CHENGHAO WANG

Assistant Professor
School of Meteorology & Department of Geography and Environmental Sustainability
University of Oklahoma, Norman, OK, USA
SoM Office: National Weather Center, 120 David L. Boren Blvd., Suite 5220, Norman, OK 73072
DGES Office: Sarkeys Energy Center, 100 E. Boyd Street, Suite 534, Norman, OK 73019
Email: chenghao.wang@ou.edu; Office Phone: (405) 325-4353; Fax: (405) 325-7689
Sustainable URban Futures (SURF) Lab: https://sites.create.ou.edu/chenghaowang/

EDUCATION

Ph.D. in Civil, Environmental and Sustainable Engineering — 2019
Arizona State University, Tempe, AZ, USA
Dissertation: Participatory Roles of Urban Trees in Regulating Environmental Quality

M.S.E. in Civil, Environmental and Sustainable Engineering — 2018
Arizona State University, Tempe, AZ, USA

B.Eng. in Hydrology and Water Resources Engineering — 2015
China Three Gorges University, Yichang, China
Thesis: Discharge Response to Climate Change and Land Use Change in Qingjiang River Basin

Visiting Student in Environmental Science — 2013
The Ohio State University, Columbus, OH, USA
Hubei Higher Education Outstanding Student Overseas Study Program (2013), sponsored by the Ministry of Education of Hubei Province, China (68 out of over 1 million college students)

ACADEMIC APPOINTMENTS

Assistant Professor — 2022.08–present
School of Meteorology, University of Oklahoma, Norman, OK, USA

Assistant Professor — 2022.08–present
Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK, USA

Visiting Scholar — 2024.06–2024.08
Research Applications Laboratory, National Center for Atmospheric Research (NCAR), Boulder, CO, USA

Postdoctoral Research Fellow (Advisor: Dr. Robert B. Jackson) — 2020.01–2022.08
Department of Earth System Science, Stanford University, Stanford, CA, USA

New Map of Life Fellow, Environment and Climate Domain (2019 Cohort) — 2020.01–2021.09
The New Map of Life Initiative, Stanford Center on Longevity
Stanford University, Stanford, CA, USA

Graduate Research & Teaching Associate (Advisor: Dr. Zhihua Wang) — 2015.08–2019.12
School of Sustainable Engineering and the Built Environment, Arizona State University, Tempe, AZ, USA

Undergraduate Research Assistant (Advisor: Dr. Shangbin Xiao) — 2013.09–2015.07
College of Hydraulic and Environmental Engineering, China Three Gorges University, Yichang, China

RESEARCH INTERESTS

Urban Meteorology and Climatology, Boundary-Layer Meteorology, Atmospheric Transport and Dispersion, Hydrometeorology, Land–Atmosphere Interactions, Urban Energy Consumption, Urban Sustainability, Complex Networks and Systems, Biogeochemistry

PEER-REVIEWED JOURNAL PUBLICATIONS

(*: Corresponding Author; †: Equal Contribution; ‡: Authors Ordered Alphabetically; §: Student Mentored)

76. **Wang, C.***,†, Wang, Y.†, Wang, Z.-H.†, & Yang, X. (2025). Causal network and dynamic synchronization of urban thermal environment. *Philosophical Transactions of the Royal Society A*, in press. http://dx.doi.org/10.1098/rsta.2025.0041.

75. Liu, B.*, Irvin, J., Omara, M., **Wang, C.**, Kornberg, G., Sheng, H., Gautam, R., Ng, A. Y., & Jackson, R. B. (2025). Regional mapping of natural gas compressor stations in the United States and Canada using deep learning on satellite imagery. *Journal of Environmental Management*, 393, 126728. https://doi.org/10.1016/j.jenvman.2025.126728.

74. Cordero, R. R., Feron, S.*, Malhotra, A., Damiani, A., Ding, M., Fernandoy, F., Alfonso, J. A., Garcia, B., Carrera, J. M., Llanillo, P., Wachter, P., Pizarro, J.*, Roumeas, E., Sepúlveda, E., Jorquera, J., **Wang, C.**, Carrasco, J., Ouyang, Z., Oyola, P., Loonen, M., Beaulieu, A., Dana, J., Khan, A. L., Casassa, G., & Kang, C.-M. (2025). Heavy metal imprints in Antarctic snow from research and tourism. *Nature Sustainability*, online. https://doi.org/10.1038/s41893-025-01616-7.

73. Huang, Y.§, **Wang, C.***, & Wang, Z.-H. (2025). Multi-parameterization of hydrological processes in an urban canopy model. *Building and Environment*, 285, 113567. https://doi.org/10.1016/j.buildenv.2025.113567.

72. Leffel, J.§, **Wang, C.***, Hu, X.-M., Feron, S., & Henry, S.§ (2025). Cities as hotspots of compound heat and fine particulate matter pollution: A 23-year urban–rural comparison across the United States. *Environmental Research*, 285, 122508. https://doi.org/10.1016/j.envres.2025.122508.

71. Nlend, B.*, Reimuth, A., Yang, L. E., Jampani, M., Cristiano, E., Dewals, B., Boyer, E.‡, Cetinkaya, I. D.‡, Diémé, L. P.‡, Dutta, R.‡, Feng, W.‡, Grossi, G.‡, Nasr, W. B.‡, Obaitor, O. S.‡, Olusola, A.‡, Panchanathan, A.‡, Rab, G.‡, Sharma, S.‡, **Wang, C.**‡, Warter, M. M.‡, Welty, C.‡, & Tetzlaff, D. (2025). Building resilient urban water systems: Emerging opportunities for solving long-lasting challenges. *Hydrological Sciences Journal*, online. https://doi.org/10.1080/02626667.2025.2529267.

70. **Wang, C.***, Hu, X.-M., Feron, S., Leffel, J.§, & Cordero, R. R. (2025). Compound heat and ozone pollution in the urban environment. *Urban Climate*, 62, 102511. https://doi.org/10.1016/j.uclim.2025.102511.

69. **Wang, C.***, Zhao, Y., Li, Q., Wang, Z.-H., & Fan, J. (2025). Ultrafine-resolution urban climate modeling: resolving processes across scales. *Journal of Advances in Modeling Earth Systems*, 17(6), e2025MS005053. http://dx.doi.org/10.1029/2025MS005053.

68. Yu, Z.*, Shao, M., Ma, W., **Wang, C.**, & Yang, J. (2025). Satellite-driven evidence of forest-induced temperature variability and its biophysical and biogeochemical pathways across latitudes. *Ecological Indicators*, 175, 113545. http://dx.doi.org/10.1016/j.ecolind.2025.113545.

67. Yu, Z.*, Li, S., Yang, W., Chen, J., Rahman, M. A., **Wang, C.**, Ma, W., Yao, X., Xiong, J., Xu, C., Zhou, Y., Chen, J., Huang, K., Gao, X., Fensholt, R., Weng, Q., & Zhou, W.* (2025). Enhancing climate-driven urban tree cooling with targeted nonclimatic interventions. *Environmental Science & Technology*, 59(18), 9082–9092. https://doi.org/10.1021/acs.est.4c14275.

66. Hu, X.-M.*, Honeycutt, W. T., **Wang, C.**, Weng, B., Zhou, B., & Xue, M. (2025). Observation and simulation of methane plumes during the morning boundary layer transition. *Journal of Geophysical Research: Atmospheres*, 130, e2024JD042317. https://doi.org/10.1029/2024JD042317.

65. Thompson, L.[§], **Wang, C.***, He, C., Lin, T.-S., Liu, C., & Dudhia, J. (2025). Assessment of convection-permitting hydroclimate modeling in urban areas across the contiguous United States. *Urban Climate*, 61, 102375. https://doi.org/10.1016/j.uclim.2025.102375.

64. Wang, Z.-H.*, Li, P., **Wang, C.**, & Yang, X. (2025). Impact of urban trees on carbon dioxide exchange: Mechanistic pathways, environmental controls, and feedback. *Journal of Environmental Management*, 374, 124028. https://doi.org/10.1016/j.jenvman.2025.124028.

63. **Wang, C.***, Deng, C., Horsey, H., Reyna, J. L., Liu, D., Feron, S., Cordero, R. R., Song, J., & Jackson, R. B. (2024). CHUWD-H v1.0: a comprehensive historical hourly weather database for U.S. urban energy system modeling. *Scientific Data*, 11, 1383. https://doi.org/10.1038/s41597-024-04238-4.

62. Li, H.*, Zhao, Y., **Wang, C.**, Ürge-Vorsatz, D., Carmeliet, J., & Bardhan, R.* (2024). Cooling efficacy of trees across cities is determined by background climate, urban morphology, and tree trait. *Communications Earth & Environment*, 5, 754. https://doi.org/10.1038/s43247-024-01908-4.

61. Cordero, R. R., Feron, S.*, Damiani, A., MacDonell, S., Carrasco, J., Pizarro, J., Karas, C., Jorquera, J., Sepulveda, E., Cabello, F., Fernandoy, F., **Wang, C.**, Khan, A. L., & Casassa, G. (2024). Rapid decline in extratropical Andean snow cover driven by the poleward migration of the Southern Hemisphere westerlies. *Scientific Reports*, 14, 26365. https://doi.org/10.1038/s41598-024-78014-0.

60. Jongen, H. J., Lipson, M., Teuling, A. J., Grimmond, S., Baik, J.-J.[‡], Best, M.[‡], Demuzere, M.[‡], Fortuniak, K.[‡], Huang, Y.[‡,§], De Kauwe, M. G.[‡], Li, R.[‡], McNorton, J.[‡], Meili, N.[‡], Oleson, K.[‡], Park, S.-B.[‡], Sun, T.[‡], Tsiringakis, A.[‡], Varentsov, M.[‡], **Wang, C.**[‡], Wang, Z.-H.[‡], & Steeneveld, G.-J.* (2024). The water balance representation in Urban-PLUMBER land surface models. *Journal of Advances in Modeling Earth Systems*, 16(10), e2024MS004231. https://doi.org/10.1029/2024MS004231.

59. Feron, S., Cordero, R. R.*, Damiani, A., MacDonell, S., Pizarro, J., Goubanova, K., Valenzuela, R., **Wang, C.**, Rester, L., & Beaulieu, A. (2024). South America is becoming warmer, drier, and more flammable. *Communications Earth & Environment*, 5, 501. http://doi.org/10.1038/s43247-024-01654-7.

58. Li, Y.*, **Wang, C.**, Tang, Q., Yao, S., Sun, B., Peng, H., & Xiao, S.* (2024). Unraveling the discrepancies between Eulerian and Lagrangian moisture tracking models in monsoon- and westerly-dominated basins of the Tibetan Plateau. *Atmospheric Chemistry and Physics*, 24(18), 10741–10758. https://doi.org/10.5194/acp-24-10741-2024.

57. Chen, W., Zhou, Y.*, Passe, U., Zhang, T., **Wang, C.**, Asrar, G. R., Li, Q. & Li, H. (2024). Improving estimation of diurnal land surface temperatures by integrating weather modeling with satellite observations. *Remote Sensing of Environment*, 315, 114393. https://doi.org/10.1016/j.rse.2024.114393.

56. Liu, J., Xue, F.*, Guo, X., Yang, Z., Kang, M., Chen, M. Ji, D., Liu, D., Xiao, S.*, & **Wang, C.*** (2024). Methane dynamics altered by reservoir operations in a typical tributary of the Three Gorges Reservoir. *Water Research*, 263, 122163. https://doi.org/10.1016/j.watres.2024.122163.

55. Li, Q.*, Padilla, L., Thompson, T., Xiao, S., Mohr, E. J., Zhou, X., Kacharava, N., Cui, Y., & **Wang, C.** (2024). A modeling framework to assess fenceline monitoring and self-reported upset emissions of benzene from multiple oil refineries in Texas. *Atmospheric Environment X*, 23, 100281. https://doi.org/10.1016/j.aeaoa.2024.100281.

54. Li, P., Wang, Z.-H.*, & **Wang, C.** (2024). The potential of urban irrigation for counteracting carbon-climate feedback. *Nature Communications*, 15, 2437. https://doi.org/10.1038/s41467-024-46826-3.

53. Yu, Z.*, Chen, J., Chen, J., Zhan, W., **Wang, C.**, Ma, W., Yao, X., Zhou, S., Zhu, K., & Sun, R. (2024). Enhanced observations from an optimized soil-canopy-photosynthesis and energy flux model revealed evapotranspiration-shading cooling dynamics of urban vegetation during extreme heat. *Remote Sensing of Environment*, 305, 114098. https://doi.org/10.1016/j.rse.2024.114098.

52. Yang, X., Wang, Z.-H.*, **Wang, C.**, & Lai, Y.-C. (2024). Megacities are causal pacemakers of extreme heatwaves. *npj Urban Sustainability*, 4, 8. https://doi.org/10.1038/s42949-024-00148-x.

51. Lipson, M. J.*, Grimmond, S., Best, M., Abramowitz, G., Coutts, A., Tapper, N., Baik, J.-J.‡, Beyers, M.‡, Blunn, L.‡, Boussetta, S.‡, Bou-Zeid, E.‡, De Kauwe, M. G.‡, de Munck, C.‡, Demuzere, M.‡, Fatichi, S.‡, Fortuniak, K.‡, Han, B.-S.‡, Hendry, M.‡, Kikegawa, Y.‡, Kondo, H.‡, Lee, D.-I.‡, Lee, S.-H.‡, Lemonsu, A.‡, Machado, T.‡, Manoli, G.‡, Martilli, A.‡, Masson, V.‡, McNorton, J.‡, Meili, N.‡, Meyer, D.‡, Nice, K. A.‡, Oleson, K. W.‡, Park, S.-B.‡, Roth, M.‡, Schoetter, R.‡, Simón-Moral, A.‡, Steeneveld, G.-J.‡, Sun, T.‡, Takane, Y.‡, Thatcher, M.‡, Tsiringakis, A.‡, Varentsov, M.‡, **Wang, C.**‡, Wang, Z.-H.‡, & Pitman, A. (2024). Evaluation of 30 urban land surface models in the Urban-PLUMBER project: Phase 1 results. *Quarterly Journal of the Royal Meteorological Society*, 150, 126–169. https://doi.org/10.1002/qj.4589.

50. Cordero, R. R.*, Feron, S., Damiani, A., Carrasco, J., Karas, C., **Wang, C.**, Kraamwinkel, C. T., & Beaulieu, A. (2024). Extreme fire weather in Chile driven by climate change and El Niño–Southern Oscillation (ENSO). *Scientific Reports*, 14, 1974. https://doi.org/10.1038/s41598-024-52481-x.

49. Lu, M.*, Zhou, C., **Wang, C.**, Jackson, R. B., & Kempes, C. P.* (2024). Worldwide scaling of waste generation in urban systems. *Nature Cities*, 1, 126–135. https://doi.org/10.1038/s44284-023-00021-5.

48. Dong, Y., Liu, J., Cheng, X., Fan, F., Lin, W., Zhou, C., Wang, S.*, Xiao, S.*, **Wang, C.***, Li, Y., & Li, C. (2023). Wastewater-influenced estuaries are characterized by disproportionately high nitrous oxide emissions but overestimated IPCC emission factor. *Communications Earth & Environment*, 4, 395. http://doi.org/10.1038/s43247-023-01051-6.

47. **Wang, C.***, Song, J., Shi, D., Reyna, J., Horsey, H., Feron, S. C., Zhou, Y., Ouyang, Z., Li, Y., & Jackson, R. B. (2023). Impacts of climate change, population growth, and power sector decarbonization on urban building energy use. *Nature Communications*, 14, 6434. http://doi.org/10.1038/s41467-023-41458-5.

46. Feron, S., Cordero, R. R.*, Damiani, A., Oyola, P., Ansari, T., Pedemonte, J. C., **Wang, C.**, Ouyang, Z., & Gallo, V. (2023). Compound climate-pollution extremes in Santiago de Chile. *Scientific Reports*, 13, 6726. https://doi.org/10.1038/s41598-023-33890-w.

45. Yang, X., Wang, Z.-H.*, **Wang, C.**, & Lai, Y.-C. (2023). Finding causal gateways of precipitation over the contiguous United States. *Geophysical Research Letters*, 50(4), e2022GL101942. http://doi.org/10.1029/2022GL101942.

44. Li, Y.*, **Wang, C.**, Huang, R., Yan, D., Peng, H.*, & Xiao, S. (2022). Spatial distribution of oceanic moisture contributions to precipitation over the Tibetan Plateau. *Hydrology and Earth System Sciences*, 26(24), 6413–6426. https://doi.org/10.5194/hess-26-6413-2022.

43. Yang, S., Liu, J.*, **Wang, C.**, Zhang, T., Dong, X., & Liu, Y. (2022). Vegetation dynamics influenced by climate change and human activities in the Hanjiang River Basin, central China. *Ecological Indicators*, 145, 109586. https://doi.org/10.1016/j.ecolind.2022.109586.

42. Huang, X., Song, J.*, **Wang, C.**, & Chan, P. W. (2022). Realistic representation of city street-level human thermal stress via a new urban climate-human coupling system. *Renewable and Sustainable Energy Reviews*, 169, 112919. https://doi.org/10.1016/j.rser.2022.112919.

41. Yang, X., Wang, Z.-H.*, **Wang, C.**, & Lai, Y.-C. (2022). Detecting the causal influence of thermal environments among climate regions in the United States. *Journal of Environmental Management*, 322, 116001. https://doi.org/10.1016/j.jenvman.2022.116001.

40. Ouyang, Z.*, Sciusco, P., Tong, J., Feron, S., Lei, C., Li, F., John, R., Fan, P., Li, X., Williams, C., Chen, G., **Wang, C.**, & Chen, J.* (2022). Albedo changes caused by future urbanization contribute to global warming. *Nature Communications*, 13, 3800. https://doi.org/10.1038/s41467-022-31558-z.

39. **Wang, C.***, Miller, J., Jackson, R. B., & Carstensen L. L. (2022). Combating climate change in an era of longevity. *Generations Journal*, 46(2), 1–10. https://generations.asaging.org/combating-climate-change-era-longevity.

38. Jackson, R. B.*, Ahlström, A., Hugelius, G., **Wang, C.**, Porporato, A., Ramaswami, A., Roy, J., & Yin, J. (2022). Human well-being and per capita energy use. *Ecosphere*, 13(4), e3978. https://doi.org/10.1002/ecs2.3978.

37. Yang, X., Wang, Z.-H.*, & **Wang, C.** (2022). Critical transitions in the hydrological system: early-warning signals and network analysis. *Hydrology and Earth System Sciences*, 26(7), 1845–1856. https://doi.org/10.5194/hess-26-1845-2022.

36. Cordero, R. R., Sepúlveda, E., Feron, S.*, **Wang, C.**, Damiani, A., Fernandoy, F., Neshyba, S., Rowe, P. M., Asencio, V., Carrasco, J., Alfonso, J. A., MacDonell, S., Sechmeyer, G., Carrera, J. M., Jorquera, J., Llanillo, P., Dana, J., Khan, A. L., & Casassa, G. (2022). Black carbon in the Southern Andean snowpack. *Environmental Research Letters*, 17(4), 044042. https://doi.org/10.1088/1748-9326/ac5df0.

35. Cordero, R. R., Sepúlveda, E., Feron, S.*, Damiani, A.*, Fernandoy, F., Neshyba, S., Rowe, P. M., Asencio, V., Carrasco, J., Alfonso, J. A., Llanillo, P., Wachter, P., Sechmeyer, G., Stepanova, M.*, Carrera, J. M., Jorquera, J., **Wang, C.**, Malhotra, A., Dana, J., Khan, A. L., & Casassa, G. (2022). Black carbon footprint of human presence in Antarctica. *Nature Communications*, 13, 984. https://doi.org/10.1038/s41467-022-28560-w.

34. **Wang, C.***, Sierra Huertas, D., Rowe, J. W., Finkelstein, R., Carstensen, L. L., & Jackson, R. B. (2021). Rethinking the urban physical environment for century-long lives: from age-friendly to longevity-ready cities. *Nature Aging*, 1, 1088–1095. https://doi.org/10.1038/s43587-021-00140-5.

33. Liu, J., Xiao, S.*, **Wang, C.**, Yang, Z.*, Liu, D. Guo, X., Liu, L., & Lorke, A. (2021). Spatial and temporal variability of dissolved methane concentrations and diffusive emissions in the Three Gorges Reservoir. *Water Research*, 207, 117788. https://doi.org/10.1016/j.watres.2021.117788.

32. Li, Y., **Wang, C.**, & Su, F.* (2021). Evaluation of CMIP6 models over two Third Pole subregions with contrasting circulation systems. *Journal of Climate*, 34(22), 9133–9152. https://doi.org/10.1175/JCLI-D-21-0214.1.

31. Cordero, R. R., Feron, S.*, Sepúlveda, E., Damiani, A., Carrera, J. M., Jorquera, J., Alfonso, J. A., Fuenzalida, R., Rivas, M., MacDonell, S., Sechmeyer, G., **Wang, C.**, Ouyang, Z., & Lhermitte, S. (2021). Evaluation of MODIS-derived estimates of the albedo over the Atacama Desert using ground-based spectral measurements. *Scientific Reports*, 11, 19822. https://doi.org/10.1038/s41598-021-98622-4.

30. Li, Y., **Wang, C.**, Peng, H., Xiao, S., & Yan, D.* (2021). Contribution of moisture sources to precipitation changes in the Three Gorges Reservoir Region. *Hydrology and Earth System Sciences*, 25(9), 4759–4772. https://doi.org/10.5194/hess-25-4759-2021.

29. Huang, X., Song, J.*, **Wang, C.**, Chui, T. F. M., & Chan, P. W. (2021). The synergistic effect of urban heat and moisture islands in a compact high-rise city. *Building and Environment*, 205, 108274. https://doi.org/10.1016/j.buildenv.2021.108274.

28. Wang, Z.-H.*, **Wang, C.**, & Yang, X. (2021). Dynamic synchronization of extreme heat in complex climate networks in the contiguous United States. *Urban Climate*, 38, 100909. https://doi.org/10.1016/j.uclim.2021.100909.

27. **Wang, C.***, Wang, Z.-H., Kaloush, K. E., & Shacat, J. (2021). Cool pavements for urban heat island mitigation: A synthetic review. *Renewable and Sustainable Energy Reviews*, 146, 111171. https://doi.org/10.1016/j.rser.2021.111171.

26. **Wang, C.***, Wang, Z.-H., & Ryu, Y.-H. (2021). A single-layer urban canopy model with transmissive radiation exchange between trees and street canyons. *Building and Environment*, 191, 107593. https://doi.org/10.1016/j.buildenv.2021.107593.

25. **Wang, C.***, Wang, Z.-H., Kaloush, K. E., & Shacat, J. (2021). Perceptions of urban heat island mitigation and implementation strategies: survey and gap analysis. *Sustainable Cities and Society*, 66, 102687. https://doi.org/10.1016/j.scs.2020.102687.

24. Zhang, F.[†], **Wang, C.**[†], & Wang, Z.-H.* (2020). Responses of natural vegetation to climate in dryland ecosystems: A case study between Xinjiang and Arizona. *Remote Sensing*, 12(21), 3567. https://doi.org/10.3390/rs12213567.

23. **Wang, C.**, Wang, Z.-H.*, & Li, Q. (2020). Emergence of urban clustering among U.S. cities under environmental stressors. *Sustainable Cities and Society*, 63, 102481. https://doi.org/10.1016/j.scs.2020.102481.

22. **Wang, C.**, Wang, Z.-H.*, & Sun, L.[§] (2020). Early-warning signals for critical temperature transitions. *Geophysical Research Letters*, 47(14), e2020GL088503. https://doi.org/10.1029/2020GL088503.

21. **Wang, C.**, & Wang, Z.-H.* (2020). A network-based toolkit for evaluation and intercomparison of weather prediction and climate modeling. *Journal of Environmental Management*, 268, 110709. https://doi.org/10.1016/j.jenvman.2020.110709.

20. Yang, J.*[,†], Hu, L.*[,†], & **Wang, C.** (2019). Population dynamics modify urban residents' exposure to extreme temperatures across the United States. *Science Advances*, 5(12), eaay3452. https://doi.org/10.1126/sciadv.aay3452.

19. **Wang, C.**, Wang, Z.-H.*, & Yang, J. (2019). Urban water capacity: Irrigation for heat mitigation. *Computers, Environment and Urban Systems*, 78, 101397. https://doi.org/10.1016/j.compenvurbsys.2019.101397.

18. **Wang, C.**, Wang, Z.-H.*, Wang, C. Y., & Myint, S. W. (2019). Environmental cooling provided by urban trees under extreme heat and cold waves in U.S. cities. *Remote Sensing of Environment*, 227, 28–43. https://doi.org/10.1016/j.rse.2019.03.024.

17. **Wang, C.**, Li, Q., & Wang, Z.-H.* (2018). Quantifying the impact of urban trees on passive pollutant dispersion using a coupled large-eddy simulation–Lagrangian stochastic model. *Building and Environment*, 145, 33–49. https://doi.org/10.1016/j.buildenv.2018.09.014.

16. **Wang, C.**, Wang, Z.-H.*, & Yang, J. (2018). Cooling effect of urban trees on the built environment of contiguous United States. *Earth's Future*, 6(8), 1066–1081. https://doi.org/10.1029/2018EF000891.

15. Song, J.*, Wang, Z.-H., & **Wang, C.** (2018). The regional impact of urban heat mitigation strategies on planetary boundary-layer dynamics over a semiarid city. *Journal of Geophysical Research: Atmospheres*, 123(12), 6410–6422. https://doi.org/10.1029/2018JD028302.

14. **Wang, C.**, Wang, Z.-H.*, Yang, J., & Li, Q. (2018). A backward-Lagrangian-stochastic footprint model for the urban environment. *Boundary-Layer Meteorology*, 168, 59–80. https://doi.org/10.1007/s10546-018-0338-6.

13. **Wang, C.***, Wang, C. Y., Myint, S. W., & Wang, Z.-H. (2017). Landscape determinants of spatio-temporal patterns of aerosol optical depth in the two most polluted metropolitans in the United States. *Science of the Total Environment*, 609, 1556–1565. https://doi.org/10.1016/j.scitotenv.2017.07.273.

12. **Wang, C.**, & Wang, Z.-H.* (2017). Projecting population growth as a dynamic measure of regional urban warming. *Sustainable Cities and Society,* 32, 357–365. https://doi.org/10.1016/j.scs.2017.04.010.

11. Song, J.*, Wang, Z.-H., & **Wang, C.** (2017). Biospheric and anthropogenic contributors to atmospheric CO_2 variability in a residential neighborhood of Phoenix, Arizona. *Journal of Geophysical Research: Atmospheres*, 122(6), 3317–3329. https://doi.org/10.1002/2016JD026267.

10. Wang, Z.-H.*, Fan, C., Myint, S. W., & **Wang, C.** (2016). Size matters: What are the characteristic source areas for urban planning strategies? *PLoS One*, 11(11), e0165726. https://doi.org/10.1371/journal.pone.0165726.

9. Xiao, S.*, **Wang, C.**, Wilkinson, R. J., Liu, D., Zhang, C., Xu, W., Yang, Z., Wang, Y., & Lei, D. (2016). Theoretical model for diffusive greenhouse gas fluxes estimation across water-air interfaces measured with the static floating chamber method. *Atmospheric Environment*, 137, 45–52. https://doi.org/10.1016/j.atmosenv.2016.04.036.

8. **Wang, C.**, Liu, J.*, Dong, X., & Yu, D. (2016). Runoff response to RCP scenarios of CMIP5 climate change projections in Qingjiang River Basin. *Journal of Central China Normal University (Natural Sciences)*, 50(3), 449–456. https://doi.org/10.3969/j.issn.1000-1190.2016.03.023. (in Chinese)

7. **Wang, C.**, Liu, J.*, Dong, X., & Yu, D. (2016). Research of runoff change in Qingjiang River Basin based on CMIP5 climate model. *Water Resources and Power*, 34(7), 16–20. Link. (in Chinese)

6. **Wang, C.***, & Li, X. (2015). Primary assessment of the daytime aquatic environment in summer at Three Gorges Reservoir and Yangtze River's Yichang section. *Science and Technology Innovation Herald*, 12(3), 111–114. https://doi.org/10.3969/j.issn.1674-098X.2015.03.071. (in Chinese)

5. Xiao, S.*, Yang, H., Liu, D., Zhang, C., Lei, D., Wang, Y., Peng, F., Li, Y., **Wang, C.**, Li, X., Wu, G., & Liu, L. (2014). Gas transfer velocities of methane and carbon dioxide in a subtropical shallow pond. *Tellus B: Chemical and Physical Meteorology*, 66, 23795. https://doi.org/10.3402/tellusb.v66.23795.

4. Xiao, S.*, Liu, W., Yang, H., Lei, D., Wang, Y., Peng, F., Li, Y., **Wang, C.**, Zhang C., Li, X., Wu, G., Liu, L., & Ouyang, K. (2014). Extreme methane bubbling emissions from a subtropical shallow eutrophic pond. *Austin Biometrics and Biostatistics*, 1(2), id1006. http://doi.org/10.26420/austinbiomandbiostat.2014.1006.

3. **Wang, C.**, Xiao, S.*, Li, Y., Zhong, H., Li, X., & Peng, F. (2014). Methane formation and consumption processes in Xiangxi Bay of the Three Gorges Reservoir. *Scientific Reports*, 4, 4449. https://doi.org/10.1038/srep04449.

2. **Wang, C.*** (2014). Current research of sediment incipient motion velocity. *Science and Technology Innovation Herald*, 11(27): 32–36. https://doi.org/10.3969/j.issn.1674-098X.2014.27.014. (in Chinese)

1. **Wang, C.***, & Luo Z. (2012). An approach for calculating the outflow of a hydropower plant with guaranteed output under sparse data conditions. *New Technology & New Products of China*, 19: 70–71. http://doi.org/10.3969/j.issn.1673-9957.2012.19.062. (in Chinese)

PEER-REVIEWED CONFERENCE PUBLICATIONS

(*: Corresponding Author; †: Equal Contribution)

5. Zhu, B.*,†, Lui, N.†, Irvin, J.†, Le, J., Tadwalkar, S., **Wang, C.**, Ouyang, Z., Liu, F. Y., Ng, A. Y., & Jackson, R. B. (2022). METER-ML: A multi-sensor Earth observation benchmark for automated methane source mapping. In Gruca, A., Robinson, C., Yokoya, N., Zhou, J., and Ghamisi, P. (Eds.),

Proceedings of the Second Workshop on Complex Data Challenges in Earth Observation (CDCEO 2022), pp. 33–43. https://doi.org/10.48550/arXiv.2207.11166 or CEUR-WS Vol-3207 Link. [Conference: IJCAI-ECAI 2022: the 31st International Joint Conference on Artificial Intelligence and the 25th European Conference on Artificial Intelligence. Vienna, Austria, July 23–29, 2022.]

4. **Wang, C.*** (2020). Landscape phenology and soil moisture dynamics influenced by irrigation in a desert urban environment. In Ghaffarianhoseini, A., Ghaffarianhoseini A., and Nasmith N. (Eds.), *Imaginable Futures: Design Thinking, and the Scientific Method*, pp. 670–679. ResearchGate Link and ANZAScA Link. [Conference: 54th International Conference of the Architectural Science Association (ANZAScA) 2020. Auckland, New Zealand, November 26–27, 2020.]

3. **Wang, C.*** (2014). Research of sustainable development on waterway transportation in China. In Singh, D., Walubita, L. F., Oh, J., and Li, K. (Eds.), *Chapter: Transportation Issues in Developing Countries*, *American Society of Civil Engineers (ASCE) Geotechnical Special Publications (GSP)*, No. 244, pp. 32–39. https://doi.org/10.1061/9780784478448.005. [Conference: Geo-Hubei 2014 International Conference on Sustainable Civil Infrastructure (Geo-Hubei 2014). Yichang, Hubei Province, China, July 20–22, 2014.]

2. Li, X., Chen, P., Ye, Y.*, & **Wang, C.** (2014). Structure design and mechanics calculation of aqueduct model. In Liu, H. W. (Ed.), *Chapter 2: Architecture Science, Civil Engineering, Building and Construction Materials and Geoengineering*, *Applied Mechanics and Materials*, Vols. 488–489, pp. 381–384. https://doi.org/10.4028/www.scientific.net/AMM.488-489.381. [Conference: The 2014 International Conference on Advanced Engineering Materials and Architecture Science (ICAEMAS 2014). Xi'an, Shanxi Province, China, January 04–05, 2014.]

1. **Wang, C.**, Liu, J.*, & Xuan, Y. (2013). Research on various operation modes of Geheyan hydropower station reservoir in the Qingjiang River. In Zhao, J., Iranpour, R., Li, X., and Jin, B. (Eds.), *Chapter 12: Hydrology and Water Resources Engineering*, *Advanced Materials Research*, Vols. 726–731, pp. 3486–3491. https://doi.org/10.4028/www.scientific.net/AMR.726-731.3486. [Conference: The 2013/2nd International Conference on Energy and Environmental Protection (ICEEP 2013), Guilin, Guizhou Province, China, April 19–21, 2013.]

TECHNICAL ARTICLES, REPORTS, AND BOOKS

([‡]: Authors Ordered Alphabetically; [§]: Student Mentored)

11. Ebert, D., Weng, B., **Wang, C.**, Bedle, H., Xu, M., Hu, X.-M., Crowell, S., Koch, J., Danala, G., Kayakan, E., Honeycutt, W., Wang, Q., Liu, C., Suriamin, M., Moreno-Ward, A., Hyppolite, B., & Connelly, S. (2024). Multi-Scale Integrated Monitoring System for Enhancing Methane Emission Detection, Quantification & Prediction. Report No. DOE-OU-FE0032292, prepared for *U.S. Department of Energy*, 161 pages. Released in Aug 2024: https://doi.org/10.2172/2475453.

10. Yang, X., & **Wang, C.** (2024). Large Cities—The Supernodes during Extreme Heatwaves. Behind the Paper in *Springer Nature Research Communities*. Released in Mar 2024: https://communities.springernature.com/posts/large-cities-the-supernodes-during-extreme-heatwaves.

9. Henry, S.[§], & **Wang, C.** (2023). Compound Heat Wave and $PM_{2.5}$ Pollution Episodes in U.S. Cities. Article prepared for the *2023 National Weather Center Research Experience for Undergraduates Program*, 8 pages. Released in Jul 2023: https://doi.org/10.48550/arXiv.2307.15296.

8. **Wang, C.**, Sharma, A., Doan, Q.-V., Vinoj, V., & Yu, Z. (2022). Weather and Climate Extremes in the Urban Environment: Modeling and Observations. Edited ebook with papers in *Frontiers in Environmental Science* and *Frontiers in Earth Science*, Frontiers Media S.A., 133 pages. Published in Dec 2022: http://dx.doi.org/10.3389/978-2-83250-963-0.

7. The Stanford Center on Longevity (**Wang, C.** as one of the contributors). (2022). The New Map of Life. Report by the *New Map of Life Initiative* at *Stanford Center on Longevity*, 81 pages. Released in Apr 2022: https://longevity.stanford.edu/the-new-map-of-life-full-report/.

6. **Wang, C.**, & Jackson, R. B. (2021). Supporting Century-Long Lives Through Efficient Energy Use and Livable Urban Environments. Report prepared for the *New Map of Life Initiative* at *Stanford Center on Longevity*, 63 pages. Released in Nov 2021: https://longevity.stanford.edu/the-new-map-of-life-report/ or http://dx.doi.org/10.13140/RG.2.2.32873.98402.

5. The Stanford Center on Longevity (**Wang, C.** as one of the contributors). (2021). The New Map of Life: 100 Years to Thrive. Report by the *New Map of Life Initiative* at *Stanford Center on Longevity*, 41 pages. Released in Nov 2021: https://longevity.stanford.edu/the-new-map-of-life-report/.

4. Miller, J., Horwitz, I.‡, Johfre, S.‡, Jonas, A.‡, Roche, M.‡, Sierra Huertas, D.‡, Streeter, J.‡, **Wang, C.**‡, Deevy, M., & Carstensen L. L. (2021). Effectively Reducing Race Differences in Old Age Demands a Life Course Approach. Article prepared for *AARP International* in *Building Equity in Longevity*, Washington, DC: AARP Thought Leadership, 4 pages. Released in May 2021: https://www.aarpinternational.org/resources/build-equity/building-equity-in-longevity-collection (AARP International) or https://doi.org/10.26419/int.00048.001.

3. **Wang, C.**, Wang, Z.-H., & Kaloush, K. E. (2020). Critical Review and Gap Analysis of Impacts from Pavements on Urban Heat Island. Report prepared for *National Asphalt Pavement Association (NAPA)* by *National Center of Excellence (NCE) on SMART Innovations*, 55 pages. Released in Dec 2020: https://ncesmart.asu.edu/gap-analysis-of-impacts-from-pavements-on-uhi/ (NCE on SMART Innovations) or http://dx.doi.org/10.13140/RG.2.2.16670.00321.

2. **Wang, C.** (2020). A New Map of Life Brief – Climate. Mid-fellowship brief prepared for the *New Map of Life Initiative* at *Stanford Center on Longevity*, 3 pages. Released in Nov 2020: https://longevity.stanford.edu/new-map-of-life-fellows-briefs/ (Stanford Center on Longevity).

1. Wang, Z.-H., Kaloush, K. E., & **Wang, C.** (2017). Sustainability and Scaling of Urban Transportation Networks. Report No. NTC2016-SU-R-04, prepared for *National Transportation Center at Maryland (NTC)*, 33 pages. Released in Nov 2017: https://mti.umd.edu/project/ntc2016-su-r-04-sustainability-and-scaling-urban-transportation-networks (NTC) or https://trid.trb.org/view/1505092 (Transportation Research Board, National Academies of Sciences, Engineering, and Medicine).

INVITED TALKS

20. The University of Texas at Austin, Advancing Land Modeling for Gulf Coast Resilience Workshop. Austin, TX, Aug 2025.

19. University of Groningen, Department of Knowledge Infrastructures. Leeuwarden, The Netherlands, Apr 2025.

18. University of Oklahoma, Data Institute for Society Challenges Inaugural Data Science Symposium. Norman, OK, Mar 2025.

17. National Renewable Energy Laboratory. Golden, CO, May 2024.

16. ETH Zurich (Eidgenössische Technische Hochschule Zürich), Department of Mechanical and Process Engineering. Zurich, Switzerland, Apr 2024.

15. China Three Gorges University, College of Hydraulic & Environmental Engineering, Suyuan Forum. Yichang, China, Oct 2023.

14. Stanford University, Stanford Center on Longevity. Stanford, CA, Jun 2023.

13. Texas A&M University, Center for Housing & Urban Development, Center for Geospatial Sciences, Applications and Technology, and Texas A&M Institute of Data Science, Interdisciplinary Built Environment Research Talk Series. College Station, TX, Mar 2023.
12. Texas A&M University, Department of Landscape Architecture & Urban Planning. Multiscale Modeling of Green Infrastructure for Urban Heat Mitigation. College Station, TX, Mar 2023.
11. China Three Gorges University, College of Hydraulic & Environmental Engineering. Yichang, China, Apr 2022.
10. Georgetown University, The Earth Commons & Graduate School of Arts and Sciences. Washington, DC, Mar 2022.
9. Princeton University, Department of Civil and Environmental Engineering. Princeton, NJ, Feb 2022.
8. University of Oklahoma, College of Atmospheric & Geographic Sciences. Norman, OK, Feb 2022.
7. Cornell University, School of Civil and Environmental Engineering, Environmental Fluid Mechanics & Hydrology seminar series. Ithaca, NY, Feb 2022.
6. Stanford University, Stanford Center on Longevity, New Map of Life Fellow Spotlight. Stanford, CA, Jan 2021.
5. National Asphalt Pavement Association (NAPA) panelist webinar. Oct 2020.
4. Arizona State University, School of Sustainable Engineering and the Built Environment, Hydrosystems Engineering Seminar Series. Tempe, AZ, Sep 2019.
3. China Three Gorges University, Yichang, China, May 2018.
2. China Three Gorges University, College of Hydraulic & Environmental Engineering. Yichang, China, May 2018.
1. Arizona State University, School of Sustainable Engineering and the Built Environment, Hydrosystems Engineering Seminar Series. Tempe, AZ, Mar 2018.

CONFERENCE PRESENTATIONS

(*: Presenter; *Italic*: Competition Award; §: Student/Postdoc Mentored)

89. Simatupang, C. A.*,§, & **Wang, C.** A systematic review of numerical models on indoor-outdoor pollutant exchange in urban environments. Session–Urban Air Pollution and Interaction with Meteorology. 16th Symposium on Urban Environment, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026. (upcoming)
88. Spicer, E.*, Klein, P., Hill, A., & **Wang, C.** A novel approach to nocturnal heat risk analysis using machine learning and the unrestricted mesoscale analysis. Session–Urban Extremes. 16th Symposium on Urban Environment, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026. (upcoming)
87. Hu, X.-M., Ding, Y.*,§, Yan, Y., **Wang, C.**, Weng, B., Hardeman, S., & Xue, M. Multi-sensor and multi-model investigation of methane plumes from a wastewater treatment plant to improve emission inversion during the morning boundary layer transition. Session–Boundary-Layer Processes, Atmospheric Dispersion, and Inverse Modeling. 24th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026. (upcoming)
86. Barsanti, K.*, Flocke, F., Levelt, P. F., Shepherd, J. M., Wermter, J. E., Huang, G., **Wang, C.**, & Kaiser, J. Introduction to SCENICS: Stereoscopy of multi-scale chemical exchanges and interactions

between a city and its surroundings. Session–Lessons Learned in Atmospheric Composition Field Campaigns. 28th Conference on Atmospheric Chemistry, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026. (upcoming)

85. Ding, Y.*,§, & **Wang, C.** An enhanced Lagrangian stochastic footprint modeling for urban canopies. Session–Boundary-Layer Processes, Atmospheric Dispersion, and Inverse Modeling. 24th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026. (upcoming)
84. **Wang, C.***, Hu, X.-M., Ma, S., & Tong, D. Meteorological and emission drivers of compound heat and ozone pollution episodes in the Southern Great Plains. Oral [Invited]: Session–Urban Air Pollution: Interaction with Weather/Climate and Impact on Health. American Geophysical Union 2025 Annual Meeting. New Orleans, LA, Dec 15–19, 2025. (upcoming)
83. Huang, Y.*,§, & **Wang, C.** Integrating a physics-based urban tree module into the mesoscale Weather Research and Forecasting model for enhanced urban hydrometeorological simulations. Session–Advancing Representation of Urban Processes and Dynamics in Models Across Scales. American Geophysical Union 2025 Annual Meeting. New Orleans, LA, Dec 15–19, 2025. (upcoming)
82. Lu, M.*, Huang, K., Arroyo, J. I., **Wang, C.**, & Kempes, C. From cells to cities: Extending Kleiber's law from biology to urban systems. Session–Urban Areas and Global Change. American Geophysical Union 2025 Annual Meeting. New Orleans, LA, Dec 15–19, 2025. (upcoming)
81. Ouyang, Z.*, Jackson, R. B., Saunois, M., Canadell, J. G., Zhao, Y., Krummel, P. B., Morfopoulos, C., Patra, P. K., Peters, G. P., Archibald, A. T., Dennison, F., Arora, V., Ciais, P., Davis, S., Feron, S., Hauglustaine, D., Jones, C., Jones, M. W., Kato, E., Kennedy, D., Knauer, J., Lienert, S., Lombardozzi, D., Melton, J. R., Nable, J., O'Sullivan, M., Petron, G., Poulter, B., Rogelj, J., Sandoval Calle, D. P., Smith, P., Suntharalingam, P., Tian, H., **Wang, C.**, & Wiltshire, A. The global hydrogen budget. Session–Atmospheric Chemistry and Composition. American Geophysical Union 2025 Annual Meeting. New Orleans, LA, Dec 15–19, 2025. (upcoming)
80. Leffel, J.*,§, & **Wang, C.** Impacts of weather data on urban building energy use predictions across the contiguous United States. 2025 AEEOK/OREC Roger Farrer Annual Energy Conference. Stillwater, OK, Oct 28, 2025. (upcoming)
79. Wermter, J.*, Johnson, B., **Wang, C.**, Knupp, K., & Shepherd, M. TEMPO-Informed understanding of urban boundary layer dynamics in Atlanta. Poster: TEMPO/GeoXO ACX Joint Science Team Workshop. Cambridge, MA, Aug 19–22, 2025.
78. **Wang, C.*** Resolving urban complexity in land surface modeling: Challenges and opportunities. Oral [Invited]: Session–Urban modeling and application. Advancing Land Modeling for Gulf Coast Resilience Workshop. The University of Texas at Austin, Austin, TX, Aug 14–15, 2025.
77. Masnadi, P.*, Jentner, W., Weng, B., **Wang, C.**, Hu, X.-M., & Ebert, D. Visual analytics for methane emissions monitoring: Integrating multi-scale data for enhanced detection and mitigation. Oral [Invited]: Statistics, Analytics, and GIS for Energy (SAGE) Conference. Des Plaines, IL, Aug 13–14, 2025.
76. Huang, Y.*,§, & **Wang, C.** Multi-parameterization of hydrological processes in an urban canopy model: Model development and multi-site evaluation. Oral: Session–Modelling Micro-scale Urban Climate Processes. 12th International Conference on Urban Climate (ICUC12), Rotterdam, The Netherlands, July 7–11, 2025. Abstract: https://doi.org/10.5194/icuc12-299
75. Huang, Y.*,§, **Wang, C.**, Lee, T. R., Danzig, T., & Pal, S. Evaluation of a high-resolution operational numerical weather prediction product in capturing urban heat dynamics in a small city. Oral: Session–

Modelling City-scale Urban Climate Processes. 12th International Conference on Urban Climate (ICUC12), Rotterdam, The Netherlands, July 7–11, 2025. Abstract: https://doi.org/10.5194/icuc12-493

74. Lipson, M.*, Grimmond, S., Best, M., Martilli, A., Christen, A., Simon, A., Coutts, A., Pitman, A., Tsiringakis, A., Lemonsu, A., Crawford, B., Han, B.-S., Heusinkveld, B., **Wang, C.**, de Munck, C., Meyer, D., Lee, D.-I., Velasco, E., Abramowitz, A., Manoli, G., Steeneveld, G.-J., Ward, H. C., Kondo, H., Sugawara, H., Hong, J.-W., Hong, J., McFadden, J., McNorton, J., Evans, J., Baik, J.-J., Oleson, K., Nice, K., Lee, K., Fortuniak, K., Järvi, L., Hendry, M., Thatcher, M., De Kauwe, M., Demuzere, M., Roth, M., Beyers, M., Roth, M., Varentsov, M., Meili, N., Chrysoulakis, N., Tapper, N., Michels, O., Schoetter, R., Lee, S.-H., Park, S.-B., Fatichi, S., Kotthaus, S., Boussetta, S., Earl, S., Jo, S., Machado, T., Sun, T., Masson, V., Chow, W., Pawlak, W., Kim, Y.-H., Kikegawa, Y., Takane, Y., & Wang, Z.-H. Oral: The Urban-PLUMBER multi-site model evaluation project: Phase 2 initial results. Session–Modelling City-scale Urban Climate Processes. 12th International Conference on Urban Climate (ICUC12), Rotterdam, The Netherlands, July 7–11, 2025. Abstract: https://doi.org/10.5194/icuc12-981

73. Li, H.*, Zhao, Y., **Wang, C.**, Ürge-Vorsatz, D., Carmeliet, J., & Bardhan, R. Insights into tree-centric urban cooling: A meta-analysis of 182 studies across 17 climate zones. Oral: Session–Nature-Based Solutions for Urban Heat Mitigation and Heat Justice: Research and Pathways. 12th International Conference on Urban Climate (ICUC12), Rotterdam, The Netherlands, July 7–11, 2025. Abstract: https://doi.org/10.5194/icuc12-191

72. **Wang, C.***., Hu, X.-M., & Leffel, J. Compound heat and ozone pollution in urban areas. Oral: Session–Modelling and Monitoring Complex Urban Systems. European Geosciences Union General Assembly 2025. Vienna, Austria, Apr 27–May 2, 2025. Abstract: https://doi.org/10.5194/egusphere-egu25-13711

71. Dong, Y.*, Cheng, X., Wang, S., Xiao, S., & **Wang, C.** Significant spatial heterogeneity and distinct determinants of N_2O emission in Pearl River Estuary, China. Oral: Session–Greenhouse Gas Dynamics and Fluxes in Aquatic Ecosystems. European Geosciences Union General Assembly 2025. Vienna, Austria, Apr 27–May 2, 2025. Abstract: https://doi.org/10.5194/egusphere-egu25-5790

70. **Wang, C.*** A comprehensive historical hourly weather database for U.S. urban energy system modeling. Oral [Invited]: Innovating for Impact: Data Institute for Society Challenges Inaugural Data Science Symposium. Norman, OK, Mar 26, 2025.

69. Wang, Q.*,§, Hu, X.-M., Klein, P., Weng, B., Xue, M., Honeycutt, W., Crowell, S., & **Wang, C.** Characterizing local methane enhancements at the Southern Great Plains ARM site in Oklahoma: meteorological influences and source attribution. Oral: 27th Conference on Atmospheric Chemistry, American Meteorological Society 105th Annual Meeting. New Orleans, LA, Jan 12–16, 2025. Abstract: https://ams.confex.com/ams/105ANNUAL/meetingapp.cgi/Paper/446459.

68. Wang, Q.*,§, Hu, X.-M., Honeycutt, W. T., **Wang, C.**, Weng, B., & Xue, M. Mobile CH_4 measurement and inversion & an interactive visualization platform. Poster: 27th Conference on Atmospheric Chemistry. American Meteorological Society 105th Annual Meeting. New Orleans, LA, Jan 12–16, 2025. Abstract: https://ams.confex.com/ams/105ANNUAL/meetingapp.cgi/Paper/451822.

67. Thompson, L.*,§, & **Wang, C.** Assessing the performance of a convection-permitting regional hydroclimate simulation in urban areas across the continental United States. Poster: 33rd Conference on Weather Analysis and Forecasting (WAF)/29th Conference on Numerical Weather Prediction (NWP), American Meteorological Society 105th Annual Meeting. New Orleans, LA, Jan 12–16, 2025. Abstract: https://ams.confex.com/ams/105ANNUAL/meetingapp.cgi/Paper/446912. [*Student Presentation Award*]

66. **Wang, C.***, Hu, X.-M., & Leffel, J.§ Characterizing compound heat and ozone pollution episodes in U.S. cities. Oral: Session–Urban Areas and Global Change. American Geophysical Union 2024 Annual

Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1602258.

65. Lu, M.*, **Wang, C.**, Jackson, R. B., Zhou, C., & Kempes, C. Worldwide scaling of waste generation in urban systems. Oral: Session–Urban Areas and Global Change. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1731134.

64. Ouyang, Z.*, Jackson, R. B., Saunois, M., Canadell, J. G., Zhao, Y., Krummel, P. B., Morfopoulos, C., Patra, P. K., Peters, G. P., Archibald, A. T., Dennison, F., Arora, V., Ciais, P., Davis, S., Feron, S., Hauglustaine, D., Jones, C., Jones, M. W., Kato, E., Kennedy, D., Knauer, J., Lienert, S., Lombardozzi, D., Melton, J. R., Nable, J., O'Sullivan, M., Petron, G., Poulter, B., Rogelj, J., Sandoval Calle, D. P., Smith, P., Suntharalingam, P., Tian, H., **Wang, C.**, & Wiltshire, A. The global hydrogen budget. Poster: Session–Multi-Greenhouse Gas Flux Assessments to Characterize Regional to Global Scale Anthropogenic and Biogenic Emissions from Terrestrial, Oceanic and Aquatic Systems. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1598982.

63. Wang, Q.*,§, Hu, X.-M., Klein, P., Honeycutt, W., Weng, B., Xue, M., Crowell, S., & **Wang, C.** Examination of meteorological factors and emissions sources leading to the large methane (CH_4) enhancements at the ARM site in Oklahoma. Poster: Session–Targeting Methane Mitigation: Quantification of Anthropogenic Methane Sources at All Scales Through Atmospheric Measurements. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1544297.

62. Hu, X.-M.*, Honeycutt, W. T., **Wang, C.**, Weng, B., & Xue, M. Observation and simulation of methane (CH_4) plumes during the morning boundary layer transition. Poster: Session–Emissions and Air Quality Impacts of Atmospheric Pollutants from Oil, Gas, and Coal Operations. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1543991.

61. Yang, X.*, Wang, C., & Wang, Z.-H.* Complex interplay between temperature and air pollutants in U.S. cities. Oral: Session–Urban Air Pollution: Interaction with Weather/Climate and Impact on Health. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1610050.

60. Leffel, J.*,§, & **Wang, C.** Investigating compound heat wave and fine particulate matter pollution events in urban areas. Poster: Session–Extreme Weather and Climate in Urban Areas, Their Social Impacts, and Mitigation. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1545993.

59. Thompson, L.*,§, & **Wang, C.** Hydrometeorological evaluation of a continental-scale convection-permitting simulation across urban environments. Oral: Session–Urban Areas and Global Change. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1602473.

58. Huang, Y.*,§, & **Wang, C.** Enhancing the representation of hydrological processes in an urban canopy model: A multi-parameterization approach. Oral: Session–Advancing Representation of Urban Processes and Dynamics in Models Across Scales. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1591503.

57. Li, Q.*, Padilla, L., Thompson, T., Xiao, S., Mohr, E. J., Zhou, X., Kacharava, N., Cui, Y., & **Wang, C.** A modeling framework to assess fenceline monitoring and self-reported upset emissions of benzene from multiple oil refineries in Texas. Poster [invited]: Session–Atmospheric processes at the kilometer

scale: implications for air quality, urban climate, weather, wildfires, and energy. American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024. Abstract: https://agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1607009.

56. Huang, Y.*,§, & **Wang, C.** Multi-parameterization of hydrological processes in a single-layer urban canopy model. Poster: 18th Annual Graduate Climate Conference. Pack Forest, WA, Nov 1–3, 2024.

55. Leffel, J.*,§, & **Wang, C.** Investigating compound heat wave and fine particulate matter ($PM_{2.5}$) pollution events in urban areas. Poster: GIS Day, University of Oklahoma. Norman, OK, Oct 31, 2024.

54. Thompson, L.*,§, & **Wang, C.** A long-term regional assessment of the CONUS404 bulk parameterization in urban areas. Poster: GIS Day, University of Oklahoma. Norman, OK, Oct 31, 2024. [*1st Place in the Competition*]

53. Namjou, K.*, Honeycutt, W. T., Khiabani, P. M., Kayacan, E., Crowell, S. R. M., **Wang, C.**, & Weng, B. A comprehensive survey of methane detection technologies. Poster: Closing the Gap: Strategies for Effective Methane Emissions Reduction Symposium, University of Oklahoma. Norman, OK, Aug 21, 2024.

52. Honeycutt, W. T.*, Namjou, K., Khiabani, P. M., Crowell, S. M. R., **Wang, C.**, Kayacan, E., & Weng, B. Analysis of networks for methane emissions monitoring. Poster: Closing the Gap: Strategies for Effective Methane Emissions Reduction Symposium, University of Oklahoma. Norman, OK, Aug 21, 2024.

51. Hu, X.-M.*, Honeycutt, W. T., **Wang, C.**, Weng, B., & Xue, M. Observation and simulation of methane (CH_4) plumes during the morning boundary layer transition. Poster: Closing the Gap: Strategies for Effective Methane Emissions Reduction Symposium, University of Oklahoma. Norman, OK, Aug 21, 2024.

50. Wang, Q.*,§, Hu, X.-M., Klein, P., Xue, M., Honeycutt, W., **Wang, C.**, Weng, B., & Crowell, S. Local methane (CH_4) dynamics at the SGP ARM site: meteorological influences and source attribution. Poster: Closing the Gap: Strategies for Effective Methane Emissions Reduction Symposium, University of Oklahoma. Norman, OK, Aug 21, 2024.

49. **Wang, C.***., Reyna, J., Horsey, H., & Jackson, R. B. Urban energy futures: Unraveling the dynamics of city-scale building energy use and CO_2 emissions under mid-century scenarios. Oral: Session–Urban Geo-sciences: Modelling and Monitoring Complex Urban Systems from the State of the Air to Planning Challenges. European Geosciences Union General Assembly 2024. Vienna, Austria, Apr 14–19, 2024. Abstract: https://doi.org/10.5194/egusphere-egu24-13309.

48. **Wang, C.*** A multi-scale methane monitoring system for enhancing emission detection, quantification, and prediction. Poster: 2024 National Energy Technology Laboratory (NETL) Resource Sustainability Project Review Meeting. Pittsburgh, PA, Apr 2–4, 2024. https://netl.doe.gov/sites/default/files/netl-file/24RS_Poster_Wang.pdf.

47. Wimberly, M. C., Deng, C.*, **Wang, C.**, & Mukherjee, S. Multi-source, multi-resolution imaging of urban land cover to improve predictions of human heat exposures. Poster: 2024 NASA Land-Cover and Land-Use Change (LCLUC) Science Team Meeting. Gaithersburg, MD, Apr 2–4, 2024.

46. Henry, S.*,§, & **Wang, C.** Compound heat wave and $PM_{2.5}$ pollution episodes in U.S. cities. Poster: 12th Symposium on Building a Weather-Ready Nation, American Meteorological Society 104th Annual Meeting. Baltimore, MD, Jan 28–Feb 1, 2024. Abstract: https://ams.confex.com/ams/104ANNUAL/meetingapp.cgi/Paper/431667.

45. **Wang, C.*** Historical Comprehensive Hourly Urban Weather Database (CHUWD-H) for energy system modeling in U.S. cities. Oral: Session–Urban Areas and Global Change. American Geophysical

Union 2023 Fall Meeting. San Francisco, CA, Dec 11–15, 2023. Abstract: https://agu.confex.com/agu/fm23/meetingapp.cgi/Paper/1306204.

44. **Wang, C.*** Reducing the primary energy consumption of urban buildings through decarbonizing the U.S. electric power sector. Poster: 2023 Tribal Clean Energy Sovereignty Symposium & Summit. Norman, OK, Sep 27–29, 2023.

43. **Wang, C.***, Yang, X., & Wang, Z.-H. Modeling urban climates as complex dynamic systems. Poster: Session–Integrated assessments of urban climate: Inter-scale Interaction of Urban Phenomena and Climate. 11th International Conference on Urban Climate (ICUC11). Sydney, Australia, Aug 28–Sep 1, 2023.

42. **Wang, C.***, Song, J., Shi, D., Reyna, J., Horsey, H., Feron, S. C., Zhou, Y., Ouyang, Z., Li, Y., & Jackson, R. B. Mid-century urban building energy consumption in the U.S. influenced by climate and socioeconomic changes. Oral: Special session–Extreme Weather and Climate in Urban Areas, Their Social Impacts, and Mitigation. 11th International Conference on Urban Climate (ICUC11). Sydney, Australia, Aug 28–Sep 1, 2023.

41. **Wang, C.***, Sierra Huertas, D., Carstensen, L. L., & Jackson, R. B. Longevity-ready cities: creating better urban physical environments for century-long lives. Oral: Special session–Climate Change, Built Environment and Aging Society. 11th International Conference on Urban Climate (ICUC11). Sydney, Australia, Aug 28–Sep 1, 2023.

40. Lipson, M.*, Grimmond, S., Best, M., Abramowitz, G., Pitman, A., Coutts, A., Tapper, N., Baik, J.-J., Beyers, M., Blunn, L., Boussetta, S., Bou-Zeid, E., De Kauwe, M. G., de Munck, C., Demuzere, M., Fatichi, S., Fortuniak, K., Han, B.-S., Hendry, M., Kikegawa, Y., Kondo, H., Lee, D.-I., Lee, S.-H., Lemonsu, A., Machado, T., Manoli, G., Martilli, A., Masson, V., McNorton, J., Meili, N., Meyer, D., Nice, K. A., Oleson, K. W., Park, S.-B., Roth, M., Schoetter, S., Simon, A., Steeneveld, G.-J., Sun, T., Takane, Y., Thatcher, M., Tsiringakis, A., Varentsov, M., **Wang, C.**, & Wang, Z.-H. The Urban-PLUMBER model evaluation project: Phase 1 results. Oral: Session–Urban Climate Methods: Urban Canopy Parameterizations and Models. 11th International Conference on Urban Climate (ICUC11). Sydney, Australia, Aug 28–Sep 1, 2023. (Authors ordered alphabetically)

39. Li, P.*, **Wang, C.**, & Wang, Z.-H. Co-benefit of carbon-heat mitigation by irrigating urban greenery in the United States. Oral: Session–Urban Environment and Health Impacts I. Special Symposium on Urban Environment, American Meteorological Society 103rd Annual Meeting. Denver, CO, Jan 8–12, 2023. Abstract: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/415744.

38. Yang, X.*, Wang, Z.-H., & **Wang, C.** Causal propagation of extreme heatwaves in the urban USA. Oral: Session–Urban Climate Modeling: Approaches and Tools for Pathways to Societal Resilience and Adaptation. 18th Symposium on Societal Applications: Policy, Research and Practice, American Meteorological Society 103rd Annual Meeting. Denver, CO, Jan 8–12, 2023. Abstract: https://ams.confex.com/ams/103ANNUAL/meetingapp.cgi/Paper/413359.

37. **Wang, C.***, Wang, Z.-H., & Ryu, Y.-H. A single-layer urban canopy model with transmissive radiation exchange between trees and street canyons. Oral: Session–Urban Areas and Global Change. American Geophysical Union 2022 Fall Meeting. Chicago, IL, Dec 12–16, 2022. Abstract: https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1084322.

36. **Wang, C.***, Song, J., Shi, D., Reyna, J., Horsey, H., Feron, S. C., Zhou, Y., Ouyang, Z., Li, Y., & Jackson, R. B. Heterogeneous response of city-level building energy use to future climate change, socioeconomic development, and power sector decarbonization. Oral: Session–MultiSector Dynamics: Environmental Change, Resilience, and Society in Urban Areas Under a Changing Climate. American Geophysical Union 2022 Fall Meeting. Chicago, IL, Dec 12–16, 2022. Abstract: https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1083474.

35. Yang, X.*, Wang, Z.-H., & **Wang, C.** Finding causal gateways of heatwave propagation among U.S. cities. Poster: Session–Extreme Variability and Complexity: from Theory to Modeling and Big Data, from Urban Systems to Climate and Pandemics. American Geophysical Union 2022 Fall Meeting. Chicago, IL, Dec 12–16, 2022. Abstract: https://agu.confex.com/agu/fm22/meetingapp.cgi/Paper/1060203.

34. Yang, X.*, Wang, Z.-H., & **Wang, C.** Causal analysis of spatial patterns of heatwaves among U.S. cities. Poster: 2022 International Association for Urban Climate (IAUC) Virtual Poster Conference. Virtual, Aug 30–Sep 1, 2022. Abstract: https://iaucposter2022.com/wp-content/uploads/2022/08/AbstractBook_2022IAUCposter.pdf.

33. Zhu, B.*, Lui, N., Irvin, J., Le, J., Tadwalkar, S., **Wang, C.**, Ouyang, Z., Liu, F. Y., Ng., A. Y., & Jackson, R. B. METER-ML: A multi-sensor Earth observation benchmark for automated methane source mapping. Oral: 2nd workshop on Complex Data Challenges in Earth Observation (CDCEO) 2022, the 31st International Joint Conference on Artificial Intelligence and the 25th European Conference on Artificial Intelligence (IJCAI-ECAI 2022). Vienna, Austria, Jul 23–29, 2022. Presentation: https://www.youtube.com/watch?v=WGVy_viLhgU.

32. Yang, X.*, Wang, Z.-H., **Wang, C.**, & Lai, Y.-C. Finding regional atmospheric mediators in the U.S. using causal inference. Poster: 12th Annual SSEBE Graduate Research Symposium. Tempe, AZ, Feb 11, 2022.

31. Yang, X.*, Wang, Z.-H., & **Wang, C.** Detecting critical transitions in urban hydrological system in the Contiguous United States. Oral: Joint Session–Urban Hydrology: Modeling and Instrumentation. 36th Conference on Hydrology and 17th Symposium on Societal Applications: Policy, Research and Practice, American Meteorological Society 102nd Annual Meeting. Houston, TX, Jan 23–27, 2022. Abstract: https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Paper/388359.

30. Li, P.*, Wang, Z.-H., & **Wang, C.** Estimating the impact of urban irrigation on CO_2 exchange using a coupled WRF-UCM and photosynthesis model. Oral: Session–Urban Areas and Global Change. American Geophysical Union 2021 Fall Meeting. New Orleans, LA, Dec 13–17, 2021. Abstract: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/801887.

29. Wang, Z.-H., **Wang, C.**, & Yang, X.* Simulating heat extremes using dynamic synchronization in complex climate networks. Poster: Session–Harnessing Earth System Data for Understanding and Predicting Climate Extremes in Agriculture and Urban Systems. American Geophysical Union 2021 Fall Meeting. New Orleans, LA, Dec 13–17, 2021. Abstract: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/804272.

28. Yang, X.*, Wang, Z.-H., & **Wang, C.** Data-driven prediction of urban hydrological transitions in the Contiguous United States. Poster: Session–Harnessing Earth System Data for Understanding and Predicting Climate Extremes in Agriculture and Urban Systems. American Geophysical Union 2021 Fall Meeting. New Orleans, LA, Dec 13–17, 2021. Abstract: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/800017.

27. **Wang, C.*** New map of life fellow lightning talk. Lightning: A New Map of Life: Engineering Change Conference. Stanford, CA, Nov 4–5, 2021.

26. Lipson, M.*, Grimmond, C. S. B., Best, M., Martilli, A., Simon, A., Coutts, A., Pitman, A., Tsiringakis, A., Lemonsu, A., Han, B.-S., **Wang, C.**, De Munck, C., Meyer, D., Lee, D.-I., Abramowitz, G., Manoli, G., Steeneveld, G.-J., Kondo, H., McNorton, J., Baik, J.-J., Oleson, K., Nice, K., Fortuniak, K., Hendry, M., Thatcher, M., De Kauwe, M., Demuzere, M., Beyers, M., Roth, M., Meili, N., Tapper, N., Schoetter, R., Lee, S.-H., Park, S.-B., Fatichi, S., Boussetta, S., Machado, T., Sun, T., Masson, V., Kikegawa, Y., Takane, Y., & Wang, Z.-H. Urban-PLUMBER model evaluation project: initial results. Oral: Session–Urban Climate, Urban Biometeorology, and Science Tools for Cities. European

Geosciences Union General Assembly 2021 (virtual), Apr 19–30, 2021. https://doi.org/10.5194/egusphere-egu21-15230. Poster: https://presentations.copernicus.org/EGU21/EGU21-15230_presentation.pdf. (Authors ordered alphabetically)

25. Sun, L.*,§, **Wang, C.**, & Wang, Z.-H. Climatology of solar radiation in the Contiguous United States (1960–2019). Poster: Session–Applied Meteorology and Climatology. American Meteorological Society 20th Annual Student Conference at 101st Annual Meeting. New Orleans, LA (virtual), Jan 10–15, 2020. Abstract and Poster: https://ams.confex.com/ams/101ANNUAL/meetingapp.cgi/Paper/385237.

24. Sun, L.*,§, **Wang, C.**, & Wang, Z.-H. Long-term solar radiation patterns across the Contiguous United States. Poster: Session–Bright STaRS: Bright Students Training as Research Scientists. American Geophysical Union 2020 Fall Meeting. San Francisco, CA (virtual), Dec 1–17, 2020.

23. **Wang, C.*** Landscape phenology and soil moisture dynamics influenced by irrigation in a desert urban environment. Oral: Session–Simulation, Prediction & Evaluation. 54th International Conference of the Architectural Science Association (ASA). Auckland University of Technology, Auckland, New Zealand (virtual), Nov 26–27, 2020. Presentation: https://www.youtube.com/watch?v=-EXYrdunyMg.

22. **Wang, C.***, Li, Q., & Wang, Z.-H. The residence time of pollutants emitted within the urban canopy influenced by street canyon geometry and emission conditions. Oral: Session–Modeling and Monitoring of Air Pollution in the Urban Environment. 21st Joint Conference on the Applications of Air Pollution Meteorology with the Air & Waste Management Association (A&WMA), American Meteorological Society 100th Annual Meeting. Boston, MA, Jan 12–16, 2020. Abstract: https://ams.confex.com/ams/2020Annual/webprogram/Paper364856.html.

21. **Wang, C.***, Wang, Z.-H., & Yang, J. Evaluating the potential of irrigation for mitigating urban heat: trade-off between water use and heat mitigation capacity. Poster: Session–Interdisciplinary Sustainable Solutions for Urban Areas. American Geophysical Union 2019 Fall Meeting. San Francisco, CA, Dec 09–13, 2019. https://doi.org/10.1002/essoar.10501419.1. Abstract and Poster: https://agu.confex.com/agu/fm19/meetingapp.cgi/Paper/508535.

20. **Wang, C.***, Wang, Z.-H., Wang, C. Y., & Myint, S. W. The cooling capacity of urban trees in response to thermal extremes in U.S. cities. Poster: Urban Climate Research Center 2nd Annual Student Poster Competition. Tempe, AZ, Mar 27, 2019.

19. **Wang, C.***, Wang, Z.-H., & Li, Q. Structure of similarity-driven clustering among U.S. cities in response to environmental stressors. Poster: 9th Annual SSEBE Graduate Research Symposium. Tempe, AZ, Feb 22, 2019.

18. **Wang, C.***, & Wang, Z.-H. A statistical view of the Phoenix urban heat island during the past 86 years (1933–2018). Poster: Central Arizona–Phoenix Long-Term Ecological Research (CAP LTER) 21st Annual All Scientists Meeting and Poster Symposium. Scottsdale, AZ, Jan 11, 2019. Poster: https://d3dqsm2futmewz.cloudfront.net/docs/symposia/symp2019/Wang-Wang.pdf.

17. **Wang, C.***, & Wang, Z.-H. Temperature regulation of the surface cooling rate of urban trees under climatic extremes. Oral: 32nd Conference on Climate Variability and Change, American Meteorological Society 99th Annual Meeting. Phoenix, Arizona, Jan 06–10, 2019. Abstract and Presentation: https://ams.confex.com/ams/2019Annual/webprogram/Paper350075.html.

16. **Wang, C.***, Li, Q., & Wang, Z.-H. Quantifying the impact of urban trees on pollutant dispersion using a coupled LES–Lagrangian stochastic model. Oral: Session–Numerical Studies of Urban Environments. 10th International Conference on Urban Climate/14th Symposium on the Urban Environment (ICUC10). City University of New York, New York City, NY, Aug 06–09, 2018. Abstract and Presentation: https://ams.confex.com/ams/ICUC10/meetingapp.cgi/Paper/341784.

15. **Wang, C.***, Wang, Z.-H., Li, Q., & Yang, J. A coupled large-eddy simulation–Lagrangian stochastic modeling framework with applications to urban areas. Oral: Session–Modeling and Observations in Heterogeneous, Complex, and Urban Terrain, including Vegetated Surfaces and Canopies. 23rd Symposium on Boundary Layers and Turbulence/21st Conference on Air-Sea Interaction (23BLT/21ASI). Oklahoma City, OK, Jun 11–15, 2018. Abstract and Presentation: https://ams.confex.com/ams/23BLT21ASI/webprogram/Paper344260.html.

14. **Wang, C.**, Li, Q., & Wang, Z.-H.* Impacts of urban trees on particle dispersion in street canyons: Modeling and applications. Oral: Session–Urban Fluid Mechanics. 8th International Symposium on Environmental Hydraulics (ISEH). University of Notre Dame, Notre Dame, IN, Jun 04–07, 2018.

13. **Wang, C.***, & Wang, Z.-H. Solution or problem? Effects of urban trees on the turbulent transport of airborne pollutant from traffic emission. Poster: Urban Climate Research Center 1st Annual Student Poster Competition. Tempe, AZ, Apr 03, 2018. [*1st Place in the Competition*]

12. **Wang, C.***, & Wang, Z.-H. Numerical simulations of street trees in influencing the urban air quality. Poster: 8th Annual SSEBE Graduate Research Symposium. Tempe, AZ, Feb 16, 2018. [*3rd Place in the Competition*]

11. **Wang, C.***, Wang, Z.-H., Yang, J., & Li, Q. A Lagrangian stochastic urban footprint model: Model development and evaluation. Oral: 20th Joint Conference on the Applications of Air Pollution Meteorology with the Air & Waste Management Association (A&WMA), American Meteorological Society 98th Annual Meeting. Austin, TX, Jan 07–11, 2018. Abstract: https://ams.confex.com/ams/98Annual/webprogram/Paper322222.html.

10. **Wang, C.***, Wang, C. Y., Myint, S. W., & Wang, Z.-H. Spatial and temporal variability of satellite-based aerosol optical depth in the dynamic urban environment. Poster: CAP LTER 20th Annual All Scientists Meeting and Poster Symposium. Scottsdale, AZ, Jan 05, 2018. Poster: https://d3dqsm2futmewz.cloudfront.net/docs/symposia/symp2018/Wang-etal.pdf.

9. **Wang, C.***, Upreti, R., Wang, Z.-H., & Yang, J. Impacts of trees on urban environment in the contiguous United States. Poster: Session–Advances in Understanding Land–Atmosphere Interactions in a Changing Environment. American Geophysical Union 2017 Fall Meeting. New Orleans, LA, Dec 11–15, 2017. Abstract & Poster: https://agu.confex.com/agu/fm17/meetingapp.cgi/Paper/205916.

8. **Wang, C.*** Evaluating the effects of urban trees on land surface temperature during cold spells. Lightning: Session–Applications of GIS in Sustainable Engineering and the Built Environment. GIS Day 2017. ASU Library Map and Geospatial Hub, Tempe, AZ, Nov 17, 2017.

7. **Wang, C.***, Wang, Z.-H., Yang, J., & Krayenhoff, E. S. Radiative shading effects of trees on the built environment in the contiguous United States. Poster: 3rd Urban Water Innovation Network (U-WIN) Research Team Annual Meeting. Fort Collins, CO, Jul 31–Aug 02, 2017. [*2nd Place in the Competition*] Poster: https://erams.com/UWIN/wp-content/uploads/2017/08/Wang-Radiative-Effects-of-Tress_compressed.pdf.

6. **Wang, C.***, Upreti, R., Wang, Z.-H., & Yang, J. Impact of shade trees on urban hydroclimate for Phoenix and the continental United States. Poster: CAP LTER 19th Annual All Scientists Meeting and Poster Symposium. Scottsdale, AZ, Jan 13, 2017. Poster: https://d3dqsm2futmewz.cloudfront.net/docs/symposia/symp2017/Wang-etal.pdf.

5. **Wang, C.***, She, Y., Liu, J., Li, X., Li, Y., & Li, X. Emission of greenhouse gases from the Meiziya Reservoir. Oral: 2013–2014 College Students Science and Technology Projects Symposium, China Three Gorges University. Yichang, China, Nov 2014. [*First Prize in the Competition*]

4. Luo Z.*, **Wang, C.**, Peng, Y., & Liu, W. Optimal reservoir operation for flood control with rainfall forecasting. Oral: 2012–2013 College Students Science and Technology Projects Symposium, China Three Gorges University. Yichang, China, Oct 2013. [*Second Prize in the Competition*]

3. **Wang, C.***, Li, X., Zhong, H., Ling, W., Zhao, P., & Li, X. Simulating the methane emission from reservoir sediments. Oral: 2012–2013 College Students Science and Technology Projects Symposium, China Three Gorges University. Yichang, China, Oct 2013. [*First Prize in the Competition*]

2. **Wang, C.***, Luo, Z., Lei, Y., Wang M., & Liu, Y. The development of a hydropower station with flood discharge, power generation, and energy dissipation. Oral: 3rd China National Undergraduate Hydraulic Innovational Design Competition. North China University of Water Resources and Electric Power, Zhengzhou, China, Jul 29–31, 2013. [*Second Prize in the Competition*]

1. **Wang, C.***, Luo, Z., & Xuan, Y. Evaluation of optimal operation models for Geheyan Reservoir. Oral: 2011–2012 College Students Science and Technology Projects Symposium, China Three Gorges University. Yichang, China, Oct 2012. [*First Prize in the Competition*]

PATENTS

9. **Wang, C.**, Zhao, P., Li, X., Liu, J., She, Y., & Zhong, H. An air sample and inhalable particle sampler. Chinese Utility Model Patent, Ref. No: CN201420174368.5, Filed: Apr 11, 2014, Patented: Aug 06, 2014. https://doi.org/10.13140/RG.2.1.3507.6961.

8. **Wang, C.**, Luo, Z., & Peng, L. An automatic flood diversion and aerating system for urban landscape river channels. Chinese Utility Model Patent, Ref. No: CN201420121440.8, Filed: Mar 18, 2014, Patented: Aug 06, 2014. https://doi.org/10.13140/RG.2.1.1410.5448.

7. **Wang, C.** A solar screened water bloom eliminating boat. Chinese Utility Model Patent, Ref. No: CN201320536201.4, Filed: Aug 30, 2013, Patented: Jun 04, 2014. https://doi.org/10.13140/RG.2.1.2459.1204.

6. **Wang, C.**, Luo, Z., Lei, Y., Wang, M., Liu, Y., & Peng, H. A flood discharge, power generation, and energy dissipation hydropower station. Chinese Utility Model Patent, Ref. No: CN201320661937.4, Filed: Oct 25, 2013, Patented: Apr 02, 2014. https://doi.org/10.13140/RG.2.1.4556.2726.

5. **Wang, C.** Spillway impulse water turbine. Chinese Utility Model Patent, Ref. No: CN201320578623.8, Filed: Sep 18, 2013, Patented: Mar 26, 2014. https://doi.org/10.13140/RG.2.1.4031.9848.

4. **Wang, C.** An anti-blocking catch basin lid. Chinese Utility Model Patent, Ref. No: CN201320535504.4, Filed: Aug 30, 2013, Patented: Feb 12, 2014. https://doi.org/10.13140/RG.2.1.5080.5603.

3. **Wang, C.** The water stopper for gas inlet system of gas analyzer. Chinese Utility Model Patent, Ref. No: CN201320561220.2, Filed: Sep 11, 2013, Patented: Jan 29, 2014. https://doi.org/10.13140/RG.2.1.2983.4083.

2. **Wang, C.**, Luo, Z., Lei, Y., Wang, M., Liu, Y., & Peng, H. A flood discharge, power generation, and energy dissipation hydropower station. Chinese Invention Patent, Ref. No: CN201310508610.8, Filed: Oct 25, 2013, Patented (Public): Jan 22, 2014. https://doi.org/10.13140/RG.2.1.1082.8648.

1. **Wang, C.** A multifunctional field environment factor collection work box. Chinese Utility Model Patent, Ref. No: CN201320535849.X, Filed: Aug 30, 2013, Patented: Jan 01, 2014. https://doi.org/10.13140/RG.2.1.3180.0168.

RESEARCH GRANTS

Research Grants at the University of Oklahoma as Lead PI/Co-PI/Collaborator (2022–present)

Digital twins empowered mesoscale urban climate modeling: Enhancing dynamic land cover and land use representation in WRF model with multidimensional remote sensing 2025.05–2028.04

National Aeronautics and Space Administration (No. 80NSSC25K7496); Role: **Co-PI**; PIs: Deng, C., Wang, C. Award Amount: $709,031.

Coupling multi-source earth observation data with Artificial Intelligence to update local climate zone in cities of the Global South 2025.01–2027.12

National Aeronautics and Space Administration – Future Investigators in NASA Earth and Space Science and Technology (FINESST) (No. 80NSSC24K1609); Role: **Collaborator**; Student PI: Najafzadeh, F. PI: Deng, C. Award Amount: $149,975.

Compound heat and ozone pollution episodes in the urban environment: dynamics, mechanisms, and mitigation with nature-based solutions 2024.08–2027.08

National Aeronautics and Space Administration – Early Career Investigator Program in Earth Science (ECIP-ES) (No. 80NSSC24K1056); Role: **Single PI**; Award Amount: $300,000.

Coastal wetland dynamics and impacts on hurricane flood risk along the Texas Gulf Coast in a changing climate 2024.08–2027.07

U.S. Geological Survey (No. G24AC00475); Role: **Lead PI**; PIs: Wang, C., Deng, C., Hu, X., Hong, Y., Osland, M.; Award Amount: $449,951.

Forging global alliances for climate, weather, and water: The example of India 2024.07–2026.06

University of Oklahoma Big Idea Challenge (BIC) 2.0; Role: **Co-PI**; PIs: Kirstetter, P., Clark III, R., Furtado, J., Gourley, J., Gupta, K., Kim, M., Kyprioti, K., Moore III, B., Pegion, K., Ripberger, J., Venkatesan, T., Wang, C.; Award Amount: $250,000.

Small unoccupied aerial system with LiDAR and thermal sensors for spatially explicit environmental data collection 2024.05–2025.04 (completed)

University of Oklahoma Strategic Equipment Investment Program (SEIP); Role: **Collaborator**; PI: Nairn, R. Award Amount: $40,000.

Multi-source, multi-resolution imaging of urban land cover to improve predictions of human heat exposures 2024.02–2027.01

National Aeronautics and Space Administration (No. 80NSSC24K0357); Role: **Co-PI**; PIs: Wimberly, M., Deng, C., & Wang, C.; Award Amount: $753,448.

RII Track-4:NSF: An integrated urban meteorological and building stock modeling framework to enhance city-level building energy use predictions 2024.01–2025.12

National Science Foundation (No. OIA-2327435); Role: **Single PI**; Award Amount: $295,683.

Oklahoma Climate Pollution Reduction Plan (CPRGOK) Phase 1 2023.11–2024.08 (completed)

U.S. Environmental Protection Agency (No. 02F36201); Role: **Institutional Co-PI**; Lead Organization: Oklahoma Department of Environmental Quality; Institutional PIs: Filley, T. (lead), Acevedo, O. C., Ebert, D., Fiebrich, C., Floyd, R., Greene, S., Hanak, J., Harris, J., Hu, X.-M., Illston, B., Klein, P., Mullenbach, L., Wang, C., Warnken, C., Weng, B., Xiao, X., Xue, M., & Zaman, M.; Award Amount: $3,000,000.

A planetary-scale data–model integration framework to resolve urban impacts across scales and examine weather extremes over coastal U.S. cities 2023.10–2028.09

Department of Energy Early Career Research Program; Role: **Collaborator**; PI: Chakraborty, T. C.

A regional-scale showcase of hybrid methane sensing networks in the Anadarko Basin 2023.09–2027.09
U.S. Department of Energy (No. DE-FE0032285); Role: **Co-PI**; PIs: Weng, B. (lead), Ebert, D., Filley, T., Hu, X.-M., Kayacan, E., Li, B., Wang, C., & Xue, M.; Award Amount: $8,494,952.

A multi-scale methane monitoring system for enhancing emission detection, quantification and prediction 2023.09–2024.08 (completed)
U.S. Department of Energy (No. DE-FE0032292); Role: **Co-PI & Co-Lead**; PIs: Ebert, D. (lead), Bedle, H., Crowell, S., Danala, G., Hu, X.-M., Kayacan, E., Koch, J., Suriamin, F., Wang, C., Weng, B., & Xue, M.; Award Amount: $1,146,992.

Employing a combined observation and simulation-based framework to investigate spatiotemporal variability in urban heat and associated heat advection 2023.08–2025.01 (completed)
National Oceanic and Atmospheric Administration (No. NA21OAR4590361); Role: **Co-PI & Institutional PI**; PIs: Pal, S. & Wang, C.; Award Amount: $335,981.

AccelNet-Design: A Global Network of Networks of Integrated Urban Services (GNNIUS) for healthy and smart cities 2023.05–2026.04
National Science Foundation (No. CNS-2301858); Role: **Co-PI & Institutional PI**; PIs: Li, Q. (lead), Albertson, J., Crawford, B., Ghosh, A., & Wang, C.; Award Amount: $249,021.

Integrating multiple datasets to develop a historical Comprehensive Hourly Urban Weather Database (CHUWD) for energy system modeling 2022.12–2023.12 (completed)
Data Institute for Societal Challenges (DISC); Role: **Single PI**; Award Amount: $10,000.

Research Computing Allocations at the University of Oklahoma (2022–present)

Enhancing building energy use predictions by integrating BuildStock with urban climate simulations 2025.03–2025.09
National Renewable Energy Laboratory; Role: **Faculty advisor**; Award Amount: 150,000 Kestrel allocation units.

Decadal scale urban climate modeling for building energy use predictions in cities across the continental United States 2024.11–2025.12
National Center for Atmospheric Research (No. UOKL0055); Role: **Lead PI**; Award Amount: 14,000,000 Derecho core-hours and 10,000 Casper core-hours.

Multiscale urban climate modeling for building energy use predictions – preliminary experiments 2024.05–2025.12
National Center for Atmospheric Research (No. UOKL0055); Role: **Lead PI**; Award Amount: 1,000,000 Derecho core-hours, 5,000 Casper core-hours, and 2,000 Derecho-GPU core-hours.

Multilevel evaluation of long-term urban climate modeling based on CONUS404 2024.01–2024.12 (completed)
National Center for Atmospheric Research (No. UOKL0051); Role: **Faculty advisor**; Award Amount: 5,000 Casper core-hours.

Sensitivity of urban parameterizations for multi-resolution urban climate modeling during extreme heat waves 2023.02–2025.02 (completed)

National Center for Atmospheric Research (No. UOKL0044); Role: **Lead PI**; Award Amount: 400,000 Cheyenne/Derecho core-hours and 5,000 Casper core-hours.

Research Grants at Stanford University as Postdoctoral Researcher (2020–2022)

METER: Methane Tracking Emissions Reference 2021.10–2022.08
High Tide Foundation; Role: **Postdoctoral Researcher**; PI: Jackson, R. B.; Award Amount: $1,000,000.

Research Grants at Arizona State University as Graduate Research Associate (2015–2019)

Critical review and gap analysis of impacts from pavements on urban heat island 2018.07–2019.12
National Asphalt Pavement Association, co-sponsored by Urban Climate Research Center and Arizona Pavements/Materials Conference Committee; Role: **Graduate Research Associate**; PIs: Wang, Z., & Kaloush, K.; Award Amount: $63,326.

Rapid modifications of land surface temperature during rainfall: basics and implications 2017.11–2018.01
U.S. Army Research Laboratory, U.S. Department of Defense (No. W911NF-15-1-0003); Role: **Graduate Research Associate**; PIs: Bou-Zeid, E., Hultmark, M., Wang, Z., & Kaloush, K.; Award Amount: $360,262.

Sustainable urban development in the sun corridor: finding engineering alternatives through coupled WRF-urban land surface modeling 2016.08–2019.02
National Science Foundation (No. CBET-1435881); Role: **Graduate Research Associate**; PI: Wang, Z.; Award Amount: $299,838.

Sustainability and scaling of urban transportation networks 2016.05–2016.12
National Transportation Center (NTC) @ Maryland (No. DTRT13-G-UTC30); Role: **Graduate Research Associate**; PIs: Wang, Z., & Kaloush, K.; Award Amount: $30,062.

SRN: Urban Water Innovation Network (U-WIN): transitioning toward sustainable urban water systems 2015.08–2017.11
National Science Foundation (No. CBET-1444758); Role: **Graduate Research Associate**; PIs: Arabi, M., Pivo, G., Welty, C., Bou-Zeid, E., & Haggerty, R.; Award Amount: $ 12,741,385.

Research Grants at China Three Gorges University as Student PI/Research Assistant (2011–2015)

Quantifying the emissions of greenhouse gases from the Meiziya Reservoir 2013.09–2015.06
China Three Gorges University and Collaborative Innovation Center for Geo-Hazards and Eco-Environment in Three Gorges Area, Hubei Province (CICGE) (No. SH2013-2014 025 and No. CTGU2013-2014 A04); Role: **Student PI**; Advisor: Xiao, S.

Major components of photochemical pollution episodes in Yichang, China 2013.09–2014.09
China Three Gorges University (No. SH2013-2014 026); Role: **Research Assistant**; Student PI: Yang, C.; Advisor: Xiao, S.

Carbon emissions from the Three Gorges Reservoir 2013.06–2015.05
National Natural Science Foundation of China (No. 41101511); Role: **Research Assistant**; PI: Xiao, S.

A hydropower station with flood discharge, power generation, and energy dissipation 2013.02–2013.08

China Three Gorges University; Role: **Student PI**; Advisor: Liu, Y., & Peng, H.

Flood risk management with ensemble precipitation predictions 2012.10–2013.09
National Natural Science Foundation of China (No. 41273110); Role: **Research Assistant**; PI: Liu, J.

Simulation of methane emission from reservoir sediments 2012.10–2013.06
China Three Gorges University (No. SH2012-2013 003); Role: **Student PI**; Advisor: Xiao, S.

Optimal reservoir operation for flood control with rainfall forecasting 2012.10–2013.05
China Three Gorges University (No. SH2012-2013 006); Role: **Research Assistant**; Student PI: Luo, Z.; Advisor: Liu, J.

Evaluation of optimal operation models for Geheyan Reservoir 2011.10–2012.10
China Three Gorges University (No. SH2011-2012 052); Role: **Student PI**; Advisor: Xuan, Y.

SELECTED HONORS AND AWARDS

Faculty Award for Excellence in Research, School of Meteorology, University of Oklahoma	2025
Vice President for Research and Partnerships Award for Excellence in Transdisciplinary, Convergent Research, University of Oklahoma	2025
Early Career Awardee, Vice President for Research & Partnerships, University of Oklahoma	2025
National Aeronautics and Space Administration Early Career Investigator Award	2024
College of Atmospheric & Geographic Sciences Outstanding Research Performance Award, University of Oklahoma	2024
Vice President for Research and Partnerships Annual Award for Excellence in Research Grants, University of Oklahoma	2024
National Science Foundation EPSCoR Research Fellow	2024
American Meteorological Society Early Career Leadership Academy (ECLA) member	2023
2019 Chinese Government Award for Outstanding Self-financed Students Abroad, China Scholarship Council, Ministry of Education, China (500 recipients each year worldwide)	2020
Graduate College Completion Fellowship (twice), Arizona State University	2019
Outstanding Research Award, Graduate and Professional Student Association	2019
1st Place in the Urban Climate Research Center 1st Annual Poster Competition, Global Institute of Sustainability	2018
Teaching Excellence Award, Graduate and Professional Student Association	2018
3rd Place in the Student Poster Competition, 8th Annual SSEBE Graduate Research Symposium	2018
2nd Place (for Runner-up) in the Student Poster Competition, 3rd Urban Water Innovation Network – Annual Meeting	2017
Graduation with Honor (undergraduate student), China Three Gorges University	2015
Best Bachelor's Degree Thesis Award of Hubei Province, Ministry of Education of Hubei Province, China	2015
7th China National Excellent Graduate in Hydraulic Engineering, China Association of Hydraulic Engineering Education and Ministry of Education	2015
Outstanding Undergraduate Student in Scientific Research, Engineering Research Center of Eco-environment in Three Gorges Reservoir Region, Ministry of Education	2015
2nd Yangtze River Student - Hubei Province Outstanding Graduate, Ministry of Education of Hubei Province, China	2015

Outstanding Thesis Award of China Three Gorges University (2.23%)	2015
Second Prize, College Students Outstanding Scientific Achievement Award in Hubei Province, China (No. 2014052)	2015
The Qiu Suo Prize Scholarship, China Three Gorges University (5 out of ~23,000 students)	2015
First Prize Scholarship, Student Merit Award for Outstanding Achievement, China Three Gorges University	2015
China Yangtze Power Co., Ltd. Scholarship	2014
Honorable Mention Award, 4th China National Top 10 Future Hydraulic Stars	2014
Top 10 Outstanding Youths of China Three Gorges University (10 out of ~23,000 students)	2014
Outstanding Exchange Student of China Three Gorges University	2014
Top Grade Scholarship, Student Merit Award for Outstanding Achievement, China Three Gorges University (13 out of ~23,000 students)	2014
Top Grade Scholarship, Student Merit Award for Outstanding Achievement, China Three Gorges University (6 out of ~23,000 students)	2013
Second Prize, 3rd China National Undergraduate Hydraulic Innovational Design Competition	2013
Second Prize, SPRING into Wiley Online Library (China Region), John Wiley & Sons, USA	2013
National Scholarship of China (No. 2012 38592), Ministry of Education, China	2012
First Prize Scholarship, Student Merit Award for Outstanding Achievement, China Three Gorges University	2012
First Prize, Structure Model Design Competition, China Three Gorges University	2012

TRAVEL AWARDS AND GRANTS

28th Presidential International Travel Fellowship, University of Oklahoma ($1,097)	2023
International Journal of Environmental Research and Public Health Travel Award (CHF 800)	2020
Individual Travel Grant for American Geophysical Union 2019 Fall Meeting, Graduate and Professional Student Association ($950)	2019
Graduate College Travel Award, Arizona State University ($500)	2019
Individual Travel Grant for 10th International Conference on Urban Climate, Graduate and Professional Student Association ($950)	2018
Graduate College Travel Award, Arizona State University ($500)	2018
23rd Symposium on Boundary Layers and Turbulence Travel Award, American Meteorological Society Committee on Boundary Layers and Turbulence ($300)	2018
Individual Travel Grant for American Meteorological Society 98th Annual Meeting, Graduate and Professional Student Association ($300)	2018
Individual Travel Grant for American Geophysical Union 2017 Fall Meeting, Graduate and Professional Student Association ($648)	2017

REVIEWER AWARDS

Global Peer Review Award (2018–2019) – Top 1% Reviewers in Cross-Field, Publons, Web of Science	2019
Global Peer Review Award (2018–2019) – Top 1% Reviewers in Environment and Ecology, Publons, Web of Science	2019
Outstanding Journal Reviewer for *Journal of Hydrology*, Elsevier	2018
Reviewer Excellence Award, Graduate and Professional Student Association	2018

Global Peer Review Award (2017–2018) – Top 1% Reviewers in Environment and Ecology (Position: #36), Publons, Web of Science 2018

Outstanding Journal Reviewer for *Science of the Total Environment*, Elsevier 2017

TEACHING EXPERIENCE

Courses Taught (S: Spring; F: Fall)

METR 1003-001: Introduction to the Atmospheric Sciences 2024S, 2026S
Undergraduate-level course
School of Meteorology, University of Oklahoma, Norman, OK

GEOG 3023-001: Principles of Physical Geography 2023F
Undergraduate-level course
Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK

GEOG/METR 4043/5043-001: Urban Climatology 2023S, 2024S, 2025S
Combined undergraduate- and graduate-level course
College of Atmospheric & Geographic Sciences, University of Oklahoma, Norman, OK

METR 3960-005: Honors Reading 2025S
Undergraduate-level course
School of Meteorology, University of Oklahoma, Norman, OK

METR 4990-062: Special Problems-Meteorology 2024S
Undergraduate-level course
School of Meteorology, University of Oklahoma, Norman, OK

METR 5990-062: Independent Study 2024F
Graduate-level course
School of Meteorology, University of Oklahoma, Norman, OK

GEOG 4200-008: Internship in Geography 2024F
Undergraduate-level course
Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK

CEE 341: Fluid Mechanics for Civil Engineers 2018S
Undergraduate-level core course (91 students), Graduate Teaching Associate (lab) (received *Teaching Excellence Award*)
Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ

CEE 341: Fluid Mechanics for Civil Engineers 2017S
Undergraduate-level core course (87 students), Graduate Teaching Associate (lab and lecture)
Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ

Guest Lectures & Short Courses

CFMCG08A05: Urban Adaptation and Innovation 2024.11
Graduate-level course, Guest Lecture on Green Infrastructure Modeling for Urban Heat Mitigation
Knowledge Infrastructure, University of Groningen, Leeuwarden, The Netherlands

AIMNet Just Transitions Assessment Platform (JTAP) Summer Internship 2024.06–2024.08

Undergraduate-level course on environmental monitoring & greenhouse gas sensor technology development, co-teach with multiple instructors at the University of Oklahoma, Norman, OK

A Crash Course in Micrometeorology and Urban Climates 2024.02–2024.03
Graduate-level online course, co-teach with Q. Li (Cornell University) and Xiaowei Zhu (Portland State University)

CFMCG08A05: Urban Adaptation and Innovation 2024.02
Graduate-level course, Guest Lecture on Green Infrastructure for Urban Heat Mitigation
Knowledge Infrastructure, University of Groningen, Leeuwarden, The Netherlands

GIS 4233/5233: Digital Image Processing 2024.01
Combined undergraduate- and graduate-level course, Guest Lecture on Urban Remote Sensing and Urban Climate Modeling
Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK

LA 4970/5970: Solutions for Hot Cities: Design with Microclimate 2023.04
Combined undergraduate- and graduate-level course, Guest Lecture on Urban Climate Modeling
Gibbs College of Architecture, University of Oklahoma, Norman, OK

GEOG 3890: Environmental Justice 2022.02
Undergraduate-level course, Guest Lecture on Urban Heat Island and Mitigation
Department of Geography and Environmental Sustainability, University of Oklahoma, Norman, OK

CEE 466/598: Urban Water System Design 2018.10
Combined undergraduate- and graduate-level course, Guest Lecture on EPANET
Ira A. Fulton Schools of Engineering, Arizona State University, Tempe, AZ

MENTORING

Postdoctoral Researchers

- **Haoran Hou** (2025.09–present): University of Oklahoma; Topic–*Urban climate modeling and urban remote sensing*
- **Cathleen Simatupang** (2025.05–present): University of Oklahoma; Topic–*Urban climate monitoring and air pollution modeling*

Ph.D. Students

- **Tianze Luo** (2025.08–present): Ph.D. student in Geography and Environmental Sustainability, University of Oklahoma; Topic–*Compound urban heat and pollution modeling*
- **Yu Ding** (2024.08–present): Ph.D. student in Meteorology, University of Oklahoma; Topic–*High-resolution air pollution modeling*
- **Yuqi Huang** (2023.08–present): Ph.D. student in Meteorology, University of Oklahoma; Topic–*Multiscale urban climate modeling*

M.S. Students

- **Xochitl P. Hidalgo** (2024.08–present): M.S. student in Meteorology, University of Oklahoma; Topic–*Precipitation modeling in coastal urban environments*
- **Jessica Leffel** (2024.02–present): M.S. student in Meteorology, University of Oklahoma; Topic–*Integrated urban climate and building energy modeling*

Visiting Graduate Students

- **Bohong Li** (2024.08–2024.12): Visiting M.Sc. student in Atmospheric Science, University of Hamburg, Germany; Topic–*Impacts of urban areas on precipitation*
- **Kihong Park** (2024.02–2024.08): Visiting Ph.D. student in Water Resources and Coastal Engineering, Chung Ang University/Korea University, Republic of Korea; Topic–*Urban microclimate modeling for mitigating compound disasters*

Undergraduate and High School Students

- **Liam Thompson** (2024.01–present): B.S. in Meteorology & B.S. in Environmental Sustainability, Minor in Mathematics, University of Oklahoma; Topics–(1) *Multilevel evaluation of long-term urban climate modeling at the continental scale*; (2) *Scaling of urban energy use and greenhouse gas emissions*
- **Sage C. Lail** (2023.06–2024.05): B.S. in Meteorology & B.S. in Environmental Sustainability, University of Oklahoma; Topics–(1) *Urban Environmental Exposure Disparities*; (2) *Disproportionate exposure to urban heat island intensity across major US cities in the BosWasH corridor* (Capstone Project)
- **Jonathan Hudson** (2023.08–2023.12): B.S. in Meteorology & B.S. in Geographic Information Systems, University of Oklahoma; Topic–*NEXRAD radar network optimization using a GIS-based approach* (Capstone Project)
- **Emily K. Barbini** (2023.08–2023.12): B.S. in Meteorology, University of Oklahoma; Topic–*Urban heat islands and supercells* (Capstone Project)
- **Chase C. Green** (2023.08–2023.12): B.S. in Meteorology, University of Oklahoma; Topic–*Urban heat islands and supercells* (Capstone Project)
- **Sarah M. Henry** (2023.05–2023.07): B.S. in Aerospace Engineering, Minor in Atmospheric Sciences, University of Illinois Urbana-Champaign; Topic–*Compound heat waves and air pollution episodes in the urban environment* (funded by National Science Foundation REU); Now graduate student at University of Illinois Urbana-Champaign
- **Linda Sun** (2019.07–2021.12): Horace Greeley High School; Topics–(1) *Long-term spatial and temporal variability of solar radiation in the U.S.*; (2) *Tipping signals in historical heat waves*; Now undergraduate student at Cornell University

Student Awards & Achievements

- **Liam Thompson:** Research Assistant sponsored by the Honors Research Assistant Program (HRAP), University of Oklahoma, 2025
- **Yuqi Huang**: College of Atmospheric & Geographic Sciences Research Travel Assistance Award, University of Oklahoma, 2025
- **Yuqi Huang:** Robberson Travel Grant, University of Oklahoma, 2025
- **Liam Thompson:** Nutter Scholarship, Department of Geography and Environmental Sustainability, 2025
- **Yuqi Huang:** National Center for Atmospheric Research (NCAR) CESM Tutorial participant, 2025

- **Liam Thompson**: Goldwater Scholar, Barry Goldwater Scholarship and Excellence in Education Foundation, 2025
- **Liam Thompson**: American Meteorological Society 29th Numerical Weather Prediction Conference Student Presentation Award, 2025
- **Liam Thompson**: First Generation UReCA Fellowship (Spring 2025), University of Oklahoma, 2024
- **Liam Thompson**: First place in the GIS Day Undergraduate Poster Competition, University of Oklahoma, 2024
- **Liam Thompson**: The Bob Glahn Scholarship in Statistical Meteorology, National Weather Association Foundation, 2024
- **Jessica Leffel**: College of Atmospheric & Geographic Sciences Research Travel Assistance Award, University of Oklahoma, 2024
- **Jessica Leffel**: Summer Internship at the National Renewable Energy Laboratory (NREL) Commercial Building Controls and Analytics Group, 2024
- **Yuqi Huang**: College of Atmospheric & Geographic Sciences Research Travel Assistance Award, University of Oklahoma, 2024
- **Yuqi Huang**: National Center for Atmospheric Research (NCAR) Advanced Study Program (ASP) Summer Colloquium–AEROPOLIS participant, sponsored by NSF, 2024
- **Liam Thompson**: Honors College Undergraduate Research Opportunities Program (UROP) scholarship, University of Oklahoma, 2024

Graduate Student Advisory Committees

- **Jeffrey Lee:** Ph.D. student in Meteorology, University of Oklahoma (2025–present)
- **Wanjing Yang:** Ph.D. student in Geography and Environmental Sustainability, University of Oklahoma (2025–present)
- **Bohong Li:** M.Sc. student in Atmospheric Science, University of Hamburg (2025–present)
- **Elizabeth Spicer:** Ph.D. student in Meteorology, University of Oklahoma (2025–present)
- **Yihang Wang**: Ph.D. student in Civil, Environmental and Sustainable Engineering, Arizona State University (2024–present); Dissertation: *Dynamical Interactions in Complex Urban Hydroclimatic Systems*
- **Ming Zhu**: Ph.D. student in Meteorology, University of Oklahoma (2024–present)
- **Taozhong Huang**: Ph.D. student in Meteorology, University of Oklahoma (2024–present)
- **Richard Campos**: Ph.D. in Civil Engineering, University of Oklahoma (2024–2025); Dissertation: *Hazard and Resilience Assessments of Electrical Distribution Networks Subject to Wildfires at the Wildland-Urban Interface*

PROFESSIONAL SERVICE

National or International Committees

- Chair, Committee on Meteorological Aspects of Air Pollution, American Meteorological Society (2025–present)
- Member, Committee on Applied Climatology, American Meteorological Society (2025–present)
- Member, Energy Committee, American Meteorological Society (2025–present)

- Chapter author, Sixth National Climate Assessment (NCA6), U.S. Global Change Research Program (2024–2025)
- Member, Edmond M. Dewan Scholarship Committee, American Geophysical Union (2025–present)
- Member, June Bacon-Bercey Scholarship Committee, American Geophysical Union (2024–present)
- Chair, Bibliography Committee, International Association for Urban Climate (2020–present)
- Member, Bibliography Committee, International Association for Urban Climate (2019–2020)
- Student member, Committee on Meteorological Aspects of Air Pollution, American Meteorological Society (2018–2020)

University Committees

- Member (presidential appointment), University Libraries Committee, University of Oklahoma (2024–2027)
- Member, GIS Day Committee, Department of Geography and Environmental Sustainability, University of Oklahoma (2024–present)
- Member, Graduate Studies Committee, School of Meteorology, University of Oklahoma (2023–present)
- Member, DOE AOI2 Project Manager Hiring Committee, University of Oklahoma (2023)
- Member, Ad hoc Committee for Climate Adaptation Master's Program, Department of Geography and Environmental Sustainability, University of Oklahoma (2023–2024)
- Member, College Academic Program Committee (CAPC), College of Atmospheric & Geographic Sciences, University of Oklahoma (2023–present)
- Member, Diversity, Equity, and Inclusion Council, College of Atmospheric & Geographic Sciences, University of Oklahoma (2023–2024)
- Member, Assessment Committee, Department of Geography and Environmental Sustainability, University of Oklahoma (2022–present)
- Member, Faculty Search Committee, Department of Geography and Environmental Sustainability, University of Oklahoma (2022–2023)
- Co-chair, Postdoctoral Advisory Council (PDAC) Committee, School of Earth, Energy & Environmental Sciences, Stanford University (2020–2022)
- Member, Respectful Community Committee, School of Earth, Energy & Environmental Sciences, Stanford University (2020–2021)

Academic Journal Editor & Guest Editor

- Editorial Board Member, *Communications Sustainability*, published by Springer Nature (2025–present)
- Editorial Board Member, *Environmental Research Letters*, published by Institute of Physics (2025–present)
- Associate Editor, Environment section, *Heliyon*, published by Cell Press (2024–2025)
- Associate Editor, Interdisciplinary Climate Studies section, *Frontiers in Environmental Science*, published by Frontiers (2023–present)
- Associate Editor, Interdisciplinary Climate Studies section, *Frontiers in Earth Science*, published by Frontiers (2023–present)
- Editorial Board Member, *Data in Brief*, published by Elsevier (2020–present)

- Guest Editor, "Using Remote Sensing and GIS Technique/Methods to Address Current Urbanization Issues" (https://www.mdpi.com/journal/remotesensing/special_issues/Y602B3CNT6), *Remote Sensing*, published by MDPI (2022–2024)
- Guest Editor, "Weather and Climate Extremes in the Urban Environment: Modeling and Observations" (https://www.frontiersin.org/research-topics/24936/weather-and-climate-extremes-in-the-urban-environment-modeling-and-observations), *Frontiers in Environmental Science*, *Frontiers in Earth Science*, *Frontiers in Ecology and Evolution*, *Frontiers in Built Environment*, and *Frontiers in Sustainable Cities*, published by Frontiers (2021–2022)

Academic Journal Reviewer/Advisory Boards

- Advisory Board Member, *Cell Reports Sustainability*, published by Cell Press (2025–present)
- Advisory Board Member, *Heliyon*, published by Cell Press (2025–present)
- Review Editor, Atmospheric and Climate section, *Frontiers in Environmental Science*, published by Frontiers (2020–present)
- Topic Advisory Panel Member, *Sustainability*, published by MDPI (2020–2024)
- Topical Advisory Panel Member, *Atmosphere*, published by MDPI (2020–2024)
- Reviewer Board Member, *Land*, published by MDPI (2020–2024)
- Reviewer Board Member, *Remote Sensing*, published by MDPI (2019–2024)

Chair/Co-chair of Conferences

- Chair, 24th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, American Meteorological Society 106th Annual Meeting. Houston, TX, Jan 25–29, 2026.
- Session co-chair, Advancing Representation of Urban Processes and Dynamics in Models Across Scales, American Geophysical Union 2025 Annual Meeting. New Orleans, LA, Dec 15–19, 2025.
- Session co-chair, Urban Watersheds and Urban Water Challenges, European Geosciences Union General Assembly 2025. Vienna, Austria, Apr 27–May 2, 2025.
- Co-organizer, Global Network of Networks of Integrated Urban Services for Healthy and Smart Cities. Cornell Tech, New York, NY, Dec 16–17, 2024.
- Session co-chair, Advancing Representation of Urban Processes and Dynamics in Models Across Scales, American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 9–13, 2024.
- Co-organizer and keynote speaker, Closing the Gap: Strategies for Effective Methane Emissions Reduction Symposium, University of Oklahoma. Norman, OK, Aug 21, 2024.
- Session co-chair, Representing Urban Processes and Dynamics in Models Across Scales, American Geophysical Union 2023 Fall Meeting. San Francisco, CA, Dec 11–15, 2023.
- Session co-chair, Modeling and Monitoring of Air Pollution in the Urban Environment, 21st Joint Conference on the Applications of Air Pollution Meteorology with the Air & Waste Management Association (A&WMA), American Meteorological Society 100th Annual Meeting. Boston, MA, Jan 12–16, 2020.

Peer Review

Reviewer for Academic Journals (126 journals)

Journals in Meteorology and Atmospheric Sciences (16 journals): *Advances in Atmospheric Sciences*; *Advances in Meteorology*; *Agricultural and Forest Meteorology*; *Air Quality, Atmosphere & Health*; *Atmospheric Research*; *Atmospheric Science Letters*; *Air, Soil and Water Research*; *Atmosphere*; *Atmospheric Pollution Research*; *Journal of Applied Meteorology and Climatology*;

Journal of Geophysical Research: Atmospheres; *Journal of Meteorological Research*; *Meteorological Applications*; *npj Climate and Atmospheric Science*; *Quarterly Journal of the Royal Meteorological Society*; *Theoretical and Applied Climatology*

Journals in Earth and Planetary Sciences (22 journals): *Climate*; *Communications Earth & Environment*; *Earth Systems and Environment*; *Earth's Future*; *Forests*; *Frontiers of Earth Science*; *GeoHealth*; *Geophysical Research Letters*; *Geosciences*; *Geoscientific Model Development*; *Hydrological Processes*; *Hydrological Sciences Journal*; *Hydrology*; *Journal of Advances in Modeling Earth Systems*; *Journal of Hydrology*; *Journal of Marine Science and Engineering*; *One Earth*; *Oxford Research Encyclopedia of Climate Science*; *PLOS Climate*; *SDRP Journal of Earth Sciences & Environmental Studies*; *The Innovation Geoscience*; *Water*

Journals in Energy and Building Engineering (14 journals): *Advances in Building Energy Research*; *Applied Energy*; *Building Simulation*; *Building Services Engineering Research and Technology*; *Buildings*; *Case Studies in Thermal Engineering*; *Energies*; *Energy*; *Energy and Building*; *Energy for Sustainable Development*; *International Journal of Green Energy*; *International Journal of Sustainable Energy*; *Journal of Asian Architecture and Building Engineering*; *Journal of Building Performance Simulation*

Journals in Environmental Science and Engineering (23 journals): *American Institute of Mathematical Sciences (AIMS) Environmental Science*; *Ecological Indicators*; *Ecological Modelling*; *Ecosystem Health and Sustainability*; *Environmental Challenges*; *Environmental Health Perspectives*; *Environmental Impact Assessment Review*; *Environmental Pollution*; *Environmental Research Communications*; *Environmental Research Letters*; *Environmental Reviews*; *Environmental Science and Pollution Research*; *Forest Ecology and Management*; *Frontiers in Environmental Science*; *Journal of Environmental Engineering and Landscape Management*; *Journal of Environmental Management*; *Journal of Flood Risk Management*; *International Journal of Environmental Research and Public Health*; *Land*; *Land Degradation & Development*; *Science of the Total Environment*; *Stochastic Environmental Research and Risk Assessment*; *Sustainability*

Journals in Geography and Remote Sensing (11 journals): *Applied Geography*; *GIScience & Remote Sensing*; *International Journal of Digital Earth*; *International Journal of Applied Earth Observation and Geoinformation*; *ISPRS International Journal of Geo-Information*; *ISPRS Journal of Photogrammetry and Remote Sensing*; *Remote Sensing*; *Remote Sensing of Environment*; *Sensors*; *South African Geographical Journal*; *European Journal of Remote Sensing*

Journals in Buildings, Urban Climate, and Urban Development (15 journals): *Arboriculture & Urban Forestry*; *Building and Environment*; *Cities*; *City and Environment Interactions*; *Computers, Environment and Urban Systems*; *International Journal of Urban Sciences*; *International Journal of Urban Sustainable Development*; *Journal of Urban Design*; *Landscape and Urban Planning*; *Local Environment*; *Nature Cities*; *Sustainable Cities and Society*; *Urban Climate*; *Urban Forestry & Urban Greening*; *Urban Science*

Journals in Interdisciplinary or Other Fields (25 journals): *ACM Journal on Computing and Sustainable Societies*; *Applied Medical Research*; *BMJ Open*; *Cell Reports Sustainability*; *Cogent Social Sciences*; *Data*; *Ecological Economics*; *Experimental Results*; *Heliyon*; *iScience*; *Journal of Cleaner Production*; *Natural Resources Forum*; *Nature Communications*; *Nature Sustainability*; *Next Research*; *Philosophical Transactions of the Royal Society A*; *Physica Scripta*; *PLoS One*; *Proceedings of the Institution of Civil Engineers*; *Resources*; *Results in Engineering*; *Scientific Data*; *Scientific Reports*; *Simulation: Transactions of the Society of Modeling & Simulation International*; *Sustainable Horizons*

Reviewer for Book Chapters

- Kim, Albert S. (Ed.) (2019). *Advanced Computational Fluid Dynamics for Emerging Engineering Processes – Eulerian vs. Lagrangian*. IntechOpen. Invited chapter reviewer in Apr 2019.
- Li, P., & Marrongelle, K. (2012). *Having Success with NSF: A Practical Guide*. John Wiley & Sons. Invited public participation in book review (online) by John Wiley & Sons, Inc. in Oct–Nov 2013.

Reviewer for Book Proposals

- CRC Press, Taylor & Francis Group (2020–present)

Reviewer for Proposals submitted to National/International Funding Agencies

- Reviewer and Panelist, National Science Foundation (2023–present)
- Reviewer, The Hong Kong Jockey Club Charities Trust (2025)

Reviewer for University Grants, Awards, and Internal Competitions

(#: number of proposals or applications reviewed)

- National Science Foundation EPSCoR Research Fellows program internal competition, University of Oklahoma (Jan–Feb 2024, 3)
- Individual Travel Grant for Academic Conference, Graduate and Professional Student Association (GPSA) Travel Grant Program, Arizona State University (Aug 2017–Aug 2019, 60)
- Career Development Grant, GPSA Travel Grant Program (Jan 2018–Aug 2019, 7)
- Internship and Interview Travel Grant, GPSA Travel Grant Program (Aug 2017–Aug 2019, 3)
- Jumpstart Seed Research Grant, GPSA Jumpstart Program (Oct 2017, Feb 2018, Apr 2018, Apr 2019, 6)
- Independent and Terminal (Dissertation/Thesis) Research Grant, GPSA Graduate Research Support Program (Oct 2017, Feb 2018, Oct 2018, Jan 2019, Feb 2019, Aug 2019, 17)
- Teaching Excellence Awards (TEA), GPSA (Oct–Nov 2017, Sep–Oct 2018, 7)

Award Judge for Conferences and Competitions

- Award Judge, Outstanding Student and PhD candidate Presentation (OSPP) Awards, European Geosciences Union (EGU) General Assembly 2025. Vienna, Austria, May 2025.
- Reviewer, Outstanding Student Presentation Awards (OSPA), American Geophysical Union 2024 Annual Meeting. Washington, D.C., Dec 2024.
- Reviewer, Outstanding Student Presentation Awards (OSPA), American Geophysical Union 2023 Fall Meeting. San Francisco, CA, Dec 2023.
- Poster & StoryMaps Judge, GIS Day, University of Oklahoma, Norman, OK, Nov 2022, Nov 2023, Oct 2024.
- Award Judge, Stanford Center on Longevity 2021–2022 Design Challenge: "Longevity-Ready Environments: Rethinking Physical Spaces for Century-Long Lives", Stanford Center on Longevity, Dec 2021–Jan 2022.
- Student Award Judge, Poster Sessions–Atmospheric Chemistry, Aerosols, and Air Quality; Boundary Layer Meteorology; Climate; and Tropical Meteorology, 19th Annual American Meteorological Society Student Conference. Boston, MA, Jan 12, 2020.
- Student Award Judge, 2019 Fall Earth and Space Science Virtual Poster Showcase, American Geophysical Union, Nov 2019.

- Student Award Judge, Session–Urban Design and Planning with Climate, 10th International Conference on Urban Climate/14th Symposium on the Urban Environment. City University of New York, New York City, NY, Aug 06–09, 2018.
- Student Award Judge, Poster Session–Atmospheric Chemistry, Aerosols, and Air Quality, 17th Annual American Meteorological Society Student Conference. Austin, TX, Jan 07, 2018.

Reviewer for Conferences

- Paper reviewer, 2020 International Symposium on Water, Ecology and Environment (ISWEE 2020). Beijing Jiaotong University, Beijing, China, Dec 06–08, 2020.
- Paper reviewer, the 6th International Conference on Water Resource and Environment (WRE 2020). Tokyo University of Agriculture & I-Shou University, Tokyo, Japan, Aug 23–26, 2020.
- Paper reviewer, the 2nd International Workshop on Environment and Geoscience (IWEG 2019). Hangzhou, China, Jul 17–19, 2019.
- Paper reviewer, Session–Environmental Management, Social Development and Economic Development, 7th World Sustainability Forum (WSF 2018). University of International Business and Economics & Tsinghua University, Beijing, China, Sep 19–21, 2018.

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union (AGU), member since 2017
- American Meteorological Society (AMS), member since 2016
- European Geosciences Union (EGU), member since 2024
- International Association for Urban Climate (IAUC), member since 2016
- International Association of Hydrological Sciences (IAHS), member since 2024
- Academic Data Science Alliance (ADSA) Career Development Network (CDN), member since 2023
- Chinese-American Oceanic and Atmospheric Association (COAA), member since 2022
- Data Institute for Societal Challenges (DISC), University of Oklahoma, affiliate since 2022
- Institute for Community and Society Transformation (ICAST), University of Oklahoma, affiliate since 2022
- American Institute of Chemical Engineers (AIChE), undergraduate student member in 2014–2015
- Wiley Science Advisors in Life, Earth & Environmental Sciences, John Wiley & Sons, Inc., member in 2013–2016

PROFILES OR WEBSITES

- Google Scholar profile: https://scholar.google.com/citations?user=XFBSta4AAAAJ&hl
- ResearchGate profile: https://www.researchgate.net/profile/Chenghao-Wang-10
- ORCID: https://orcid.org/0000-0001-8846-4130
- Web of Science profile: https://www.webofscience.com/wos/author/record/O-7961-2017
- Scopus Author Profile: https://www.scopus.com/authid/detail.uri?authorId=57191912543
- OU School of Meteorology faculty profile: https://www.ou.edu/ags/meteorology/people/faculty
- OU Department of Geography and Environmental Sustainability faculty profile: https://www.ou.edu/ags/geography/team/faculty

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