Qinqin Kong

Postdoctoral scholar
School of Medicine
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EDUCATION

Purdue University Jan 2020 -Aug 2024
Ph.D. in Earth, Atmospheric and Planetary Science
Maj/Concentration : Atmospheric Science

University of the Chinese Academy of Science July 2017
Ph.D. in Physical Geography

Newcastle University Oct 2016-July 2017
Visiting Ph.D. student

Peking University July 2012
B.S. in Geography; double degree in Economics

PROFESSIONAL APPOINTMENTS

School of Medicine, Woods Institute for the Environment, Stanford University
Postdoctoral Scholar Aug 2024-

Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences
Assistant Research Scientist Jul 2017-Dec 2019

HONORS AND AWARDS

1. NCAR ASP Summer Program NSF funded 2023
2. June L. and Tan (Mark) Sun Chen Research Scholarship 2023
3. NASA Future Investigators in Earth and Space Science Technology 2022
4. Henry Silver Graduate Scholarship 2022
5. National Scholarship for doctoral students in China 2017
6. Pacemaker to Merit Student of Chinese Academy of Science 2016
7. Scholarship by China Scholarship Council 2016

PEER-REVIEWED PUBLICATIONS

1. **Kong, Q.** & Huber, M. (2024) A linear sensitivity framework to understand the drivers of the wet-bulb globe temperature changes. Under review at *Journal of Geophysical Research: Atmospheres*.
2. **Kong, Q**. & Huber, M. (2024) A global high-resolution and bias-corrected dataset of CMIP6 projected heat stress metrics. Under review at *Scientific Data*.
3. Mishra, V., Chuphal, DS., **Kong, Q.**, et al. (2024) Rural-to-urban migrant labourers in India face severe heat stress driven by climate warming and ENSO variability. Under review at Nature Climate Change
4. Wu, H., **Kong, Q.**, Huber, M., Sun, M. & Craig, M. (2024) Climate Change Will Increase High Temperature Risks, Degradation, and Costs of Rooftop Photovoltaics Globally. Under review at *Joule*
5. Matthews, T., Raymond, C., Foster, J., Baldwin, J., Ivanovich, C., **Kong, Q.,** et al. (2024) Earth's most extreme heat events and their lethality under climate warming. Under review at *Nature Reviews Earth & Environment*.
6. Menzo, ZM., Karamperidou, C., **Kong, Q.** & Huber, M. (2024) El Niño Enhances Exposure to Humid Heat Extremes with Regionally Varying Impacts during Eastern vs Central Pacific Events. Under review at *Geophysical Research Letters*.
7. **Kong, Q.**, & Huber, M. (2024). A new, zero-iteration analytic implementation of wet-bulb globe temperature: Development, validation, and comparison with other methods. *GeoHealth*, 8, e2024GH001068. https://doi.org/10.1029/2024GH001068
8. Vecellio, D., **Kong, Q.** (co-leading author), Kenney, L., & Huber, M. (2023) Greatly enhanced risk to humans as a consequence of empirically determined lower moist heat stress tolerance. *Proceedings of the National Academy of Sciences* 120, e2305427120, https://doi.org/10.1073/pnas.2305427120
9. **Kong, Q.** & Huber, M. (2023) Regimes of soil moisture-wet bulb temperature coupling with relevance to moist heat stress. *Journal of Climate* 1–45, https://doi.org/10.1175/JCLI-D-23-0132.1.
10. **Kong, Q.**, & Huber, M. (2022). Explicit calculations of Wet Bulb Globe Temperature compared with approximations and why it matters for labor productivity. *Earth's Future*. https://doi.org/10.1029/2021EF002334
11. Saeed, W., Haqiqi, I., **Kong, Q.**, Huber, M., Buzan, J. R., Chonabayashi, S., et al. (2022). The poverty impacts of labor heat stress in West Africa under a warming climate. *Earth's Future*, 10, e2022EF002777, https://doi.org/10.1029/2022EF002777.
12. **Kong, Q.**, Guerreiro, S. B., Blenkinsop, S., Li, X.-F., & Fowler, H. J. (2020). Increases in summertime concurrent drought and heatwave in Eastern China. *Weather and Climate Extremes*, 28, 100242. https://doi.org/10.1016/j.wace.2019.100242.
13. **Kong, Q.**, Zheng, J., Fowler, H. J., Ge, Q., & Xi, J. (2019). Climate change and summer thermal comfort in China. *Theoretical and Applied Climatology*, 137(1–2), 1077–1088. https://doi.org/10.1007/s00704-018-2648-5
14. Roshan, G., Ghanghermeh, A., & **Kong, Q.** (2018). Spatial and temporal analysis of outdoor human thermal comfort during heat and cold waves in Iran. *Weather and Climate Extremes*, 19, 58–67. https://doi.org/10.1016/j.wace.2018.01.005

15. **Kong, Q.**, Ge, Q., Xi, J., & Zheng, J. (2017). Human-biometeorological assessment of increasing summertime extreme heat events in Shanghai, China during 1973–2015. *Theoretical and Applied Climatology*, 130(3–4), 1055–1064. https://doi.org/10.1007/s00704-016-1933-4
16. Ge, Q., **Kong, Q.**, Xi, J. & Zheng, J. (2017) Application of UTCI in China from tourism perspective. *Theor Appl Climatol* 128, 551–561. https://doi.org/10.1007/s00704-016-1731-z
17. **Kong, Q.**, Ge, Q., Zheng, J., & Xi, J. (2015). Prolonged dry episodes over Northeast China during the period 1961–2012. *Theoretical and Applied Climatology*, 122(3–4), 711–719. https://doi.org/10.1007/s00704-014-1320-y
18. Xi, J., **Kong, Q.** & Wang, X. (2015) Spatial polarization of villages in tourist destinations: A case study from Yesanpo, China. *J. Mt. Sci.* 12, 1038–1050. https://doi.org/10.1007/s11629-014-3358-9
19. Xi, J., Wang, X., **Kong, Q.** & Zhang, N. (2015) Spatial morphology evolution of rural settlements induced by tourism: A comparative study of three villages in Yesanpo tourism area, China. *J. Geogr. Sci.* 25, 497–511. https://doi.org/10.1007/s11442-015-1182-y
20. Xi, J., Zhao, M., Ge, Q. & **Kong, Q**. (2014) Changes in land use of a village driven by over 25 years of tourism: The case of Gougezhuang village, China. *Land Use Policy* 40, 119–130. https://doi.org/10.1016/j.landusepol.2013.11.014

PRESENTATIONS

1. “Scaling pattern of wet-bulb globe temperature with global warming” (poster) at Columbia Climate School Extreme Heat Workshop on 07/2024.
2. “Understanding the scaling pattern of heat stress with global warming” (poster) at AGU conference on 12/2023.
3. “Wet soil amplifies moist heat stress” (poster) at AGU conference on 12/2023.
4. “Atmospheric control of soil moisture’s influence on human heat stress” at NCAR ASP summer colloquium on 07/2023
5. “Moist heat stress response to changes in surface evaporative conductance” (poster) at NCAR CESM workshop on 06/2023.
6. “Regimes of soil moisture-wet bulb temperature coupling in ERA5 reanalysis” at Purdue, Institute For a Sustainable Future research expo on 03/2023
7. ”Investigating soil moisture-heat stress coupling using an idealized model” (poster) at AGU conference on 12/2022.

TEACHING AND MENTOR EXPERIENCE

1. Mentor, Purdue EAPS first-year mentorship program (Fall, 2023)

   Mentor first-year graduate students by assisting with academic and graduate life skills, facilitating access to department and university resources, and helping establish connections with faculty and other students.

2. Teaching Assistant, Purdue University, Great Issues in Science and Society (EAPS 36000, Spring 2022)

   Present lectures, host office hours, and grading assignment

OUTREACH, DISSEMINATION, MEDIA COVERAGE

1. Outreach and media coverage related to my co-leading paper "*Greatly enhanced risk to humans as a consequence of empirically determined lower moist heat stress tolerance*" on PNAS:

   Media interview or comments:

   - *Nautilus Magazine:* *https://nautil.us/humid-heat-can-kill-us-much-faster-than-we-thought-415997/*
   - *Newsweek*: https://www.newsweek.com/middle-america-too-hot-live-scientists-predict-1833481
   - Daily Mail: https://www.dailymail.co.uk/sciencetech/article-12610895/Terrifying-heat-maps-reveal-countries-HOT-live-global-temperatures-increase-just-1-5-C.html

   Media coverage
   - CNN: https://www.cnn.com/2023/10/09/us/midwest-moist-heat-stress-humidity-climate/index.html
   - ScienceDaily: https://www.sciencedaily.com/releases/2023/10/231009191623.htm
   - The National: https://www.thenationalnews.com/climate/environment/2023/10/09/climate-change-to-push-heat-and-humidity-beyond-human-limits/
   - SciTechDaily: https://scitechdaily.com/new-study-billions-at-risk-of-extreme-temperatures-surpassing-human-tolerance/
   - THE TIMES OF INDIA: https://timesofindia.indiatimes.com/world/us/middle-america-faces-heat-threat-as-global-warming-climbs-study/articleshow/104348855.cms?from=mdr
   - AXIOS: https://www.axios.com/2023/10/10/climate-change-heat-temperatures-billions-humans-study

2. 09/2023 Contribute to CarbonPlan article "Modeling extreme heat in a changing climate"

3. 06/2021 Tutor, FAIR Cyber Training (FACT) workshop
4. 06/2021 Develop tutorials on Climate data access, visualization, and processing: https://www.youtube.com/playlist?list=PLNQsp3HsFSGZLIHzylP0KLtOtzPKOxdym
5. Code dissemination for calculating the wet-bulb globe temperature: https://zenodo.org/records/5980536

JOURNAL REVIEW

Nature Geoscience, Nature Climate Change, *Science Advances*, *Nature Communication*, *npj climate and atmospheric science*, Communications Earth & Environment, *Geophysical Research Letter*, *Journal of Climate*, *Earth's Future*, *Environmental Research Letters*, *Urban Climate*, *Earth and space science*, *Journal of applied meteorology and climatology, Climatic Change, Theoretical and Applied Climatology*

COMPUTATIONAL SKILLS

Numerical Models: Community Earth System Model (CESM); Chemistry Land-surface Atmosphere Soil Slab model (CLASS) (https://classmodel.github.io/)

Programming Skills: Python, Cython, Fortran, R, Bash, Unix, Latex