/10.1002/joc.4724>.
- 29) **Hu, Q.**, and Veres, M.C., 2016: Atmospheric responses to North Atlantic SST anomalies in idealized experiments. Part II: North American precipitation. *J. Climate*, 29, 659-671. <https://doi.org/10.1175/JCLI-D-14-00751.1>.
- 30) Veres, M.C., and **Q. Hu**, 2015: Atmospheric responses to North Atlantic SST anomalies in idealized experiments. Part I: Northern Hemispheric circulation. *J. Climate*, 28, 6204-6220. <https://doi.org/10.1175/JCLI-D-14-00413.1>.
- 31) Wu, Q., and **Q. Hu**, 2015: Atmospheric circulation processes contributing to a multidecadal variation in reconstructed and modeled Indian monsoon precipitation. *J. Geophys. Res. - Atmos.*, 120, 532–551, <https://doi.org/10.1002/2014JD022499>.
- 32) Qian, W., Y. Chen, M. Jiang, and **Q. Hu**, 2015: An anomaly-based prediction method for spring and autumn low temperature events in the mid- to lower-Yangtze River valley, China. *J. Appl. Meteor. Climatol.*, 54, 1216-1233.
- 33) Hu, Z.Y., C. Zhang, **Q. Hu**, and H. Tian, 2014: Temperature changes in central Asia from 1979-2011 based on multiple datasets. *J. Climate*, 27, 1143-1167.

- 34) Yang, C., X. Chen, R. Zhang, **Q. Hu**, Z. Yu, Z. Hao, and Z. Lin, 2014: Characteristics of flood and drought events of the last half millennium in Huaihe River Basin. *Advances in Water Sciences*, 25, 503-510.
- 35) Feng, S., **Q. Hu**, W. Huang, C. Ho, R. Li, and Z. Tang, 2014: Projected climate regimes shift under future global warming from multi-model, multi-scenarios CMIP5 simulations. *Global and Planetary Change*, 112, 41-52.
- 36) Maloney, E.D., S.J. Camargo, E. Chang, B. Colle, R. Fu, K.L. Geil, **Q. Hu**, et al. 2014: North American Climate in CMIP5 Experiments. Part III: Assessment of 21st century projections. *J. Climate*, 27, 2230-2270.
- 37) Sheffield, J., S.J. Camargo, R. Fu, **Q. Hu**, et al., 2013: North American climate in CMIP5 experiments. Part II: Evaluation of 20th century intraseasonal to decadal variability. *J. Climate*, 26, 9247-9290.
- 38) Sheffield, J., A. Barrett, B. Colle, R. Fu, K.L. Geil, **Q. Hu**, et al., 2013: North American climate in CMIP5 experiments. Part I: Evaluation of 20th century continental and regional climatology. *J. Climate*, 26, 9209-9245.
- 39) Veres, M.C., and **Q. Hu**, 2013: AMO-forced regional processes affecting summertime precipitation variations in the Central United States. *J. Climate*, 26, 276-290.
- 40) Feng, S., **Q. Hu**, Q. Wu, and M.E. Mann, 2013: A gridded reconstruction of warm season precipitation for Asia spanning the past half millennium. *J. Climate*, 26, 2192-2204.
- 41) Guo, H., **Q. Hu**, Q. Zhang, and Y. Wang, 2012: Annual variations in climatic and hydrological processes and related flood and drought occurrences in the Poyang Lake basin, China. *ACTA Geographica Sinica*, 67, 699-709.
- 42) **Hu, Q.**, and S. Feng, 2012: AMO- and ENSO-driven summertime circulation and precipitation variations in North America. *J. Climate*, 25, 6477-6495.
- 43) Guo, H., **Q. Hu**, Q. Zhang, and S. Feng, 2012: Effects of the Three Gorges Dam on Yangtze River flow and river interaction with the Poyang Lake, China: 2003-2008. *J. Hydrology*, v. 416-417, 19-27.
- 44) Chen, X., Y. Huang, M. Ling, **Q. Hu**, and B. Liu, 2012: Numerical modeling of groundwater recharge and its implication in water cycles of two interdunal valleys in the Sand Hills of Nebraska. *Physics and Chemistry of the Earth*, v. 53-54, 10-18, doi:10.1016/j.pce.2011.08.022.
- 45) Oglesby, R.J., S. Feng, **Q. Hu**, and C. Rowe, 2012: The role of the Atlantic Multidecadal Oscillation on Medieval drought in North America: Synthesizing results from proxy data and climate models. *Global and Planetary Change*, v. 84-85, 56-65.
- 46) Feng, S., C.-H. Ho, **Q. Hu**, R.J. Oglesby, S.J. Jeong, and B.-M. Kim, 2012: Evaluating observed and projected future climate changes for the Arctic using the Köppen-Trewartha climate classification. *Climate Dynamics*, 38, 1359-1373, DOI 10.1007/s00382-011-1020-6.
- 47) **Hu, Q.**, S. Feng, and R.J. Oglesby, 2011: Variations in North American summer precipitation driven by the Atlantic Multidecadal Oscillation. *J. Climate*, 24, 5555-5570.
- 48) Guo, H., **Q. Hu**, and Q. Zhang, 2011: Changes in hydrological interactions of the Yangtze River and the Poyang Lake in China: 1957-2008. *ACTA Geographica Sinica*, 66, 609-618.
- 49) Oglesby, R.J., S. Feng, **Q. Hu**, and C. Rowe, 2011: Medieval drought in North America: The role of the Atlantic Multidecadal Oscillation. *PAGES News*, 19, 18-20.
- 50) Ye, X.C., Q. Zhang, L. Bai, and **Q. Hu**, 2010: A modeling study of sensitivity of the Poyang Lake recharge to climate change in China. *Quaternary International*, 244, 221-229.

- 51) Feng, S., **Q. Hu**, and R.J. Oglesby, 2010: Influence of Atlantic sea surface temperature on persistent drought in North America. *Climate Dynamics*, 34, DOI:10.1007/s00382-010-0835-x.
- 52) PytlikZillig, L.M., **Q. Hu**, K.G. Hubbard, G.D. Lynne, and R.H. Bruning, 2010: Improving farmers' perception and use of climate predictions in farming decisions: A transition model. *J. Appl. Meteor. Climatol.*, 49, 1333-1340.
- 53) Guo, H., M. Xu, and **Q. Hu**, 2010: Changes in near-surface winds in China, 1962-2005. *Int. J. Climatol.*, 30, DOI:10.1002/joc.2091.
- 54) **Hu, Q.**, and S. Feng, 2010: Influence of the Arctic Oscillation on Central U.S. summer rainfall. *J. Geophys. Res. – Atmos.*, 115, D01102, doi:10.1029/2009JD011805.
- 55) **Hu, Q.**, Z.N. Liang, and M.W. Hoffman, 2009: Detecting source regions of wave activities in the tropical atmosphere by applying beamforming to interpolated data grids. *J. Atmos. Oceanic Tech.*, 26, 270-280.
- 56) Guo, H., **Q. Hu**, and T. Jiang, 2008: Annual and seasonal streamflow responses to climate and land-cover changes in Poyang Lake basin, China. *J. Hydrology*, 355, 106-122.
- 57) Aebly, F.A., **Q. Hu**, and S.C. Fritz, 2008: Alternative indices for summer season NAO and precipitation variability in West Greenland. *J. Climate*, 21, 532-541.
- 58) Feng, S., R. Oglesby, C. Rowe, D. Loope, and **Q. Hu**, 2008: Pacific and Atlantic SST influences on Medieval drought in North America simulated by Community Atmospheric Model. *J. Geophys. Res. – Atmos.*, 113, D11101, doi:10.1029/2007JD009347.
- 59) Feng, S., and **Q. Hu**, 2008: How the North Atlantic multidecadal oscillation may have influenced the Indian summer monsoon during the past two millennia. *Geophys. Res. Lett.*, 35, L01707, doi:10.1029/2007GL032484.
- 60) **Hu, Q.**, and S. Feng, 2008: Variation of the North American summer monsoon regimes and the Atlantic Multidecadal Oscillation. *J. Climate*, 21, 2371-2383.
- 61) Chen, X., J. Wu, and **Q. Hu**, 2008: Simulation of climate change impacts on streamflow in the Bosten Lake basin using an artificial neural network model. *J. Hydrol. Eng.*, 13, 180-183.
- 62) **Hu, Q.**, S. Feng, H. Guo, and T. Jiang, 2007: Interactions of the Yangtze River flow and the hydrologic processes of the Poyang Lake, China. *J. Hydrology*, 347, 90-100.
- 63) **Hu, Q.**, and S. Feng, 2007: Decadal variation of the southwest U.S. summer monsoon circulation and rainfall in a regional model. *J. Climate*, 20, 4702-4716.
- 64) Feng, S., and **Q. Hu**, 2007: Changes in winter snowfall/precipitation ratio in the contiguous United States. *J. Geophys. Res.- Atmos.*, 112, D15109, doi:10.1029/2007JD008397.
- 65) Feng, S., S. Nadarajah, and **Q. Hu**, 2007: Modeling extreme precipitation in China using the generalized extreme value distribution. *J. Meteor. Soc. Japan*, 85, 599-613.
- 66) Amundson, J.L., T.L. Mader, R.J. Rasby, and **Q. Hu**, 2006: Environmental effects on pregnancy rate in beef cattle. *J. Animal Sci.*, 84, 3415-3420.
- 67) **Hu, Q.**, A. Weiss, S. Feng, and P.S. Baenziger, 2006: Earlier winter wheat heading dates and warmer spring in the Great Plains of the United States. *Agri. Forest Meteorol.* 135, 284-290.
- 68) **Hu, Q.**, L.M. PytlikZillig, G.D. Lynne, K.G. Hubbard, W.J. Waltman, M.J. Hayes, A.J. Tomkins, and D.A. Wilhite, 2006: Improving farmers' forecast use from understanding their beliefs, social norms, and perceived obstacles. *J. Appl. Meteor. Climatol.*, 45, 1190-1201.
- 69) Artikov, I., G.D. Gary, L.M. PytlikZillig, **Q. Hu**, A.J. Tomkins, K.G. Hubbard, M.J. Hayes, and W.J. Waltman, 2006: Understanding the Influence of Climate Forecasts on Farmer Decisions as Planned Behavior. *J. Appl. Meteor. Climatol.*, 45, 1202-1214.

- 70) **Hu, Q.**, G.D. Willson, X. Chen, and A. Akyze, 2005: Effects of climate variation and landcover change on stream discharge in the Ozark Highlands, U.S.A. *Environmental Modeling and Assessment*, 10, 9-19.
- 71) **Hu, Q.**, and S. Feng, 2005: How have soil temperatures been affected by the surface temperature and precipitation in the Eurasian continent? *Geophys. Res. Lett.*, 32, L14711, doi:10.1029/2005GL023469.
- 72) Feng, S., and **Q. Hu**, 2005: Regulation of Tibetan Plateau heating on variation of Indian summer monsoon in the last two millennia. *Geophys. Res. Lett.*, 32, L02702, doi:10.1029/2004GL021246.
- 73) **Hu, Q.**, 2004: Centennial variations and recent trends of the summer rainfall and runoff in the Yangtze River Basin, China. *Climate Change and Yangtze Floods* (Ed., T. Jiang, L. King, M. Gemmer, and Z.W. Kundzewicz). Science Press, Beijing, China, 453pp.
- 74) **Hu, Q.**, et al., 2004: *Missouri Climate Atlas for Design of Land Application Systems*. 195 pp
- 75) **Hu, Q.**, and S. Feng, 2004: A role of the soil enthalpy in land memory. *J. Climate*, 17, 3632-3642.
- 76) **Hu, Q.**, and S. Feng, 2004: Why has the land memory changed? *J. Climate*, 17, 3236-3243.
- 77) Chen, X., and **Q. Hu**, 2004: Groundwater influence on soil moisture and surface evaporation. *J. Hydrology*, 297, 285-300.
- 78) Feng, S., and **Q. Hu**, 2004: Variation of teleconnection of ENSO and summer rainfall in northern China: A role of Indian summer monsoon. *J. Climate*, 17, 4871-4881.
- 79) Feng, S., and **Q. Hu**, 2004: Changes of agro-meteorological indicators in the contiguous United States: 1951-2000. *Theor. Appl. Climatol.*, 78, 247-264.
- 80) Feng, S., **Q. Hu**, and W. Qian, 2004: Quality control of daily meteorological data in China (1951-2000): A new dataset. *Inter. J. Climatology*, 24, 853-870.
- 81) **Hu, Q.**, 2004: U.S. soil temperature and its variation: A new dataset. *Bull. Amer. Meteor. Soc.*, 85, 29-31.
- 82) **Hu, Q.**, Y. Tawaye, and S. Feng, 2004: Variations of the Northern Hemisphere atmospheric energetics: 1948-2000. *J. Climate*, 17, 1975-1986.
- 83) **Hu, Q.**, 2003: Centennial variations and recent trends of the summer rainfall and runoff in the Yangtze River Basin, China. *J. Lake Sci.*, 15, 97-104.
- 84) **Hu, Q.**, and S. Feng, 2003: A daily soil temperature dataset and soil temperature climatology of the contiguous United States. *J. Appl. Meteor.*, 42, 1139-1156.
- 85) **Hu, Q.**, and G. Buyanovsky, 2003: Climate effect on corn yield in Missouri. *J. Appl. Meteor.*, 42, 1626-1635.
- 86) Qian, W., **Q. Hu**, Y. Zhu, and D. Lee, 2003: Centennial-scale dry-wet period variability in East Asia. *Climate Dynamics*, 21, 77-89.
- 87) Chen, X.H., X. Chen, C. Rowe, **Q. Hu**, and M. Anderson, 2003: Geological and climate control on streamflows in the Nebraska Sand Hills. *J. Amer. Water Res. Assoc.*, 39, 217-228.
- 88) **Hu, Q.**, 2003: A multidecadal variation in summer season diurnal rainfall in the central United States. *J. Climate*, 16, 174-178.
- 89) **Hu, Q.**, S. Feng, and G. Shaefer, 2002: Quality control for USDA NRCS SM/ST Network soil temperatures: A method and a database. *J. Appl. Meteor.*, 41, 607-619.
- 90) **Hu, Q.**, 2002: An invited paper summary on "Interannual rainfall variations in the North American summer monsoon region: 1900-1998." *Bull. Amer. Meteor. Soc.*, 83, 680-681.
- 91) **Hu, Q.**, and S. Feng, 2002: Interannual rainfall variations in the North American summer monsoon region: 1900-1998. *J. Climate*, 15, 1189-1202.

- 92) **Hu, Q.**, and S. Feng, 2001: Climatic role of the southerly flow from the Gulf of Mexico in interannual variations of summer rainfall in the central United States. *J. Climate*, 14, 3156-3170.
- 93) **Hu, Q.**, and S. Feng, 2001: Variation of teleconnection of ENSO and interannual variation of summer rainfall in the central United States. *J. Climate*, 14, 2469-2480.
- 94) **Hu, Q.**, and S. Feng, 2001: Southward migration of centennial scale variations of drought/flood in eastern China and western United States. *J. Climate*, 14, 1323-1328.
- 95) Wu, H., M.J. Hayes, A. Weiss, and **Q. Hu**, 2001: An evaluation of the standardised precipitation index, the China-Z index, and the statistical Z-score. *Int. J. Climatol.*, 21, 745-758.
- 96) Weiss, A., C.J. Hays, **Q. Hu**, and W.E. Easterling, 2001: Incorporating an estimate of bias error in predicting solar irradiance and implications for yield predictions. *Agro. J.*, 93, 1321-1326.
- 97) **Hu, Q.**, and G.D. Willson, 2000: Temperature effects on the Palmer Drought Severity Index. *Int. J. Climatol.*, 20, 1899-1911.
- 98) **Hu, Q.**, C.J. Gantzer, P.-K. Jung, and B.-L. Lee, 2000: Rainfall erosivity in the Republic of Korea. *J. Soil and Water Conservation*, 55, 115-120.
- 99) **Hu, Q.**, C.M. Woodruff, and S.E. Mudrak, 1998: Interdecadal variations of the annual precipitation in the central United States. *Bull. Amer. Meteor. Soc.*, 79, 221-229.
- 100) **Hu, Q.**, 1997: A cumulus parameterization scheme using a cloud model of intermittently rising thermals. *J. Atmos. Sci.*, 54, 2292-2307.
- 101) **Hu, Q.**, 1997: On the uniqueness of the singular value decomposition in meteorological applications. *J. Climate*, 10, 1762-1766.
- 102) Ghan, S.J., L.R. Leung, and **Q. Hu**, 1997: Application of cloud microphysics to NCAR CCM. *J. Geophys. Res. -Atmos.*, 102, 16507-16527.
- 103) **Hu, Q.**, and D.A. Randall, 1995: Low-frequency oscillations in radiative-convective systems, Part II: An idealized model. *J. Atmos. Sci.*, 52, 478-490.
- 104) Randall, D.A., **Q. Hu**, K.-M. Xu, and S.K. Krueger, 1994: Radiative-convective disequilibrium. *Atmospheric Research*, 31, 315-327.
- 105) **Hu, Q.**, and D.A. Randall, 1994: Low-frequency oscillations in radiative-convective systems. *J. Atmos. Sci.*, 51, 1089-1099.
- 106) **Hu, Q.**, 1992: *Low-Frequency Oscillations in Radiative-Convective Models*. Ph.D. dissertation, Department of Atmospheric Science, Colorado State University, Fort Collins, CO. 196pp.
- 107) **Hu, Q.**, E.R. Reiter, and R.A. Pielke, 1988: Analytic solutions to Long's model: A comparison of non-hydrostatic and hydrostatic cases. *Meteor. Atmos. Phys.*, 39, 184-196.
- 108) **Hu, Q.**, and E.R. Reiter, 1987: A diagnostic study of explosive cyclogenesis in the lee of the Rocky Mountains. *Meteor. Atmos. Phys.*, 36, 161-184.

Products – Other refereed publications

- 1) Achugbu, I.C., L. Chen, and **Q. Hu**, 2025: ...
- 2) Achugbu, I.C., L. Chen, and **Q. Hu**, 2024: Impact of Irrigation in the Central Great Plains Using a High-Resolution Climate Model. AGU Annual Meetings, December 9-13, 2024, Washington, D.C.

- 3) Achugbu, I.C., **Q. Hu**, and L. Chen, 2023: Impacts of irrigation in the Central Great Plain: A case study for an extremely dry year. AGU Annual Meetings, December 11-15, 2023, San Francisco, CA.
- 4) Huang, R., X. Chen, and **Q. Hu**, 2023: Changes of vegetation and hydrological dynamics in warming climate in a mountainous watershed. EGU-23-3861, EGU General Assembly, Vienna, Austria, April 2023.
- 5) **Hu, Q.**, and G. Limpert, 2020: Lift in the vertical shear or southerly jet: A mechanism of nocturnal convection in the absence of boundaries. AMS 100th Annual Meeting, Boston, MA 2020.
- 6) Chen, X., R. Huang, and **Q. Hu**, 2019: Changes in vegetation and surface water balance at basin-scale in Central China with rising atmospheric CO₂. AGU Fall Meetings, 2019, San Francisco, CA. 9-13 December 2019 (abstract ID# 515694).
- 7) Mang, J, X. Chen, **Q. Hu**, and J. Liu, 2019: Response of terrestrial water storage to temperature change in the Tibetan Plateau. AGU Fall Meetings, 2019, San Francisco, CA. 9-13 December 2019 (abstract ID# 513997).
- 8) Qiu, N., X. Chen, **Q. Hu**, J. Liu, R. Huang, and M. Gao, 2017: Coupling Stochastic Interpolation with Budyko Approach for Spatial Prediction of Mean Annual Runoff. AGU Fall Meeting 2017 (abstract #H51B-1266).
- 9) **Hu, Q.**, and M.C. Veres, 2016: Principal Roles of the Atlantic Multidecadal Oscillation in Variations of Circulation and Precipitation in North America. AMS 28th Conference on Climate Variability and Change, 11-14 January 2016, New Orleans, LA.
- 10) **Hu, Q.**, 2014: Propagating vs. Stationary Intraseasonal Oscillations in the Tropical Atmosphere: What May Have Caused the Difference? AMS 31st Conference on Hurricanes and Tropical Meteorology, 31 March-4 April 2014, San Diego, CA.
- 11) **Hu, Q.**, 2014: Climate Processes in CMIP5: Reasons for the Large Differences in Simulated Low-Level Jet among the CMIP5 Models. American Meteorological Society's 94th Annual Meeting, 2-8 February 2014, Atlanta, GA.
- 12) Veres, M., and **Q. Hu**, 2014: Free and Forced Atmospheric Responses to Sea Surface Temperatures Using a GCM with Idealized Topography. American Meteorological Society 94th Annual Meeting, 2-8 February 2014, Atlanta, GA.
- 13) **Hu, Q.**, and Q. Wu, 2012: Multidecadal variation in Indian summer monsoon: Circulation and precipitation. 2012 AGU fall meeting, San Francisco, CA.
- 14) **Hu, Q.**, and S. Feng, 2012: Projected drought severity and food security in the central United States. Tenth Annual Climate Prediction Applications Science Workshop, Miami, FL, 13-15 March 2012.
- 15) Feng, S., and **Q. Hu**, 2012: A framework for analyzing changes in the proportion of precipitation falling as snow in the contiguous United States. US Environmental Protection Agency/Eastern Research Group.
- 16) Feng, S., and **Q. Hu**, 2012: Changes in the proportion of precipitation falling as snow in the contiguous United States. US Environmental Protection Agency/Eastern Research Group.
- 17) PytlikZillig, L.M., **Q. Hu**, et al., 2012: Effective climate and sustainability education for agricultural producers: Hypotheses from the cognitive and motivational Sciences. The Vancouver talk.
- 18) Feng S., Q. Fu, and **Q. Hu**, 2012: Expansion of world drylands under global warming. 2012 AGU fall meeting, San Francisco, CA.

- 19) **Hu Q.**, and S. Feng, 2011: Observed and projected drought variability over global land area. 2011 AGU fall meeting, San Francisco, CA, December 2011.
- 20) Feng S., **Q. Hu**, and Q. Wu, 2011: Multiproxy summer precipitation reconstructions for Asia during the past 530 years. 2011 AGU fall meeting, San Francisco, CA, December 2011.
- 21) **Hu Q.**, and S. Feng, 2011: Observed and Projected drought variability over global land area. 2011 AGU fall meeting, San Francisco, CA.
- 22) **Hu Q.**, and S. Feng, 2011: Interrelationship between the Atlantic Multidecadal Oscillation and ENSO and associated summer season precipitation in North America. Climate Change Beijing, 18-20 October 2011. Beijing International Convention Center, China.
- 23) **Hu, Q.**, and L.M. PytlikZillig, 2011: Transitioning climate predictions into effective decision-making: Identifying and repairing the missing link, Climate Workshop. Des Moines, IA. 1-4 March 2011.
- 24) **Hu, Q.**, S. Feng, and R.J. Oglesby, 2010: Variations in North American Summer Precipitation Driven by the Atlantic Multidecadal Oscillation. AGU 2010 Fall Meeting, San Francisco, CA. 13-17 December 2010.
- 25) Feng, S., **Q. Hu**, and R.J. Oglesby, 2010: Role of Atlantic sea surface temperatures on persistent drought in North America—A synthesis. AGU 2010 Fall Meeting, San Francisco, CA. 13-17 December 2010.
- 26) Ho, Chang-Hoi, S. Feng, **Q. Hu**, and R.J. Oglesby, and Su-Jong Jeong, 2010: Evaluating observed and projected future climate changes for the Arctic using the Köppen-Trewartha climate classification. AGU 2010 Fall Meeting, San Francisco, CA. 13-17 December 2010.
- 27) Oglesby, R.J., S. Feng, **Q. Hu**, and C. Rowe, 2010: New perspectives on the role of the AMO in MWP drought: Results from proxy data and climate model analysis. Symposium on the Medieval Warm Period Redux -- Where and When Was It Warm? Lisbon, Portugal, 22-24 September 2010.
- 28) **Hu, Q.**, and S. Feng, 2009: How has the Atlantic Multidecadal Oscillation influenced circulation and precipitation in North America. 34th Climate Diagnostics and Prediction Workshop, Monterey, California, 26-30 October 2009.
- 29) Feng, S., **Q. Hu**, and R.J. Oglesby, 2009: AMO-like variations of Holocene sea surface temperatures in the North Atlantic Ocean. AGU 2009 Fall Meeting, San Francisco, CA. 14-18 December 2009.
- 30) Guo, H., **Q. Hu**, and Q. Zhang, 2009: Rising flooding risk in elevated CO₂ climate: The Poyang Lake case, China. International Conference on Global Change and Freshwater Environments. Nanjing, China, Oct. 24-27, 2009.
- 31) **Hu, Q.**, and K. Skaggs, 2009: Accuracy of 6-10 day precipitation forecasts and its improvement in the past six years. NOAA Science & Technology Infusion Climate Bulletin (<http://www.nws.noaa.gov/ost/climate/STIP/>).
- 32) **Hu, Q.**, and K. Skaggs, 2009: Accuracy of the medium range precipitation predictions in the U.S. and their use in agricultural decision-making. Seventh Annual Climate Prediction Application Science Workshop. 24-29 March 2009, Norman, OK.
- 33) Feng S., **Q. Hu**, and R.J. Oglesby, 2009: Atlantic SST influences on persistent drought in North America. 14th Annual CCSM Workshop. Breckenridge, CO.
- 34) Oglesby, R.J., **Q. Hu**, M. Ackerman, and S. Feng, 2008: Snow cover and North American monsoon precipitation: An occasional partnership. 2008 AGU fall Annual Meeting. San Francisco, CA. December 2008.

- 35) Guo, H., **Q. Hu**, and T. Jiang, 2008: Annual and seasonal responses of streamflow to climate and landcover changes in the Poyang Lake basin, China. In Proceedings of *The Fifth Interannual Conference on SWAT Model and Its Applications in Water Resources Study*. Beijing, China, 17-19 October 2008.
- 36) **Hu, Q.**, L.M. PytlikZillig, G.D. Lynne, K.G. Hubbard, and R.H. Bruning, 2008: What may be needed to change farmers' perception of using climate predictions in farming decisions. Sixth Annual Climate Prediction Application Science Workshop. 4-7 March 2008, Chapel Hill, NC.
- 37) Ackerman, M.M., R.J. Oglesby, and **Q. Hu**, 2008: Precipitation relationship between the Great Plains, U.S. Southwest, and Mexican Monsoons. Paper presented at the EGU Annual Meeting, Vienna, Austria, April 2008.
- 38) Ackerman, M.M., R.J. Oglesby, and **Q. Hu**, 2007: Precipitation relationship between the Great Plains, U.S. Southwest, and Mexican Monsoons. Paper presented at the AGU Fall Meeting, San Francisco, December 2007.
- 39) Liang, Z.N., **Q. Hu**, and M.W. Hoffman, 2007: Detecting source regions of intraseasonal oscillations in the tropical atmosphere by applying beamforming method. AGU 2007 Fall meeting. 10-15 December 2007, San Francisco, CA.
- 40) Feng, S., R.J. Oglesby, C.M. Rowe, D.B. Loope, and **Q. Hu**, 2007: Atlantic and Pacific SST influences on Medieval drought in North America simulated by the Community Atmospheric Model. AGU 2007 Fall meeting. 10-15 December 2007, San Francisco, CA.
- 41) **Hu, Q.**, L.M. PytlikZillig, G.D. Lynne, K.G. Hubbard, and R.H. Bruning, 2007: "Think About It" – Transitioning climate information and predictions to decision aids. Fifth Annual NOAA Climate Prediction Application Science Workshop: Research and Application on Use and Impacts. 21-24 March 2007, Seattle, WA.
- 42) **Hu, Q.**, H. Guo, and T. Jiang, 2007: Current situation about use of climate information in flood management in the Yangtze River Basin, China. Fifth Annual NOAA Climate Prediction Applications Science Workshop: Research and Application on Use and Impacts. 21-24 March 2007, Seattle, WA.
- 43) **Hu, Q.**, S. Feng, and R. Oglesby, 2006: Defining and understanding the North American summer monsoon. AGU 2006 Fall annual meeting, San Francisco, CA., December 2006.
- 44) **Hu, Q.**, 2006: Variations of the Indian summer monsoon and the Tibetan Plateau heating anomaly. In Proceedings of *Impact of Elevated Aerosols on Radiation-Monsoon-Water Cycle Interactions*. July 31-August 2, 2006, Xining, China.
- 45) **Hu, Q.**, and S. Feng, 2006: On the North American Summer monsoons, European Geosciences Union Annual Assembly, April 1-7, 2006, Vienna, Austria.
- 46) Amundson, J.L., T.L. Mader, R.J. Rasby, and **Q. Hu**, 2005: Temperature and temperature-humidity index effects on pregnancy rate in beef cattle. Proc. 17th Intl. Congress on Biometeorology. September 2005, Detscher Wetterdienst, Offenbach, Germany.
- 47) **Hu, Q.**, 2005: Low-frequency oscillations in radiative-convective systems. An observational exploration. In proceedings of *The International Association of Meteorology and Atmospheric Sciences 2005 Scientific Assembly*, August 2-11, Beijing, China.
- 48) **Hu, Q.** et al., 2005: Improve farmers' forecast use from understanding their beliefs, social norms, and perceived controls. In Proceedings of *Third Climate Prediction Applications Science Workshop*, March 15-17, 2005, Columbia University, Palisades, NY.

- 49) Feng S., **Q. Hu**, and F. Jiang, 2005: Dry/wet fluctuations in Northwest China recorded by Tibetan ice cores. International symposium on high-elevation glaciers and climate records. Lanzhou, China, 5-9 September 2005.
- 50) Hayes, M.J., C.L. Knutson, and **Q. Hu**, 2004: Multiple-Year Droughts in Nebraska. University of Nebraska *NEBGUIDE*, G02-1457-A.
- 51) **Hu, Q.**, 2004: Role of soil enthalpy in regional climate change. In proceedings: *The Fourth International Symposium on Asian Monsoon and Circulation*, May 24-29, 2004. Kunming, China.
- 52) Amundson, J.L., T.L. Mader, R.J. Rasby, and **Q. Hu**, 2004: Evaluation of temperature and temperature-humidity index and their effects on reproduction in beef cow. American Association of Animal Scientists National Meeting, July 25-28, 2004, St. Louis, MO.
- 53) **Hu, Q.**, and K. Hubbard. 2003. Changes in the Agrometeorological Environment in Recent Decades in the Continuous U.S. American Society of Agronomy Annual Meetings. Denver, CO. 2-6 November 2003.
- 54) **Hu, Q.**, S. Feng, and W. Qian, 2003: Warm season regional hydrological cycle and climate in mainland China. In Proceedings of International Symposium on Climate Change, 31 March – 3 April 2003, Beijing China, 197-198p.
- 55) **Hu, Q.**, and S. Feng, 2003: Variations in Teleconnection of ENSO and summer rainfall in northern China: A role of Indian summer monsoon. In Proceedings of International Symposium on Climate Change, 31 March – 3 April 2003, Beijing China, 233-234p.
- 56) **Hu, Q.**, 2003: Multidecadal variations in precipitation and runoff in the Yangtze River basin. In *Proceedings of Chinese-German Workshop on Climate Change and Yangtze River Floods*. 4-8 April 2003, Nanjing, China, 32-33.
- 57) **Hu, Q.**, and S. Feng, 2003: Regional hydrological cycle and weather and climate in the contiguous United States. In *Proceedings of AMS 14th Symposium on Global Change and Climate Variations*. Long Beach, CA 9-13 February 2003, 268p.
- 58) **Hu, Q.**, and K.G. Hubbard, 2002: Climate predictions: How to interpret and use them. University of Nebraska *NEBGUIDE*, G02-1457-A.
- 59) Pederson, D.T., D.E. Eisenhauer, and **Q. Hu**, 2002: Effect of barometric pressure change on discharge of boiling-sand springs and consequent baseflow of the Dismal River, Nebraska. In *Proceedings of American Geophysical Union (AGU) 2002 Fall Meeting*. December 2002, San Francisco, CA.
- 60) **Hu, Q.**, and S. Feng, 2002: Multidecadal variation of ENSO teleconnection in the NCAR CCM3. In *Proceedings of 13th Symposium on Global Change and Climate Variations*. American Meteorological Society, American Meteorological Society (AMS), 13-17 Jan. 2002, Orlando, FL, 13-14.
- 61) **Hu, Q.**, C. Rowe, M. Anderson, and X. Chen, 2002: Gravity waves and summer season nocturnal storms in the Sand Hills of the west-central United States. In *Proceedings of Summer Workshop on Severe Storms and Torrential Rain*. Changdu, China, 15-17 June 2002.
- 62) **Hu, Q.**, 2001: Interannual rainfall variations in the North American summer monsoon region. In *Proceedings of American Geophysical Union 2001 Fall Meeting*. 10-14 December 2001, San Francisco, CA.
- 63) Feng, S., and **Q. Hu**, 2001: Role of moisture flux from the Gulf of Mexico in hydrological cycle in the central U.S. In *Proceedings of American Geophysical Union 2001 Fall Meeting*. 10-14 December 2001, San Francisco, CA.

- 64) Hahn, L., **Q. Hu** and coauthors, 2001: Heat wave impacts on feedlot cattle: Guidelines for improved environmental management. In *Proceedings of 6th International Livestock Environment Symposium*. 21-23 May, Louisville, KY.
- 65) **Hu, Q.**, and S. Feng, 2001: A southward migration of centennial scale variations of drought/flood in the Eastern China and Western U.S. In *Proceedings of Symposium on Climate Variability, The Ocean, and Societal Impacts*, AMS, 14-18 January, Albuquerque, New Mexico, 55-56.
- 66) **Hu, Q.**, and S. Feng, 2001: Changes in mechanism of interannual variations in summer rainfall in the central U.S. In *Proceedings of Symposium on Climate Variability, The Ocean, and Societal Impacts*, AMS, 14-18 January, Albuquerque, New Mexico, 70-73.
- 67) **Hu, Q.**, G. Schaeffer, C. Hays, and P. Pasteris, 2000: Soil temperature quality control for USDA NRCS SM/ST Network: Method and products. In *Proceedings of 12th Conference on Applied Climatology*, AMS, 8-11 May, Asheville, NC, 48-51.
- 68) **Hu, Q.**, G.A. Buyanovsky, X. Tao, 2000: Climate effects on corn yield in the North American Corn Belt. In *Proceedings of 12th Conference on Applied Climatology*, AMS, 8-11 May, Asheville, NC, 288-291.
- 69) **Hu, Q.**, J. Lee, and C. Hays, 2000: Interannual variations of summer precipitation and temperature in the central United States. In *Proceedings of 11th Symposium on Global Change Studies*, AMS, 9-14 January, Long Beach CA, 176-179.
- 70) **Hu, Q.**, and G.D. Willson, 2000: Hydrological responses to climate and land-cover changes in a mid-sized watershed. In *Proceedings of 15th Conference on Hydrology*, AMS, 9-14 January 2000, Long Beach CA, 282-283.
- 71) Hahn, G.L., Mader, T.L., Gaughan, J.B., **Hu, Q.**, Nienaber, J.A., 1999: Heat waves and their impacts on feedlot cattle. In *Proceedings of International Society of Biometeorology Congress* (a CDROM), 7-12 November, Sydney, Australia.
- 72) **Hu, Q.**, and J.S. Lee, 1998: Interannual and Interdecadal variations of temperature and precipitation in the Great Plains of the U.S. In *Program Abstract Volume of GCIP Mississippi River Climate Conference*, St. Louis, MO, 94.
- 73) **Hu, Q.**, and G.D. Willson, 1998: Effects of land-cover heterogeneity on basin hydrology and water balance. In *Program Abstract Volume of GCIP Mississippi River Climate Conference*, St. Louis, MO, 203.
- 74) **Hu, Q.**, and G.D. Willson, 1997: Impact of regional climate variations on natural resources and aquatic ecosystem. In *Proceedings of 10th Conference on Applied Climatology*, AMS, 20-24 October, Reno, NV.
- 75) Woodruff, C.W., and **Q. Hu**, 1997: Precipitation features of climate for selected locations in Missouri. Research Bulletin No. 1072, University of Missouri, 30 pp.
- 76) Walcek, C., and **Q. Hu**, 1994: Use of CART measurements to evaluate cloud cover and convective parameterizations. In *Proceedings of 4th ARM Science Team Meeting*, 28 February-3 March, Charleston, SC.
- 77) Walcek, C., and **Q. Hu**, 1993: A cumulus parameterization scheme of detraining drafts. In *Proceedings of 20th Conference on Hurricanes and Tropical Meteorology*, AMS, 10-14 May, San Antonio, TX, 345-348.
- 78) **Hu, Q.**, and D.A. Randall, 1991: Low frequency oscillations in radiative-convective models. In *Proceedings of 5th Conference on Climate Variations*, AMS, 14-18 October, Denver, CO, 218-221.

- 79) **Hu, Q.**, and D.A. Randall, 1991: Low frequency oscillations in radiative-convective models. In *Proceedings of 19th Conference on Hurricanes and Tropical Meteorology*, AMS, 6-10 May, Miami, FL, 33-35.
- 80) Stevens, D.E., and **Q. Hu**, 1989: Tropical ocean-atmospheric interaction at the intraseasonal time scale. In *Proceedings of the 14th Annual Climate Diagnostics Workshop*, 16-20 October 1989, San Diego, CA, 102-107.
- 81) Stevens, D.E., and **Q. Hu**, 1989: A coupled ocean/atmosphere process for the tropical intraseasonal oscillation. In *Proceedings of 5th Scientific Assembly*, University of Reading, UK, July 31-August 11, 1989.
- 82) Stevens, D.E., **Q. Hu**, G.L. Stephens, and D. A. Randall, 1989: The hydrological cycle of the intraseasonal oscillation. In *Proceedings of Western Pacific International Meeting and Workshop on TOGA-COARE*, Noumea, New Caledonia, 24-30 May 1989.

Invited presentations

1. What does the latest science of climate change mean from city to continental scales? 7 August 2023 at Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi, Xinjiang.
2. *Northward expansion of desert climate in Central Asia in recent decades*. Clubhouse, https://www.clubhouse.com/room/MwJE5ZrQ?utm_medium=ch_room_xerc&utm_campaign=j24X6ivwc0EnmCitvMfvdw-250317. June 22, 2022.
3. Interviewed by science journalist, Ms. Giorgia Guglielmi, of journal *Nature* on our research of Central Asia climate change. The interview was reported in *Nature* news on articles <https://www.nature.com/articles/d41586-022-01667-2>. June 21, 2022.
4. Interviewed on Kyrgyzstan National TV by news reporter Ms. Baktygul Chynybaeva on research in climate change in Central Asia. June 22, 2022.
5. *Lift in the vertical shear of southerly winds: A mechanism of nocturnal convection initiation in the U.S. Great Plains*. College of Atmospheric Sciences, Lanzhou University, September 17, 2019, Lanzhou, China.
6. *How does ENSO achieve its teleconnection with precipitation variation in central Asia?* Climate Center, Chinese Meteorological Administration. Beijing, China, August 9, 2016.
7. *Effects of the Three Gorges Dam on Yangtze River Flow and Its Interaction with the Poyang Lake*. Nanjing University of Information Science and Technology, Nanjing, China. February 19, 2015.
8. *Atmospheric circulation and precipitation responses to the AMO in idealized model experiments*. Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Xinjiang, China. December 5, 2014.
9. Invited contributor, Workshop (by invitation only) on AMO Effects on Atlantic Ecosystems. International Council for Exploration of Sea, Woods Hole, MA, June 2011.
10. *Climate variation in Central Asia*. Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Xinjiang, China. July 21, 2009.
11. *Climate Models*. University of Nebraska-Lincoln, Mathematics-Biology Seminar Series, April 23, 2009.
12. *Role of Tibetan Plateau heating in engaging Atlantic multidecadal oscillation and the Indian summer monsoon variation in the past two millennia*. Climate Change Science Forum Series 246, National Climate Center, Chinese Meteorological Administration. Beijing, China. Jan. 7, 2008.

13. *The North American summer monsoons*. Institute of Meteorological Science of China Meteorological Administration. Beijing, China, July 30, 2007
14. *Defining and understanding the North American summer monsoon*. Department Seminar at Department of Agronomy, Iowa State University, October 3, 2006.
15. *Human Effect on climate change*. Invited talk at Hehai University, Nanjing, China. July 5, 2006.
16. *Effects of human activity on global climate change*. Invited talk at The Brownville Lyceum Science Café. June 11, 2006.
17. *Uncertainties of climate variations*. Institute of Geography and Limnology, Chinese Academy of Sciences, Nanjing, China. August 4, 2005.
18. *Extracting meaningful data: Distinguishing signal from noise in climate change*. 2005 Phenology Laboratory Workshop, Lincoln, NE, June 16-17, 2005.
19. *How Can We Effectively Use the Forecasts in Decision-Making?* Macau Bureau of Meteorology and Geophysics. Macau, China, June 23, 2004.
20. *The Madden-Julian Oscillation in the Tropical Atmosphere*. Institute of Tropical Meteorology, China Meteorological Administration, Guangzhou, China, June 15, 2004
21. *Atmospheric Energetics and Global Warming*. Department of Atmospheric Sciences, Zhongshan University, Guangzhou, China, June 13, 2004.
22. Keynote speaker, speech title: *The Changing Climate: Issues of the 21st Century*. The 13th Annual Conference of the Wisconsin Space Grant Consortium, Green Bay, WI. August 14, 2003.
23. *Changes in the Northern Hemisphere Atmospheric Energetics in Recent Decades*. Institute of Arid and Semiarid Ecosystem Environment Studies. Chinese Academy of Sciences. Lanzhou, China, December 12, 2003
24. *Multidecadal Variations in the Climate System*. China National Climate Center. Beijing, China, April 15, 2003.
25. *Water Cycle in the Earth System*. Department of Atmospheric Sciences, Beijing University, Beijing, China, April 11, 2003.
26. *Climate Change in Recent Decades*. Department of Atmospheric Sciences, Nanjing University, Nanjing, China. April 7, 2003.
27. *Gravity waves and summer season nocturnal storms in the Sand Hills of the west-central United States*. Institute of Atmospheric Physics, Chinese Academy of Sciences, Chengdu, China, June 15, 2002.
28. *Regional Climate Variations: A Different Perspective*. T. Mylan Stout Lecture Series, University of Nebraska-Lincoln Geosciences Department, September 13, 2002.
29. *Effects of Drought on Corn Yield: A Missouri Study*. University of Nebraska-Lincoln Agronomy & Horticulture Department, October 4, 2002.
30. *Global Climate Change*. American Meteorological Society Omaha Chapter, Omaha, NE, October 17, 2002.
31. *Variations of teleconnection of ENSO and interannual variation of summer rainfall in the central United States*. Department of Atmospheric Science, Colorado State University, September 22, 2000.

Grants

1. NSF CHIRRP: Responding to Groundwater Depletion and Building Resilience by Examining Emerging Social-Environmental-Technical Structures. NSF (EAGER-2435082), Co-PI (PI: Ruopu Li, University of Southern Illinois), \$300,000, 09/01/2024-08/31/2026.
2. Economic Impacts of Changes in Snowpack on Irrigated Agriculture in the Western United States. USDA ERS, PI, \$75,000, 08/31/2023-07/30/2024.
3. Lift in the Vertical Shear of Southerly Winds: A Mechanism of Elevated Convection at Night in the U.S Great Plains. NSF (EAGER-1924679), PI, \$204,515, 6/1/2019-5/31/2023.
4. Food, Feed, Fuel, and Fiber: Security under a Changing Climate (Multistate Project, NC1179), USDA, PI, \$50,000, 10/1/2015-9/30/2019.
5. Quantifying the Relative Roles of Progressive Land Use Change, Irrigation, and Remote Forcing in Southern Great Plains Precipitation Variability, NSF (AGS-1355916), Co-PI (PI: M. Van Den Broeke), \$446,697, 07/01/2014 -06/30/2018.
6. Stowell, R. (Principal Investigator), Powers, C. (Investigator), Redfearn, D. (Investigator), Hu, Q. (Investigator), Walz, T. (Investigator), Luebke, M. (Investigator), Erickson, G. (Investigator), Williams, T. (Investigator), sub-award of Grant, "Beef Scenario Planning" of South Dakota State University, \$15,000, 5/1/2016-4/30/2017).
7. Climate effects on crop yield in the central U.S. ARD UNL, PI, \$10,000, 3/1/2015-9/30/2015.
8. High-Plains Earth System Modeling Complex (HP-ESMC)-Toward integrated assimilation of satellite remote sensing and ground-based observation data. UNL Office of Research, Co-PI (PI: J. Wang), \$100,000, 1/1/2015-12/31/2016.
9. Quantifying the Relative Roles of Local vs. Remote Effects on North American Summertime Drought. NASA, Co-PI (PI: R. Oglesby), \$245,837, 11/06/2012-11/05/2014.
10. Megadrought: Local vs. Remote Causal Factors for Medieval North America. NSF, Co-PI (PI: S. Feng), \$469,398, 5/1/2011-4/30/2014.
11. Changes in Snowfall/Precipitation Ratio in the Contiguous United States. USGS, PI, \$24,900, 2/1/2012-6/30/2012.
12. Development of a Northern Hemisphere gridded precipitation dataset spanning the past half millennium for analyzing interannual and longer-term variability in the monsoons. NOAA CCDD, PI, \$529,002, 8/1/2010-7/31/2014.
13. Understanding and predicting tropical and North Atlantic SST forcing on variations in warm season precipitation over North America. NOAA CPPA, PI, \$293,000, 8/1/2009-7/31/2013.
14. Impact of climate and soils on crop selection and management. Multistate Project NC-1179, USDA, PI, \$80,000, 7/1/2010- 6/30/2014.
15. CCEP-I: Central Great Plains climate change education partnership. NSF, Co-I (PIs: Ben Champion, K-State and Lisa PytlikZillig, UNL), \$249,965, 9/1/2011-8/31/2012.
16. Transition of weather and climate forecasts into effective decision-making tools. NOAA NCTP, PI, \$293,001, 6/1/05-5/31/08.
17. Impact of climate and soils on crop selection and management. Multistate Project NC-1018 (NC94), USDA, \$100,000, 7/1/1999- 6/30/2009.
18. Predicting wheat curl mite movement and wheat streak mosaic virus spread. Co-PI (PI: Gary Hein), USDA CSREES, \$89,662. 6/1/06-5/31/09.
19. Evaluation of ecosystem models for beef cattle production. Co-PI (PI: T. Mader), DOE NIGEC, \$324,513. 9/1/2004-8/31/2007.
20. UNL Strategic Research Cluster Grant, Co-PI (PI: Gary Hein) \$5,000. 7/1/2004-6/30/05.

21. Predicting the behavior and life cycles of introduced and native plants, insects, and plant diseases on the landscape, UNL Strategic Research Cluster Grant, Co-PI (PI: Bill Waltman) \$25,000. 7/1/04-6/30/05.
22. Sand Hills Biocomplexity. Co-Investigator (PI: D. Wedin), NSF, \$1.8M, 9/1/03-8/31/07.
23. Research development in decision-making under uncertainty of climate change. PI, \$5,000. UNL Cluster grant, 8/1/03-7/31/04.
24. Engaging Agricultural Communities in the Great Plains of the United States with the Applications & Developments of Climate Predictions & Information. PI, NOAA, \$432,916, 7/1/2002-6/30/2006.
25. Soil Temperature Database for the United States. PI, NOAA NCDC \$28,000, 7/1/02-6/30/03.
26. Soil Enthalpy Effects on “Land Memory” in the Western United States. PI, NOAA \$40,000. 7/1/03-6/30/2004.
27. Drought Risk and Mitigation on the Agricultural Landscape: A series of risk analysis, management, and mitigation workshops for Nebraska farmers and ranchers. Co-PI, (PI: D. Wilhite). USDA, FCIC/RMA, \$95,000. 10/1/2002-9/30/2003.
28. Impact of Global Change on Livestock Performance and Reproduction. Co-PI, (PI: Terry Mader). DOE NIGEC, \$279,059, 9/1/2001-8/31/2004.
29. Modeling Corn and Soybean Production in a Sheltered Field. Co-PI, (PI: Carl Mize). NRI-CGP, \$532,745, 01/01/2001-12/31/2003.
30. Using Integrated Techniques to Investigate the Hydrological Cycle in the Nebraska Sand Hills. Co-PI, (PI: C. Rowe). NOAA, \$225,000, 7/01/2000-6/30/2003.
31. Missouri Climate Atlas. PI, EPA/Missouri Department of Natural Resources, \$95,000, 01/01/2001-12/31/2003.
32. Karst Aquifer Effect on Stream Discharge Variation in the Jacks Fork River Basin in the Ozark Highlands. PI, USGS, \$11,000, 9/1/2001-12/31/2002.
33. Soil Temperature Data Quality Control for USDA NRCS Soil Climate Project Network. PI. USDA, \$84,000, 10/01/98-9/30/2002.
34. Soil Temperature Database Development for U.S. NCDC. PI, NOAA NCDC, \$8,228, 5/1/2001-4/30/2002.
35. Sources of Uncertainty in the Calculation of Design Weather Conditions in the ASHRAE Handbook of Fundamentals 1171-TRP. Co-PI, (PI: K. Hubbard). ASHRAE, \$119,000, 5/01/2000-9/30/2002.
36. Assessment of Climate Impact on Carbon Exchange between an Agroecosystem and the Atmosphere. Co-PI, (PI: G. Buyanovsky). DOE NIGEC, \$132,000, 10/01/98-6/30/2002.
37. Dynamical Diagnostics of Multidecadal Variability in Global Climate Models. PI, UNL Laymen Fund, \$7,494, 5/1/2001-4/30/2003.
38. Wheat Curl Mite Movement and wheat Streak Mosaic Virus Spread from Volunteer. Co-PI, (PI: G. Hein), UNL ARD, \$15,050, 7/1/2001-6/30/2002.
39. NC-94 Regional Climate Research. Co-PI, (PI: K. Hubbard), USDA, \$10,000, 9/30/2000-9/30/2001.
40. A new scheme of snow accumulation and melting in Land Surface Models. PI, SDSM&T/NASA, \$29,000, 10/1/98-03/01/00.
41. Application of a Distributed Hydrology-Vegetation Model in Prediction of Stream Discharge Change under Climate Change Scenarios. PI, USGS, \$156,000, 7/1/96-9/30/00.

Synergetic activities and professional services

2023-present: **Editor-in-Chief**, *Journal of Applied Meteorology and Climatology* (JAMC), American Meteorological Society (AMS). Member of the AMS Publications Commission, working with the Commission on publication policies for AMS journals while managing submissions to JAMC and overseeing their review progress by editors for the better good of the advance of sciences.

2012-2022: **Editor**, *Journal of Applied Meteorology and Climatology*, American Meteorological Society. Organized reviews of over 380 submissions to the Journal; communicated and interacted with reviewers and authors to address various research issues, improved understanding of research subjects in submissions, and achieved better outcomes and impacts from the research for authors and readers around the world.

2008-2015: **Editor**, *Advances in Meteorology* (an open-access journal)

2011-2019: **Associate Editor**, *Climate Research* (Journal)

2014: Co-Chair, session “Convection II” of the 31st Conference on Hurricane and Tropical Meteorology, American Meteorological Society, San Diego, CA.

1992-present: Member of American Meteorological Society

2001-present: Member of American Geophysical Union

1995-2000: Member of the Association of American State Climatologists

2001-2010: Associate Member of the Association of American State Climatologists

2003-present: Fellow of the Center for Great Plains Studies, University of Nebraska-Lincoln.

1990-present: Referee of manuscripts submitted to *Nature* (2004, 2014, 2015), *Proceedings of National Academy of Sciences of USA*, *Journal of the Atmospheric Sciences* (1996-2010), *Journal of Climate* (1995-present), *Journal of Geophysical Research* (1990-present), *Geophysical Research Letters* (2002-present), *International Journal of Climatology* (2001-present), *Advances in Atmospheric Sciences* (2001-11), *Great Plains Research* (2002-present), *Journal of Arid Environment* (2005-10), *Applied Engineering in Agriculture* (2003), *Tellus-A* (2011), *Journal of Applied Meteorology and Climatology* (2002-present), *Journal of Hydrometeorology* (2004-present), *China Science Bulletin* (2005), *Bulletin of Glaciology Research* (2005), *Global and Planetary Change* (2006-2011), *Agronomy Journal* (2006-08), *Climatic Change* (2008-present), *Journal of Hydrology* (2006-present), *Hydrological Processes* (2008), *Monthly Weather Review* (2009-2011), *Climate Dynamics* (2009-present), *Agricultural Systems*

1999-present: Reviewer of proposals for U.S. National Science Foundation (NSF) Dynamics of Natural and Human Systems Program, NSF Program of Climate Dynamics, NSF International Research Fellowship Program (IRFP), and NSF Arctic Natural Sciences Program, U.S. NOAA Office of Global Programs, U.S. Department of Energy NIGEC Program, The Leaders Opportunity Fund (LOF, a program of the Canada Foundation for Innovation (CFI)), UK/EU Water Sustainability Program, UK Natural Environmental Research Council (NERC), New Zealand Marsden Fund Council, among others.

2005-2017: Reviewer of numerous textbook proposals for Cambridge University Press. Interacted with publishers and improved the quality and impact of accepted textbooks.

2003: Book review: *The Climate near the Ground* (sixth edition) (by Rudolf Geiger, Robert H. Aron, and Paul Todhunter, 2003, 584pp, Hardbound, Rowman & Littlefield). *Bull. Amer. Meteor. Soc.*, 85, 885-887. 2004.

2011: Proposal Review Panelist for NOAA CCDD Program

2013: Proposal Review Panelist for USDA AFRI Program

2017: External evaluation of promotion and tenure file for faculty at COMSATS Institute of Information Technology (CIIT), Islamabad, Pakistan

2022: Reviewed a new textbook, *Essentials of Atmospheric Science* for Cambridge University Press (August 2022)

University services

2019-2022: Faculty Senator

2016-2021: University Marshal

2005-2017: Member of Nomination Committee, Promotion and Tenure Committee, Community Engagement Committee in the School of Natural Resources.

2006: Faculty advisor, University of Nebraska-Lincoln Students Photo Club.

2005-2006: Faculty advisor, Chinese Students and Scholars Association, University of Nebraska-Lincoln.

Honors and distinction

- Recognition of Junior Faculty for Excellence in Research (2002), Agricultural Research Division, Institute of Agriculture and Natural Resources, University of Nebraska.
- Elected Oversea Science Advisor of the Chinese Academy of Sciences (2005-)

Student advisees

J.S. Lee, M.S. (1998)

Chad M. Kauffman, Ph.D. (2000)

Lawren N. Graf, M.S. (2005)

Yacoubou Tawaye, Ph.D. (2007)

Kari Skaggs, M.S. (2009)

Zhaoning Liang, Ph.D. (2010)

Michael C. Veres, M.S. (2011)

Michael C. Veres, Ph.D. (2014)

Qianru Wu, Ph.D. (2015)

Mengyuan Shang, M.S. (2106)

Yun Yue, M.S. (2017)

Jose Abraham Torres Alavez, Ph.D. (2018)

Xu Deng, M.S. (2018)

Xiuming Xu, M.S. (2017-2018, transferred before finishing)

Hebah Alkhasoneh, Ph.D. (2019-2021, transferred before finishing)

Ifeanyi C. Achugbu, Ph.D. (2022-)

(co-advised Ph.D. students with international collaborators: Turangul Amit, Hua Guo, Bo Liu, Yang Deng, Ning Qiu, Yuan Qiu, Richao Huang, Zihang Han, Jiarong Wang)

Postdoctoral trainees

Song Feng, Xi Chen, Gengxin Ou, Gorge Limpert

Graduate advisors

Professor David A. Randall, Department of Atmospheric Science, Colorado State University, Fort Collins, Colorado (Ph.D. program)

Professor Elmar R. Reiter, Department of Atmospheric Science, Colorado State University, Fort Collins, Colorado (M.S. program)