

Education

- Ph.D.** in Geological/Atmospheric Science, **The University of Texas at Austin**, Austin, TX 2010–2015
 Dissertation title: Intraseasonal modulation of Indian summer monsoon by Middle East dust: an observational and numerical modeling study
 Advisor: Prof. Zong-Liang Yang
- B.A.** in Computer Science and Electronic Engineering, **Lanzhou University**, Lanzhou, China 2005–2009
 Thesis title: Study on Retrieval algorithm of vertical profiles of water vapor and cloud microphysical properties using microwave radiometer and artificial neural network
 Advisor: Prof. Jianping Huang

Working Experience

- Lecturer/Academic Program Associate, **The University of Kansas** 2019.08–present
- Postdoctoral Associate, **Cornell University** (Supervisor: Prof. Sara C. Pryor) 2018.07–2019.06
- Simulating extreme aerosol events in the U.S. using WRF-Chem model
- Postdoctoral Associate, **Massachusetts Institute of Technology** (Supervisor: Dr. Chien Wang) 2016.02–2018.06
- Development of an aerosol–cloud interaction scheme in CESM model
 - Cloud radiative effects induced by international shipping emissions and DMS using CESM
 - Indian summer monsoon revival: detection and attribution
- Postdoctoral Fellow, **The University of Texas at Austin** (Supervisor: Prof. Zong-Liang Yang) 2015.09–2016.01
- Human-induced climate change around the Aral Sea and changes in dust activities using multiple satellite retrievals

Research Interests

- Air quality in USA
- Long-term air quality trends in USA and its associated radiative effects using WRF-Chem model
- Aerosol–cloud–monsoon interaction
- Simulating the direct and indirect effects of natural dust aerosols in the Middle East and anthropogenic aerosols in India on the Indian summer monsoon circulation and precipitation using WRF-Chem model
- Cloud radiative effects of international shipping emissions
- Evaluating cloud radiative effects of sulfate, black carbon, organic carbon aerosols from international shipping emissions using a newly developed aerosol scheme incorporated into CESM model
- Long-term variations of global monsoon system
- Land–sea thermal contrast and Indian monsoon variations in observations and CMIP5 models
- Land use and land cover change and their climatic impacts in North China
- Evaluating regional climate responses to human-planted forest in North China using WRF-Chem model by incorporating satellite-observed changes in land use and land cover

Awards and Honors

- The Graduate Student Advanced Study Program, NCAR, May–August 2012

- 1st Place of Early-Career Graduate Best Poster Award in the First Annual Jackson School of Geosciences Research Symposium, The University of Texas at Austin, February 2012
- Lanzhou University Student Scholarship, 3rd place, 2006–2009
- Lanzhou University Freshmen Scholarship, September 2005

Publications

1. **Jin, Q.**: Review of dust–monsoon interactions in South Asia: Recent advances, challenges, and global implications, in preparation.
2. **Jin, Q.**, Crippa, P., and Pryor, S. C.: Spatial characteristics and temporal evolution of the relationship between PM_{2.5} and aerosol optical depth over the eastern USA during 2003–2017, in review.
3. **Jin, Q.** and Pryor, S. C.: Long-term trends of high aerosol pollution events and their climatic impacts in North America using multiple satellite retrievals and modern-era retrospective analysis for research and applications version 2, *Journal of Geophysical Research: Atmospheres*, 125, doi: [10.1029/2019JD031137](https://doi.org/10.1029/2019JD031137), 2020.
4. Hu, Z., Huang, J., Zhao, C., **Jin, Q.**, Ma, Y., and Yang, B.: Modeling dust sources, transport, and radiative effects at different altitudes over the Tibetan Plateau, *Atmospheric Chemistry and Physics*, 20, 1507–1529, doi: [10.5194/acp-20-1507-2020](https://doi.org/10.5194/acp-20-1507-2020), 2020.
5. Hu, Z., Huang, J., Zhao, C., Ma, Y., **Jin, Q.**, Qian, Y., Leung, L. R., Bi, J., Ma, J.: Trans-Pacific transport and evolution of aerosols: Spatiotemporal characteristics and source contributions, *Atmospheric Chemistry and Physics*, 19, 12709–12730, doi: [10.5194/acp-19-12709-2019](https://doi.org/10.5194/acp-19-12709-2019), 2019.
6. Hu, Z., Huang, J., Zhao, C., Bi, J., **Jin, Q.**, Qian, Y., Leung, L. R., Feng, T., Chen, S., and Ma, J.: Modeling the contributions of Northern Hemisphere dust sources to dust outflow from East Asia, *Atmospheric Environment*, 202, 234–243, doi: [10.1016/j.atmosenv.2019.01.022](https://doi.org/10.1016/j.atmosenv.2019.01.022), 2019.
7. **Jin, Q.**, Grandey, B. S., Rothenberg, D., Avramov, A., and Wang, C.: Impacts on cloud radiative effects induced by coexisting aerosols converted from international shipping and maritime DMS emissions, *Atmospheric Chemistry and Physics*, 18, 16793–16808, doi: [10.5194/acp-18-16793-2018](https://doi.org/10.5194/acp-18-16793-2018), 2018.
8. Grandey, B. S., Rothenberg, D., Avramov, A., **Jin, Q.**, Lee, H.-H., Liu, X., Lu, Z., Albani, S., and Wang, C.: Effective radiative forcing in the aerosol–climate model CAM5.3-MARC-ARG, *Atmospheric Chemistry and Physics*, 18, 15783–15810, doi: [10.5194/acp-18-15783-2018](https://doi.org/10.5194/acp-18-15783-2018), 2018.
9. **Jin, Q.**, Wei, J., Pu, B., Yang, Z.-L., parajuli, S. P.: High summertime aerosol loadings over the Arabian Sea and their transport pathways, *Journal of Geophysical Research: Atmospheres*, 123, 10,568–10,590, doi: [10.1029/2018jd028588](https://doi.org/10.1029/2018jd028588), 2018.
10. **Jin, Q.** and Wang, C.: The greening of Northwest Indian subcontinent and reduction of dust abundance resulting from Indian summer monsoon revival, *Scientific Reports*, 4573, doi: [10.1038/s41598-018-23055-5](https://doi.org/10.1038/s41598-018-23055-5), 2018.
11. Xue, H., **Jin, Q.**, Yi, B., Mullendore, G., Jin, H., and Zheng X.: Modulation of Soil Initial State on WRF Model Performance over China, *Journal of Geophysical Research: Atmospheres*, 122(21), 11,278–11,300, doi: [10.1002/2017JD027023](https://doi.org/10.1002/2017JD027023), 2017.
12. **Jin, Q.**, Wei, J., Yang, Z.-L., and Lin, P.: Irrigation-induced environmental changes around the Aral Sea: An integrated view from multiple satellite observations, *Remote Sensing*, 9(900), doi: [10.3390/rs9090900](https://doi.org/10.3390/rs9090900), 2017.
13. **Jin, Q.** and Wang, C.: A revival of Indian summer monsoon rainfall since 2002, *Nature Climate Change*, 7(8), 587–594, doi: [10.1038/nclimate3348](https://doi.org/10.1038/nclimate3348), 2017.
14. Wei, J., **Jin, Q.**, Yang, Z.-L. and Zhou, L.: Land–atmosphere–aerosol coupling in North China during 2000–2013, *International Journal of Climatology*, 37(s1) 1297–1306, doi: [10.1002/joc.4993](https://doi.org/10.1002/joc.4993), 2017.

15. Wei, J., **Jin, Q.**, Yang, Z.-L., and Dirmeyer, P. A.: Role of ocean evaporation in California droughts and flood, *Geophysical Research Letters*, 43(12), 6554-6562, doi:[10.1002/2016GL069386](https://doi.org/10.1002/2016GL069386), 2016.
16. **Jin, Q.**, Yang, Z.-L., and Wei, J.: High sensitivity of Indian summer monsoon to Middle East dust absorptive properties, *Scientific Reports*, 6, 30690, doi:[10.1038/srep30690](https://doi.org/10.1038/srep30690), 2016.
17. **Jin, Q.**, Yang, Z.-L., and Wei, J.: Seasonal Responses of Indian Summer Monsoon to Dust Aerosols in the Middle East, India, and China, *Journal of Climate*, 29(17), 6320-6349, doi:[10.1175/JCLI-D-15-0622.1](https://doi.org/10.1175/JCLI-D-15-0622.1), 2016.
18. **Jin, Q.**, Wei, J., Yang, Z.-L., Pu, B., and Huang, J.: Consistent response of Indian summer monsoon to Middle East dust in observations and simulations, *Atmospheric Chemistry and Physics*, 15(17), 9897-9915, doi:[10.5194/acp-15-9897-2015](https://doi.org/10.5194/acp-15-9897-2015), 2015.
19. **Jin, Q.**, Wei, J., and Yang, Z.-L.: Positive response of Indian summer rainfall to Middle East dust, *Geophysical Research Letters*, 41(11), 4068-4074, doi:[10.1002/2014gl059980](https://doi.org/10.1002/2014gl059980), 2014.

Presentations

1. **Jin, Q.**, Wang, C.: Climatic response to international shipping emissions in a quasi-equilibrium climate (poster), *AGU*, December 2018 (Washington D.C., USA).
2. **Jin, Q.**, Wei, J., and Yang, Z.-L.: Dust emissions in the Middle East and their interactions with Indian summer monsoon (oral), Beijing Normal University, April 2017.
3. **Jin, Q.** and Wang, C.: Impacts of DSM on the activation of cloud nucleation from international shipping emissions in CESM-MARC (oral), Tsinghua University, April 2017.
4. **Jin, Q.** and Wang, C.: Long-term trends of Indian summer monsoon rainfall (oral), Chinese Academy of Science, April 2017.
5. **Jin, Q.** and Wang, C.: Climatic impacts of international shipping emissions (oral), NOAA/GFDL, April 2017
6. **Jin, Q.** and Wang, C.: Climatic impacts of international shipping emissions in CESM-MARC (oral), *AMS*, January 2017 (Seattle, Washington, USA).
7. **Jin, Q.**, Yang, Z.-L., and Wei, J.: High sensitivity of Indian summer rainfall to dust optical properties in the Middle East (oral), *AMS*, January 2016 (New Orleans, Louisiana, USA).
8. **Jin, Q.**, Yang, Z.-L., and Wei, J.: From Middle East dust to Indian summer monsoon (poster), *AGU*, December 2014 (San Francisco, CA, USA).
9. **Jin, Q.** and Yang, Z.-L.: Detecting trends of global and regional AOD using SeaWiFS, MISR, and MODIS (poster), International Conference on Atmospheric Dust, June 2014 (Castellaneta Marina, Italy).
10. **Jin, Q.**, Wei, J. and Yang, Z.-L.: Positive response of Indian summer rainfall to Arabian dust (oral), International Conference on Atmospheric Dust, June 2014 (Castellaneta Marina, Italy).
11. **Jin, Q.**, Yang, Z.-L., Guenther, A., and Jiang, X.: The radiative impact of dust storms on biogenic volatile organic compounds emission (poster), *AMS*, January 2013 (Austin, TX, USA).
12. **Jin, Q.** and Yang, Z.-L.: The Change of Winds and Dust Storms in the Middle East in Last 60 Years (poster), *AGU*, December 2011 (San Francisco, CA, USA).
13. Yang, Z.-L., Cai, X., Zhang, G., Tavakoly, A. A., **Jin, Q.**, Meyer, L. H., and Guan, X.: The community land surface model with multi-parameterization options (Noah-MP), *Center for Integrated Earth System Science, The University of Texas at Austin*, 2011.

Teaching Experience

- Instructor: *Physical Meteorology*, University of Kansas, fall 2019.

- Teaching Assistant: *Technical Session*, The University of Texas at Austin, spring 2015.
- Teaching Assistant: *Global Warming*, The University of Texas at Austin, fall 2014.
- Guest lecture on *Physical Climatology*, the University of Texas at Austin, fall 2014.

Technical Skills

- Numerical/Climate models: WRF-Chem (9-year experience), CESM (4-year experience), and HYSPLIT trajectory model (3-year experience); long experience in high-performance computing and running climate models on supercomputer resources at TACC in Texas, Cheyenne in Wyoming, and Big Red 2 in Indiana;
- Programming: Python, NCL, IDL, GrADS, Fortran 90 (with MPI and OpenMP), MATLAB, C, and C++.