

CURRICULUM VITAE

ZHIHUA WANG, PH.D.

ARIZONA STATE UNIVERSITY

School of Sustainable Engineering and the Built Environment

Tempe, AZ, 85287-3005

Tel: +1-480-727-2933; Fax: +1-480-965-0557

Email: zhwang@asu.edu

EDUCATION

- 2011 Ph.D., Civil and Environmental Engineering, Princeton University
- 2008 M.A., Civil and Environmental Engineering, Princeton University
- 2004 M.Eng, Civil and Environmental Engineering, Nanyang Technological University, Singapore
- 2002 B.Eng, (1st Class Honors), Civil and Environmental Engineering, Nanyang Technological University, Singapore

ACADEMIC APPOINTMENT

- 2018.08 – present Associate Professor, School of Sustainable Engineering and the Built Environment, Arizona State University
- 2012.04 – present Co-director for Climate System Research, National Center of Excellence on SMART Innovations, Arizona State University
- 2012.01 – 2018.07 Assistant Professor, School of Sustainable Engineering and the Built Environment, Arizona State University
- 2011.09 – 2011.12 Post-doctorate Research Associate, Department of Civil and Environmental Engineering, Princeton University
- 2009.02 – 2010.06 Graduate Teaching Assistant, Princeton University
- 2004.04 – 2006.08 Research Project Officer, Nanyang Technological University, Singapore

RESEARCH INTEREST

My primary research interest focuses on the sustainable development of the built environment, including multiscale modeling of energy and water dynamics, building-environment interactions, landscape and infrastructure management, and building energy efficiency.

PEER-REVIEWED JOURNAL PAPERS PUBLISHED

(*) Corresponding author
IF Impact Factor

- 79. Wang, C., Z.H. Wang*, and Q. Li (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> (IF: 5.268)
- 78. Li, P., and Z.H. Wang* (2020), Modeling carbon dioxide exchange in a single-layer urban canopy model, *Building and Environment*, 184, 107243. <https://doi.org/10.1016/j.buildenv.2020.107243> (IF: 4.971)

77. Huang, F., W. Zhan*, Z.H. Wang, J. Voogt, L. Hu, J. Quan, C. Liu, N. Zhang, and J. Lai (2020), Satellite identification of atmosphere-surface-subsurface urban heat islands under clear sky, *Remote Sensing of Environment*, 250, 112039. <https://doi.org/10.1016/j.rse.2020.112039>. (IF: 9.085)
76. Wang, C., Z.H. Wang*, and L. Sun (2020), Early warning signals for critical temperature transition, *Geophysical Research Letters*, 47, e2020GL088503. <https://doi.org/10.1029/2020GL088503>. (IF: 4.497)
75. Wang, Z.H.* (2020), Can trees pollute cities? *Atmosfera*, 1-11. <https://doi.org/10.20937/ATM.52907>. (IF: 1.106)
74. Wang, C., and Z.H. Wang* (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>. (IF: 5.647)
73. Li, P., and Z.H. Wang* (2020), A nonequilibrium thermodynamic approach for surface energy balance closure, *Geophysical Research Letters*, 47(3), e2019GL085835. <https://doi.org/10.1029/2019GL085835>. (IF: 4.497)
72. Yang, J.*, Z.H. Wang, and H.P. Huang (2019), Intercomparison of the surface energy partitioning in CMIP5 simulations, *Atmosphere*, 10(10), 602. <https://doi.org/10.3390/atmos10100602>. (IF: 2.397)
71. Wang, C., Z.H. Wang*, and J. Yang (2019), Urban water capacity: Irrigation for heat mitigation, *Computers, Environment and Urban Systems*, 78, 101397. <https://doi.org/10.1016/j.compenvurbsys.2019.101397>. (IF: 4.655)
70. Wang, Z.H.*, R. von Gnechten, D. Sampson, and D.D. White (2019), Wastewater reclamation holds a key for water sustainability in future urban development of Phoenix Metropolitan Area, *Sustainability*, 11, 3537. <https://doi.org/10.3390/su11133537>. (IF: 2.576)
69. Li, P., and Z.H. Wang* (2019), Estimating evapotranspiration over vegetated surfaces based on wet patch patterns, *Hydrology Research*, 50(4), 1037-1046. <https://doi.org/10.2166/nh.2019.034>. (IF: 2.012)
68. Wang, C., Z.H. Wang*, C. Wang, and S.W. Myint (2019), Environmental cooling provided by urban trees under extreme heat and cold waves, *Remote Sensing of Environment*, 227, 28-43. <https://doi.org/10.1016/j.rse.2019.03.024>. (IF: 9.085)
67. Wang, Z.H.*, and R. Upreti (2019), A scenario analysis of thermal environmental changes induced by urban growth in Colorado River Basin, USA, *Landscape and Urban Planning*, 181, 125-138. <https://doi.org/10.1016/j.landurbplan.2018.10.002>. (IF: 5.441)
66. Wang, C., Q. Li, and Z.H. Wang* (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>. (IF: 4.971)
65. Wang, C., Z.H. Wang*, and J. Yang (2018), Cooling effect of urban trees on the built

environment of contiguous United States, *Earth's Future*, 6, 1066-1081.
<https://doi.org/10.1029/2018EF000891>. (IF: 6.141)

64. Song, J.* , Z.H. Wang, and C. Wang (2018), The regional impact of urban heat mitigation strategies on planetary boundary-layer dynamics over a semi-arid city, *Journal of Geophysical Research: Atmospheres*, 123, 6410-6422.
<https://doi.org/10.1029/2018JD028302>. (IF: 3.821)
63. Omidvar, H., J. Song, J. Yang, G. Arwatz, Z.H. Wang, M. Hulme, K. Kaloush, and E. Bou-Zeid* (2018), Rapid modification of urban land surface temperature during rainfall, *Water Resources Research*, 54, 4245-4264. <https://doi.org/10.1029/2017WR022241>. (IF: 4.309)
62. Wang, C., Z.H. Wang*, J. Yang, and Q. Li (2018), A backward-Lagrangian-stochastic footprint model for the urban environment, *Boundary-Layer Meteorology*, 168(1), 59-80.
<https://doi.org/10.1007/s10546-018-0338-6>. (IF: 3.011)
61. Li, Q.* , and Z.H. Wang (2018), Large-eddy simulation of the impact of urban trees on momentum and heat fluxes, *Agricultural and Forest Meteorology*, 255, 44-56.
<https://doi.org/10.1016/j.agrformet.2017>. (IF: 4.651)
60. Templeton, N.A., E.R. Vivoni*, Z.H. Wang, and A. Schreiner-McGraw (2018), Quantifying water and energy fluxes over different urban land covers in Phoenix, Arizona, *Journal of Geophysical Research-Atmospheres*, 123(4), 2111–2128.
<https://doi.org/10.1002/2017JD27845>. (IF: 3.821)
59. Zhao, Q.* , J. Yang, Z.H. Wang, and E.A. Wentz (2018), Assessing the cooling and locational benefits of tree shade by an outdoor urban physical scale model at Tempe, AZ, *Urban Science*, 2, 20. <https://doi.org/10.3390/urbansci2010004>. (IF: N.A.)
58. Huang, F., W. Zhan*, Z.H. Wang, K. Wang, J.M. Chen, Y. Liu, J. Lai, and W. Ju (2017), Positive or negative? Urbanization-induced variations in diurnal skin-surface temperature range detected using satellite data, *Journal of Geophysical Research: Atmospheres*, 122(24), 13229-13244. <https://doi.org/10.1002/2017JD027021>. (IF: 3.821)
57. Wang, C.* , C. Wang, S.W. Myint, and Z.H. Wang (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>. (IF: 6.551)
56. Yang, J., and Z.H. Wang* (2017), Planning for a sustainable desert city: The potential water buffering capacity of urban green infrastructure, *Landscape and Urban Planning*, 167, 339-347. <https://doi.org/10.1016/j.landurbplan.2017.07.014>. (IF: 5.441)
55. Song, J., Z.H. Wang*, S.W. Myint, and C. Wang (2017), The hysteresis effect on surface-air temperature relationship and its implications to urban planning: An examination in Phoenix, Arizona, USA, *Landscape and Urban Planning*, 167, 198-211.
<https://doi.org/10.1016/j.landurbplan.2017.06.024>. (IF: 5.441)
54. Sun, T.* , Z.H. Wang, W. Oechel, and C.S.B. Grimmond (2017), The analytical objective hysteresis model (AnOHM v1.0): Methodology to determine bulk storage heat flux coefficients, *Geoscientific Model Development*, 10, 2875-2890.

<https://doi.org/doi:10.5194/gmd-10-2875-2017>. (IF: 5.240)

53. Upreti, R., Z.H. Wang*, and J. Yang (2017), Radiative shading effect of urban trees on cooling the regional built environment, *Urban Forestry & Urban Greening*, 26, 18-24. <https://doi.org/10.1016/j.ufug.2017.05.008>. (IF: 4.021)
52. Wang, C., and Z.H. Wang* (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>. (IF: 5.268)
51. Wang, Z.H.* , and Q. Li (2017), Thermodynamic characterisation of urban nocturnal cooling, *Heliyon*, 3, e00290. <https://doi.org/10.1016/j.heliyon.2017.e00290>. (IF: N.A.)
50. Song, J.*, Z.H. Wang, and C. Wang (2017), Biospheric and anthropogenic contributors to atmospheric CO2 variability in a residential neighborhood of Phoenix, Arizona, *Journal of Geophysical Research: Atmospheres*, 122, 3317-3329. <https://doi.org/doi:10.1002/2016JD026267>. (IF: 3.821)
49. Aflaki, A.* , M. Mirnezhad, A. Ghaffarianhoseini, A.G. Ghaffarianhoseini, H. Omrany, Z.H. Wang, and H. Akbari (2017), Urban heat island mitigation strategies: A state-of-the-art review on Kuala Lumpur, Singapore and Hong Kong, *Cities*, 62, 131-145. <https://doi.org/doi:10.1016/j.cities.2016.09.003>. (IF: 4.802)
48. Yang, J., Z.H. Wang*, Q. Li, N. Vercauteren, E. Bou-Zeid, and M.B. Parlange (2017), A novel approach for unraveling the energy balance of water surfaces with a single depth temperature measurement, *Limnology and Oceanography*, 62, 89-103. <https://doi.org/10.1002/lno.10378>. (IF: 3.778)
47. Song, J., and Z.H. Wang* (2016), Diurnal changes in urban boundary layer environment induced by urban greening, *Environmental Research Letters*, 11, 114018. <https://doi.org/10.1088/1748-9326/11/11/114018>. (IF: 6.096)
46. Wang, Z.H.* , C. Fan, S.W. Myint, and C. Wang (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>. (IF: 2.740)
45. Wang, C.* , J. Yang, S.W. Myint, Z.H. Wang, and B. Tong (2016), Empirical modelling and spatio-temporal patterns of urban evapotranspiration for the Phoenix Metropolitan area, Arizona, *GIScience & Remote Sensing*, 53(6), 778-792. <https://doi.org/10.1080/15481603.2016.1243399>. (IF: 5.965)
44. Yang, J.*, Z.H. Wang, K. Kaloush, and H. Dylla (2016), Effect of pavement thermal properties on mitigating urban heat islands: A multi-scale modeling case study in Phoenix, *Building and Environment*, 108, 110-121. <https://doi.org/10.1016/j.buildenv.2016.08.021>. (IF: 4.971)
43. Huang, F., W. Zhan*, J. Voogt, L. Hu, Z.H. Wang, J. Quan, W. Ju, and Z. Guo (2016), Temporal upscaling of surface urban heat island by incorporating an annual temperature cycle model: A tale of two cities, *Remote Sensing of Environment*, 186, 1-12. <https://doi.org/10.1016/j.rse.2016.08.009>. (IF: 9.085)

42. Song, J., and Z.H. Wang* (2016), Evaluating the impact of built environment characteristics on urban boundary layer dynamics using an advanced stochastic approach, *Atmospheric Chemistry and Physics*, 16, 6285-6301. <https://doi.org/10.5194/acp-16-1-2016>. (IF: 5.414)
41. Yang, J., Z.H. Wang*, M. Georgescu, F. Chen, and M. Tewari (2016), Assessing the impact of enhanced hydrological processes on urban hydrometeorology with application to two cities in contrasting climates, *Journal of Hydrometeorology*, 17, 1031-1047. <https://doi.org/10.1175/JHM-D-15-0112.1>. (IF: 3.891)
40. Wang, C.*, S. Myint, Z.H. Wang, and J. Song (2016), Spatio-temporal modeling of the urban heat island in the Phoenix Metropolitan area: Land use change implications, *Remote Sensing*, 8, 185. <https://doi.org/10.3390/rs8030185>. (IF: 4.509)
39. Ryu, Y.H.*, E. Bou-Zeid, Z.H. Wang, and J.A. Smith (2016), Realistic representation of urban trees in an urban canopy model, *Boundary-Layer Meteorology*, 159, 193-220. <https://doi.org/10.1007/s10546-015-0120-y>. (IF: 3.011)
38. Song, J.*, J. Xia, L. Zhang, Z.H. Wang, H. Wan, and D. She (2016), Streamflow prediction in ungauged basins by regressive regionalization: A case study in Huai River Basin, China, *Hydrology Research*, 47(5), 1053-1068. <https://doi.org/10.2166/nh.2015.155>. (IF: 2.012)
37. Wang, Z.H.*, X. Zhao, J. Yang, and J. Song (2016), Cooling and energy saving potentials of shade trees and urban lawns in a desert city, *Applied Energy*, 161(3), 437-444. <https://doi.org/10.1016/j.apenergy.2015.10.047>. (IF: 8.848)
36. Song, J., and Z.H. Wang* (2015), Impacts of mesic and xeric urban vegetation on outdoor thermal comfort and microclimate in Phoenix, AZ, *Building and Environment*, 94(2), 558-568. <https://doi.org/10.1016/j.buildenv.2015.10.016>. (IF: 4.971)
35. Yang, J., and Z.H. Wang* (2015), Optimizing urban irrigation schemes for the trade-off between energy and water consumption, *Energy and Buildings*, 107, 335-344. <https://doi.org/10.1016/j.enbuild.2015.08.045>. (IF: 4.867)
34. Georgescu, M.*, W.T. Chow, Z.H. Wang, A. Brazel, B. Trapido-Lurie, M. Roth, and V. Benson-Lira (2015), Prioritizing urban sustainability solutions: coordinated approaches must incorporate scale-dependent built environment induced effects, *Environmental Research Letters*, 10, 061001. <https://doi.org/10.1088/1748-9326/10/6/061001>. (IF: 6.096)
33. Yang, J., Z.H. Wang*, and K.E. Kaloush (2015), Environmental impacts of reflective materials: Is high albedo a 'silver bullet' for mitigating urban heat island?, *Renewable and Sustainable Energy Reviews*, 47, 830-843. <https://doi.org/10.1010/j.rser.2015.03.092>. (IF: 12.110)
32. Yang, J., Z.H. Wang*, F. Chen, S. Miao, M. Tewari, J. Voogt, and S. Myint (2015), Enhancing hydrologic modeling in the coupled Weather Research and Forecasting - urban modeling system, *Boundary-Layer Meteorology*, 155(1), 87-109. <https://doi.org/10.1007/s10546-014-9991-6>. (IF: 3.011)
31. Song, J., and Z.H. Wang* (2015), Interfacing urban land-atmosphere through coupled

- urban canopy and atmospheric models, *Boundary-Layer Meteorology*, 154(3), 427-448. <https://doi.org/10.1007/s10546-014-9980-9>. (IF: 3.011)
30. Yang, J., and Z.H. Wang* (2014), Land surface energy partitioning revisited: A novel approach based on single depth soil measurement, *Geophysical Research Letters*, 41, 8348-8358. <https://doi.org/10.1002/2014GL062041>. (IF: 4.497)
29. Wang, Z.H.* (2014), Monte Carlo simulations of radiative heat exchange in a street canyon with trees, *Solar Energy*, 110, 704-713. <https://doi.org/10.1016/j.solener.2014.10.012>. (IF: 4.608)
28. Wang, Z.H.* (2014), A new perspective of urban-rural differences: The impact of soil water advection, *Urban Climate*, 10, 19-34. <https://doi.org/10.1016/j.clim.2014.08.004>. (IF: 3.834)
27. Huang, F., W. Zhan*, W. Ju, and Z.H. Wang (2014), Improved reconstruction of soil thermal field using two-depth measurements of soil temperatures, *Journal of Hydrology*, 519, 711-719. <https://doi.org/10.1016/j.jhydrol.2014.08.014>. (IF: 4.500)
26. Yang, J., and Z.H. Wang* (2014), Physical parameterization and sensitivity of urban hydrological models: Application to green roof systems, *Building and Environment*, 75, 250-263. <https://doi.org/10.1016/j.buildenv.2014.02.006>. (IF: 4.971)
25. Ramamurthy, P.*, E. Bou-Zeid, J. Smith, Z. Wang, M. Baeck, J. Hom, and C. Welty (2014), Influence of sub-facet heterogeneity and material properties on the urban surface energy budget, *Journal of Applied Meteorology and Climatology*, 53(9), 2114-2129. <https://doi.org/10.1175/JAMC-D-13-0286.1>. (IF: 2.506)
24. Shan, W.*, T. Lu, Z.H. Wang, and C. Majidi (2013), Thermal analysis and design of a multi-layered rigidity tunable composite, *International Journal of Heat and Mass Transfer*, 66, 271-278. <https://doi.org/10.1016/j.ijheatmasstransfer.2013.07.031>. (IF: 4.947)
23. Yang, J., Z.H. Wang*, and T.W. Lee (2013), Relative efficiency of surface energy partitioning over different land covers, *British Journal of Environment and Climate Change*, 3(1), 86-102. (IF: N.A.)
22. Sun, T., Z.H. Wang*, and G. Ni (2013), Revisiting the hysteresis effect in surface energy budgets, *Geophysical Research Letters*, 40, 1741-1747. <https://doi.org/10.1002/grl.50385>. (IF: 4.497)
21. Sun, T.*, E. Bou-Zeid, Z.H. Wang, E. Zerba, and G.H. Ni (2013), Hydrological determinants of green roof performance via a vertically-resolved model for heat and water transport, *Building and Environment*, 60, 211-224. <https://doi.org/10.1016/j.buildenv.2012.10.018>. (IF: 4.971)
20. Wang, Z.H.*, E. Bou-Zeid, and J.A. Smith (2013), A coupled energy transport and hydrological model for urban canopies evaluated using a wireless sensor network, *Quarterly Journal of the Royal Meteorological Society*, 139(675), 1643-1657. <https://doi.org/10.1002/qj.2032>. (IF: 3.471)
19. Lee, T.-W.*, J.Y. Lee, and Z.H. Wang (2012), Scaling of the urban heat island intensity

using time-dependent energy balance, *Urban Climate*, 2, 16-24.
<https://doi.org/10.1016/j.uclim.2012.10.005>. (IF: 3.834)

18. Wang, Z.H.* (2012), Reconstruction of soil thermal field from a single depth measurement, *Journal of Hydrology*, 464-465, 541-549. <https://doi.org/10.1016/j.jhydrol.2012.07.047>. (IF: 4.500)
17. Wang, Z.H.* , and E. Bou-Zeid (2012), A novel approach for the estimation of soil ground heat flux, *Agricultural and Forest Meteorology*, 154-155, 214-221.
<https://doi.org/10.1016/j.agrformet.2011.12.001>. (IF: 4.651)
16. Wang, Z.H.* , E. Bou-Zeid, S.K. Au, and J.A. Smith (2011), Analyzing the sensitivity of WRF's single-layer urban canopy model to parameter uncertainty using advanced Monte Carlo simulation, *Journal of Applied Meteorology and Climatology*, 50(9), 1795-1814.
<https://doi.org/10.1175/2011jamc2685.1>. (IF: 2.506)
15. Wang, Z.H.* , and E. Bou-Zeid (2011), Comment on "Impact of wave phase difference between soil surface heat flux and soil surface temperature on soil surface energy balance closure" by Z. Gao, R. Horton, and H. P. Liu, *Journal of Geophysical Research - Atmospheres*, 116, D08110. <https://doi.org/10.1029/2010jd015117>. (IF: 3.821)
14. Wang, Z.H.* , E. Bou-Zeid, and J.A. Smith (2011), A spatially-analytical scheme for surface temperatures and conductive heat fluxes in urban canopy models, *Boundary-Layer Meteorology*, 138(2), 171-193. <https://doi.org/10.1007/s10546-010-9552-6>. (IF: 3.011)
13. Wang, Z.H.* (2010), Geometric effect of radiative heat exchange in concave structure with application to heating of steel I-sections in fire, *International Journal of Heat and Mass Transfer*, 53(5-6), 997-1003.
<https://doi.org/10.1016/j.ijheatmasstransfer.2009.11.013>. (IF: 4.947)
12. Scherer, G.W.* , J.H. Prevost, and Z.H. Wang (2009), Bending of a poroelastic beam with lateral diffusion, *International Journal of Solids and Structures*, 46(18-19), 3451-3462.
<https://doi.org/10.1016/j.ijsolstr.2009.05.016>. (IF: 3.213)
11. Wang, Z.H., J.H. Prevost* , and O. Coussy (2009), Bending of fluid-saturated linear poroelastic beams with compressible constituents, *International Journal for Numerical and Analytical Methods in Geomechanics*, 33(4), 425-447. <https://doi.org/10.1002/inag.722>. (IF: 2.814)
10. Wang, Z.H.* , and K.H. Tan (2008), Green's function approach for heat conduction: application to steel members protected by intumescent paint, *Numerical Heat Transfer Part B-Fundamentals*, 54(6), 435-453. <https://doi.org/10.1080/10407790802554034>. (IF: 1.600)
9. Wang, Z.H.* , and K.H. Tan (2008), Radiative heat transfer for structural members exposed to fire: An analytical approach, *Journal of Fire Sciences*, 26(2), 133-152.
<https://doi.org/10.1177/0734904107085746>. (IF: 1.283)
8. Au, S.K.* , Z.H. Wang, and S.M. Lo (2007), Compartment fire risk analysis by advanced Monte Carlo simulation, *Engineering Structures*, 29(9), 2381-2390.

<https://doi.org/10.1066/j.engstruct.2006.11.024>. (IF: 3.548)

7. Wang, Z.H. *, and K.H. Tan (2007), Temperature prediction of concrete-filled rectangular hollow sections in fire using Green's function method, *Journal of Engineering Mechanics-ASCE*, 133(6), 688-700. [https://doi.org/10.1061/\(asce\)0733-9399\(2007\)133:6\(688\)](https://doi.org/10.1061/(asce)0733-9399(2007)133:6(688)). (IF: 2.003)
6. Wang, Z.H. *, and K.H. Tan (2007), Temperature prediction for multi-dimensional domains in standard fire, *Communications in Numerical Methods in Engineering*, 23(11), 1035-1055. <https://doi.org/10.1002/cnm.950>. (IF: 1.754)
5. Wang, Z.H. *, and K.H. Tan (2007), Temperature prediction for contour-insulated concrete-filled CHS subjected to fire using large time Green's function solutions, *Journal of Constructional Steel Research*, 63(7), 997-1007. <https://doi.org/10.1016/j.jcsr.2006.08.014>. (IF: 2.938)
4. Wang, Z.H. *, and K.H. Tan (2006), Green's function solution for transient heat conduction in concrete-filled CHS subjected to fire, *Engineering Structures*, 28(11), 1574-1585. <https://doi.org/10.1016/j.engstruct.2006.02.007>. (IF: 3.548)
3. Wang, Z.H. *, and K.H. Tan (2006), Residual area method for heat transfer analysis of concrete-encased I-sections in fire, *Engineering Structures*, 28(3), 411-422. <https://doi.org/10.1016/j.engstruct.2005.08.013>. (IF: 3.548)
2. Wang, Z.H. *, and K.H. Tan (2006), Sensitivity study of time delay coefficient of heat transfer formulations for insulated steel members exposed to fire, *Fire Safety Journal*, 41(1), 31-38. <https://doi.org/10.1016/j.firesaf.2005.07.008>. (IF: 2.295)
1. Wang, Z.H. *, S.K. Au, and K.H. Tan (2005), Heat transfer analysis using a Green's function approach for uniformly insulated steel members subjected to fire, *Engineering Structures*, 27(10), 1551-1562. <https://doi.org/10.1016/j.engstruct.2005.05.005>. (IF: 3.548)

SUMMARY OF PRESENTATION

Invited Presentations

1. Wang, Z.H., Wang, C., Kaloush, K.E., "Impact of pavements on urban heat island: A critical review and gap analysis". NAPA online webinar, 15 October 2020.
2. Wang, Z.H., "Trade-off of energy and water for sustainable urban development". University of Arizona, Tuscan, 23 January 2020.
3. Wang, Z.H., "Urban green infrastructure in an arid city: cooling, irrigation, and heat-water trade-off". *NSF Workshop of Networking for Environmental Sustainability in Arid Region Urban Communities*. Texas Tech University, 14-16 August 2019.
4. Wang, Z.H., "The role of green infrastructure in sustainable urban development: Modeling & implications". University of California, Irvine, 13 November 2017.
5. Wang, Z.H., "Climate-energy-water repercussions of urban green infrastructure". Nanjing

University, Nanjing, China, 13 June 2016.

6. Wang, Z.H., “Urban green infrastructure: Modeling and Implications to sustainable development of cities”. Nanyang Technological University, Singapore, 02 June 2016.
7. Wang, Z.H., “Urban sustainability research under the changing climate”. Southwest University of Science and Technology, Mianyang, China, 23 May 2013.
8. Wang, Z.H., “The role of water in land surface energy balance: an analytical perspective”. Tsinghua University, Beijing, China, 15 May 2013.
9. Wang, Z.H., “Field measurements and numerical modeling of energy transport in urban areas”. University of Southern California, Los Angeles, 30 March 2011.
10. Wang, Z.H., “Transport of surface energetics from urban areas: field measurements and numerical modeling”. Institute of Atmospheric Physics, Chinese Academy of Science, Beijing, 25 Feb 2011.
11. Wang, Z.H., “A Sensor Network Over Princeton – application to the study of urban micrometeorology”. Mid-InfraRed Technologies for Health and Environment (MIRTHE) Monthly Lecture Series, Princeton, 09 Dec 2010.

Peer-reviewed Conference Presentations

(~) Presenting author

1. Sun L~, Wang C, Wang ZH. Long-term solar radiation patterns across the Contiguous United States. In: 2020 American Geophysical Society Fall Meeting, Virtual, December 7-11, 2020.
2. Li P~, Wang ZH. Carbon dioxide exchange in urban areas: modeling, uncertainties and sensitivity analysis. In: 2020 American Geophysical Society Fall Meeting, Virtual, December 7-11, 2020.
3. Wang Z~, Vivoni ER, Bohn TJ, Wang ZH. Irrigation Cooling Capacity in Agricultural and Urban Settings of Central Arizona: A Multiyear Assessment. In: 2020 American Geophysical Society Fall Meeting, Virtual, December 7-11, 2020.
4. Li P~, Wang ZH. Modeling carbon dioxide exchange in a single-layer urban canopy model. In: The 54th International Conference of the Architectural Science Association (ANZAScA) 2020, Auckland, New Zealand, November 25-28, 2020.
5. Wang C~, Li Q, Wang ZH. The residence time of pollutants emitted within the urban canopy influenced by street canyon geometry and emission conditions. In: *100th Annual Meeting of American Meteorological Society*, Boston, MA, January 13-17, 2020.
6. Wang C~, Wang ZH, Yang J. Evaluating the potential of irrigation for mitigating urban heat: Trade-off between water use and heat mitigation capacity. In: 2019 American Geophysical Society Fall Meeting, San Francisco, CA, December 9-13, 2019.
7. Yang J~, Wang ZH. Cooling an arid city: the energy-water trade-off of urban irrigation. In:

AOGS 16th Annual Meeting, Singapore, July 28-August 2, 2019.

8. Wang C~, Wang ZH, Wang C, Myint SW. The cooling capacity of urban trees in response to thermal extremes in U.S. cities, In: 2019 Urban Climate Research Center Poster Symposium, Tempe, March 27, 2019.
9. Li P~, Wang ZH. Live in a steam engine - Surface energy imbalance revisited in the light of non-equilibrium thermodynamics. In: In: 2019 SEBE Graduate Poster Symposium, Tempe, February 22, 2019.
10. Wang C~, Wang ZH. Structure of similarity-driven clustering among U.S. cities in response to environmental stressors, In: 2019 SEBE Graduate Poster Symposium, Tempe, February 22, 2019.
11. Wang C~, Wang ZH. A statistical view of the Phoenix urban heat island during the past 86 Years (1933–2018), In: 2019 CAP LTER All Scientist Meeting, Tempe, January 11, 2019.
12. Wang ZH~, Li P. Surface energy imbalance revisited in the light of nonequilibrium thermodynamics. In: *99th Annual Meeting of American Meteorological Society*, Phoenix, AZ, January -6-10, 2019.
13. Wang C~, Wang ZH. Temperature regulation of the surface cooling rate of urban trees under climatic extremes. In: *99th Annual Meeting of American Meteorological Society*, Phoenix, AZ, January -6-10, 2019.
14. Li P~, Wang ZH. A novel approach to estimate actual evapotranspiration using soil moisture and meteorological measurements. In: *99th Annual Meeting of American Meteorological Society*, Phoenix, AZ, January -6-10, 2019.
15. Li Q~, Yang J, Wang ZH, Bou-Zeid E. Improving the representation of convective heat transfer in a urban canopy model. In: *7th International Building Physics Conference*, Syracuse, NY, September 23-26, 2018.
16. Wang ZH~. Energy-water trade-offs: Irrigating urban vegetation for cooling an arid city. In: *10th International Conference of Urban Climate (ICUC10)*, New York City, NY, August 06-10, 2018.
17. Wang C~, Li Q, Wang ZH. Quantifying the impact of urban trees on pollutant dispersion using a coupled LES-Lagrangian stochastic model. In: *10th International Conference of Urban Climate (ICUC10)*, New York City, NY, August 06-10, 2018.
18. Wang C~, Wang ZH, Li Q, Yang J. A coupled large-eddy simulation-Lagrangian stochastic modeling framework with applications to urban areas. In: *23rd Symposium on Boundary Layers and Turbulence*, American Meteorological Society, Oklahoma City, OK, June 11-15, 2018.
19. Wang C, Li Q, Wang ZH~. Impacts of urban trees on particle dispersion in street canyons: Modeling and applications. In: *8th International Symposium on Environmental Hydraulics*, University of Notre Dame, IN, June 04-07, 2018.

20. Li Q~, Wang ZH. Large-eddy simulation of the impact of urban trees on momentum and heat fluxes. In: *8th International Symposium on Environmental Hydraulics*, University of Notre Dame, IN, June 04-07, 2018.
21. Omidvar H~, Bou-Zeid E, Song J, Yang J, Arwatz G, Wang ZH, Hultmark M, Kaloush K. Rapid modification of land surface temperature during rainfall. In: *8th International Symposium on Environmental Hydraulics*, University of Notre Dame, IN, June 04-07, 2018.
22. Bou-Zeid E~, Yang J, Omidvar H, Li D, Wang ZH, Ryu YH, Ramamurthy P. Hydrological determinants of temperature extremes in cities. In: *98th American Meteorological Society Annual Meeting*, Austin, TX, January 7-11, 2018.
23. Wang C~, Wang ZH, Yang J, Li Q. A Lagrangian stochastic urban footprint model: Model development and evaluation. In: *98th American Meteorological Society Annual Meeting*, Austin, TX, January 7-11, 2018.
24. Wang C~, Wang C, Myint SW, Wang ZH. Spatial and temporal variability of satellite-based aerosol optical depth in the dynamic urban environment. In: 2018 CAP LTER All Scientist Meeting, Tempe, January 5, 2018.
25. Wang ZH~, Yang J. The potential water buffering capacity of urban green infrastructure in an arid environment. In: *2017 American Geophysical Union Annual Meeting, New Orleans, LA*, December 11-15, 2017.
26. Wang C~, Upreti R, Wang ZH, Yang J. Impacts of trees on urban environment in the Contiguous United States. In: *2017 American Geophysical Union Annual Meeting, New Orleans, LA*, December 11-15, 2017.
27. Omidvar H~, Bou-Zeid E, Song J, Yang J, Arwatz G, Wang ZH, Hultmark M, Kaloush K. Rapid modification of land surface temperature during rainfall. In: *2017 American Geophysical Union Annual Meeting, New Orleans, LA*, December 11-15, 2017.
28. Wang C~, Wang ZH, Yang J, Krayenhoff ES. Radiative shading effect of trees on the built environment in the contiguous United States. In: 2017 Urban Water Innovative Network (UWIN) Annual Meeting, Denver, August 2, 2017. (Second place in student poster award)
29. Upreti R~, Wang ZH, Yang J. Assessment of impacts of land use change on urban hydroclimate for Phoenix, Denver, and Las Vegas. In: 2017 American Association for the Advancement of Science (AAAS) Annual Meeting, Boston, February 16-20, 2017.
30. Omidvar H~, Bou-Zeid E, Song J, Yang J, Arwatz G, Wang ZH, Hultmark M, Kaloush K. Rapid modification of land surface temperature during rainfall. In: 97th Annual Meeting of American Meteorological Society, Seattle, January 22-26, 2017.
31. Wang C~, Upreti R, Wang ZH, Yang J. Impact of shade trees on urban hydroclimate for Phoenix and the continental United States. In: 2017 CAP LTER All Scientist Meeting, Tempe, January 13, 2017.
32. Templeton N~, Vivoni ER, Wang ZH, Schreiner-McGraw AP. Quantifying water and energy fluxes over different urban land covers in Phoenix, Arizona. In: 2017 CAP LTER

All Scientist Meeting, Tempe, January 13, 2017.

33. Yang J[~], Wang ZH. Potential water buffering capacity of urban green infrastructure in a desert city. In: AMS 32nd Conference on Agricultural and Forest Meteorology, Salt Lake City UT, June 20-24, 2016.
34. Song J[~], Wang ZH. Urban land-atmosphere coupling system: Model development and applications. In: AMS 22nd Symposium on Boundary Layer and Turbulence, Salt Lake City UT, June 20-24, 2016.
35. Yang J, Wang ZH[~], Kaloush KE, Dylla H. Effect of pavement types on urban thermal environment. In: 4th International Conference on Countermeasures to Urban Heat Island, Singapore, May 31 – June 1, 2016.
36. Yang J[~], Wang ZH. Potential water buffering capacity of urban green infrastructure in the Phoenix metropolitan area. In: AZ water 89th Annual Conference, Gilbert AZ, May 13, 2016.
37. Upreti R[~], Wang ZH, Yang J. Assessing impact of landscape characteristics on urban hydroclimate. In: 2016 American Association for the Advancement of Science (AAAS) Annual Meeting, Washington DC, February 11-15, 2016.
38. Upreti R[~], Wang ZH, Yang J. Assessing impact of landscape characteristics on urban hydroclimate. In: 2016 CAP LTER All Scientist Meeting, Tempe, January 15, 2016.
39. Wang ZH*, Yang J. A novel approach in estimating surface energy balance: new perspective of urban-rural contrast in arid cities. In: *2015 American Geophysical Union Annual Meeting, San Francisco*, December 13-18, 2015.
40. Song J[~], Wang ZH. Quantifying the boundary-layer dynamics of carbon dioxide from a built environment using a coupled urban land-atmospheric model. In: *2015 American Geophysical Union Annual Meeting, San Francisco*, December 13-18, 2015.
41. Yang J[~], Wang ZH, Chen F, Georgescu M, Miao S, Voogt JA, Tewari M. Implementing hydrological processes into the coupled WRF-urban modeling system: Physical parameterizations and case studies. In: *Croucher Advanced Study Institute 2015-2016: Changing Urban Climate & the Impact on Urban Thermal Environment and Urban Living*, Hong Kong, December 7-11, 2015.
42. Wang ZH[~], Yang J. Optimizing urban irrigation schemes for a trade-off between energy and water consumption. In: *9th International Conference on Urban Climate (ICUC9)*, Toulouse, France, July 20-24, 2015.
43. Wang ZH[~], Song J. Interfacing the urban land-atmosphere system with a coupled UCM-SCM framework: model development and sensitivity. In: *9th International Conference on Urban Climate (ICUC9)*, Toulouse, France, July 20-24, 2015.
44. Ryu YH, Bou-Zeid E, Wang ZH[~], Smith J. Development and implementation of tree processes in an urban canopy model. In: *9th International Conference on Urban Climate (ICUC9)*, Toulouse, France, July 20-24, 2015.

45. Yang L, Niyogi D~, Schmid P, Li Q, Wang ZH, Vose R, Smith J. Urban signatures in planetary boundary-layer heights: Evidence from high-resolution rawinsonde observations. In: *9th International Conference on Urban Climate (ICUC9)*, Toulouse, France, July 20-24, 2015.
46. Wang ZH~, Yang J. Estimation of land surface energy partitioning: A novel approach using a single depth soil measurement. In: *American Meteorological Society 95th Annual Meeting*, Phoenix, AZ, January 2015.
47. Song J~, Wang ZH. Impact of built environments on hydroclimate through coupled land-atmospheric modeling, In: *American Meteorological Society 95th Annual Meeting*, Phoenix, AZ, January 2015.
48. Yang J~, Wang ZH, Chen F, and Georgescu M. Effect of surface hydrological processes in urban climate with case study of green roofs. In: *American Meteorological Society 95th Annual Meeting*, Phoenix, AZ, January 2015.
49. Zhao X~, Wang ZH. Effect of shade trees on building energy efficiency. In: *17th Annual CAP LTER All-Scientist Meeting*. Tempe, AZ, January 2015.
50. Yang J~, Wang ZH. Shift of paradigm in urban irrigation: Finding the optimal scheme for building energy efficiency. In: *17th Annual CAP LTER All-Scientist Meeting*. Tempe, AZ, January 2015.
51. Song J~, Wang ZH, Vivoni ER, Mascaro G, Ruddell BL. Investigating the impacts of urbanization on regional hydrometeorology by coupling an urban canopy model into a distributed hydrological model. In: *17th Annual CAP LTER All-Scientist Meeting*. Tempe, AZ, January 2015.
52. Song J~, Wang ZH, Effect of landuse landcover changes on urban land-atmosphere interactions. In: *87th AZ Water Annual Conference*, Glendale, Arizona, May 2014.
53. Yang J~, Wang ZH, Chen F, Miao S, Tewari M and Georgescu M. Towards realistic representation of hydrological processes in integrated WRF-urban modeling system. In: *European Geosciences Union General Assembly 2014*. Vienna, Austria, April 2014.
54. Wang ZH~, Yang J. Sensitivity analysis of hydrological modeling in the WRF-Urban modeling system using advanced Monte Carlo simulations, In: *American Meteorological Society 94th Annual Meeting*, Atlanta, GA, February 2014.
55. Yang J~, Wang ZH, Chen F, Miao S, Tewari M. Enhancing hydrological modeling in the coupled WRF-urban modeling system, In: *American Meteorological Society 94th Annual Meeting*, Atlanta, GA, February 2014.
56. Chen F~, Miao S, Tewari M, Barlage M, Yang J, Wang ZH, Meng C, Ching J. Recent Enhancements to the Integrated WRF-Urban Modeling System, In: *American Meteorological Society 94th Annual Meeting*, Atlanta, GA, February 2014.
57. Song J~, Yang J, Wang ZH. Studying urban land-atmospheric interactions by coupling an urban canopy model with a single column atmospheric model. In: *16th Annual CAP LTER All-Scientist Meeting*. Tempe, AZ, January 2014.

58. Yang J~, Wang ZH. Accessing the Potential and Sensitivity of Green Roof System in Mitigating Urban Environmental Problems, In: *AZ Water Research Workshop*, Tempe, AZ, January 2014.
59. Pourshams-Manzouri T~, Stempihar JJ, Kaloush KE, Wang ZH. Pavement effects on near surface air temperature and urban heat island, In: 93rd Annual Meeting of Transportation Research Board, Washington DC, January 2014.
60. Song J~, Wang ZH. Studying urban land-atmospheric interactions by coupling an urban canopy model with single column atmospheric models, In: *American Geophysical Union Fall Meeting*. San Francisco, CA, December 2013.
61. Wang ZH~, Yang J. Test and sensitivity analysis of hydrological modeling in the coupled WRF-urban modeling system, In: *American Geophysical Union Fall Meeting*. San Francisco, CA, December 2013.
62. Yang J~, Song J, Wang ZH. Modeling hydrological processes in the coupled urban-land-atmosphere system. In: *2013 NSF CAP LTER Site Review*. Tempe, AZ, September, 2013.
63. Song J~, Yang J, Wang ZH. Modeling CAP-LTER flux tower measurements using an advanced urban canopy model. In: *15th Annual CAP LTER All-Scientist Meeting*. Tempe, AZ, January 2013.
64. Wang ZH~, A theoretic framework for coupled heat and moisture transfer in soils. In: *2012 American Geophysical Union Fall Meeting*. San Francisco, CA, December 2012.
65. Bou-Zeid E~, Wang ZH, Ramamurthy P, Ting S, Li D, Smith JA. The urban water cycle and how it modulates the microclimate and the energy cycle. In *2012 American Geophysical Union Fall Meeting*. San Francisco, CA, December 2012.
66. Wang ZH, Bou-Zeid E~, Smith JA. A coupled energy transport and hydrological model for urban canopies. In: *The International Association for Urban Climate (IAUC) Eighth International Conference on Urban Climate*. Dublin, Ireland, August, 2012.
67. Wang ZH~. A unified theoretic framework for reconstructing soil thermal field from single depth measurements. In: *30th AMS Conference on Agricultural and Forest Meteorology*. Boston, MA, June 2012.
68. Wang ZH~, Bou-Zeid E, Smith JA. A coupled energy transport and hydrological model for urban canopies. In: *2011 American Geophysical Union Fall Meeting*. San Francisco CA, December 2011.
69. Wang ZH~, Bou-Zeid E, Smith JA. A new urban surface exchange scheme: coupling physically-based energy transport with hydrological model. In: *European Geoscience Union General Assembly 2011*. Vienna, Austria, April 2011.
70. Wang ZH~, Bou-Zeid, Smith JA, Au SK, Miller S, Schreiber D. Towards improving energy budgets in urban canopy models. In: *2010 American Geophysical Union Fall Meeting*. San Francisco CA, December 2010.

71. Wang ZH, Bou-Zeid E, Smith JA. Simple models and sensor networks to study flow and energy transport in urban canopies. In: *Ninth Symposium on the Urban Environment*. Keystone CO, August 2010.
72. Wang ZH, Bou-Zeid E, Smith JA. A sensor network to study turbulent fluxes in urban canopies. In: *Fluid Dynamics & the Global Environment, the 2nd SEAS-AOS-GFDL workshop*, Princeton NJ, May 2010.
73. Wang ZH, Bou-Zeid E, Smith JA. Application of a sensor network to study the energy budget in urban canopies. In: *90th Annual Meeting of American Meteorological Society*, Atlanta GA, January 2010.
74. Scherer GW, Prévost JH, Wang ZH, Finite element analysis of the bending of a saturated beam. In: *Poromechanics IV, Proc. Fourth Biot Conf. on Poromechanics*, Eds. H.I. Ling, A. Smyth, R. Betti (DEStech Publications, Lancaster, PA, 2009), pp. 890-895, New York, USA, June 2009.
75. Wong MB, Tan KH, Wang ZH, Effect of temperature prediction methods on fire resistance of steel members. *Proceedings of the 19th Australasian Conference on the Mechanics of Structures and Materials (ACMSM)*, Christchurch, New Zealand, November 2006.
76. Wang ZH, Tan KH, Time delay coefficient of temperature formulations in EC3 Part 1-2 and classification of fire protection materials. *Proceedings of 4th international workshop of Structures in Fire*, pp.3-11, Aveiro, Portugal, 2006.
77. Tan KH, Wang ZH, Au SK, Heat transfer analysis for steel work insulated by intumescent paint exposed to standard fire conditions. *Proceedings of 3rd international workshop of Structures in Fire*, pp. 49-58, Ottawa, Canada, 2004.
78. Wang ZH, Zhao J, Numerical modeling of stress development in rock under dynamic loading. *Proceedings of 6th National Undergraduate Research Opportunity Programme (NUROP) Congress*, National University of Singapore, Singapore, 2000.

PROFESSIONAL ACTIVITIES AND SERVICE

Journal Editorial Board

- *PLoS One*, Academic Editor (2018-)

Editor of Journal Special Issues

- Special issue of “Urban Ecosystems”, *PLoS One* (2019)

International/National Professional Committees

- Board of Urban Environment, American Meteorological Society (MAS) (2014-2016)

International/National Conference Sessions

- Future Energy Landscape Working Group, In: 4th APRU Sustainable Cities and

- Landscapes Conference (virtual), 14-18 December 2020.
- Scientific Committee, In: Architectural Science Association (ASA) 2020 Conference, Auckland, New Zealand, 25-28 November 2020.
- Joint Board of Urban Environment Conferences with 30th Conference of Hydrology, In: 96th American Meteorological Society Annual Meeting, New Orleans, LA, January 2016.

International/National Conference Sessions Chaired

- Session 6C Urban Design and Planning with Climate, In: 10th International Conference of Urban Climate/14th Symposium on the Urban Environment, New York City, NY, August 08, 2018.
- 11th Symposium on the Urban Environment, In: 94th American Meteorological Society Annual Meeting, Atlanta, GA, January 2014.

Membership of National/International Professional Societies

- American Meteorological Society (AMS), member since 2009
- American Physical Society (APS), member since 2009
- American Geophysical Union (AGU), member since 2010
- American Society of Civil Engineers (ASCE), member since 2017
- International Association for Urban Climate (IAUC), member since 2019

Chair/Leader of Research Centers

- National Center of Excellence on SMART Innovations, Co-director for Climate System Research (2012 - present).
- Urban Climate Research Center (UCRC), Leadership Team (2016 - present).

Panelist for National Agencies

- National Aeronautics and Space Administration (NASA) NPP (2017/12)
- National Science Foundation (NSF): Environmental Sustainability (2016/03)
- US Environmental Protection Agency (USEPA) STAR Program (2015/09)
- US Environmental Protection Agency (USEPA) STAR Program (2013/03)

Proposal Reviewer for National/International Funding Agencies

- National Science Foundation (NSF)
- Army Research Office (ARO)
- National Aeronautics and Space Administration (NASA)
- US Environmental Protection Agency (USEPA)
- Canada Foundation for Innovation (CFI)
- Netherlands Organisation for Scientific Research

Peer Reviewer for Journals: 83 journals (sample journals shown below)

- Applied Energy
- Environmental Science & Technology
- Geophysical Research Letters
- Geoscientific Model Development
- Landscape and Urban Planning
- Nature Communications
- Remote Sensing of Environment

- Renewable & Sustainable Energy Reviews
- Water Resources Research

PERSONNEL: STUDENT SUPERVISION/MENTORING, TEACHING, DISSERTATION COMMITTEES, RESEARCH, AND OUTREACH

SUMMARY OF MENTORING

Ph.D. Students Graduated

- Chenghao Wang (Fall 2019): Now post-doc researcher at Stanford University
- Jiyun Song (Fall 2016): Now Assistant Professor at the University of Hong Kong
- Jiachuan Yang (Fall 2016): Now Assistant Professor at Hong Kong University of Science and Technology

Ph.D. Students Current

- Xueli Yang (started Fall 2019)
- Peiyuan Li (started Fall 2017)

M.S. Students Graduated

- Ruby Upreti (Summer 2017)
- Jiachuan Yang (Fall 2012)
- Tina Pourshams-Manzouri (Spring 2013, co-advised with K. Kaloush)

Undergraduate Students (Research)

- Denisse Arellano (2019): Learn Explore Advance Design (LEAD) fellowship
- Rachel Von Gnechten (Spring 2017), Honors thesis
- Hannah Housenga (Spring 2015, co-advised with K. Kaloush), Honors thesis
- David Little (Spring 2013), independent student researcher

Visiting Graduate Students

- Fan Huang (Ph.D. student, Nanjing University, 09/2016-12/2017)
- Xiaoxi Zhao (M.S. student, China Three Gorge University, 09/2014-03/2015)

SUMMARY OF TEACHING

Undergraduate Courses Taught, including New Course Development

- CEE 341: Fluid Mechanics for Civil Engineers
- CEE 466: Urban Water System Design

Graduate Courses Taught, including New Course Development

- CEE 598: Environmental Fluid Mechanics
- CEE 598: Hydrometeorology
- CEE 598: Atmospheric Convection and Thermodynamics
- CEE 598: Urban Water System Design

RESEARCH SUPPORT

SUMMARY OF RESEARCH SUPPORT

Funded Projects: (SP: Senior Personnel; * ASU institutional PI on collaborative projects)

ARO: Army Research Office
 NAPA: National Asphalt Pavement Association
 NSF: National Science Foundation
 NTC: National Transportation Center @ Maryland
 SRP: Salt River Project Arizona

Agency	Title	Role	Period	Project total	Wang's recogn.
NSF	Collaborative Research: Geoengineering of Urban Green Infrastructure to Improve Outdoor Livability	PI*	11/1/20-10/31/23	\$300,000	\$120,000
NASA	Connecting Urbanization to Patterns of Heat and Precipitation Risk: Linking Mechanistic Understanding to Quantification by Remote Sensing PI: J. Albertson (Cornell Univ.)	Co-PI	7/1/20-6/30/23	\$1,500,000	\$288,382
NSF	Co-evolution of anthropogenic stressors and regional urban hydroclimate through multiscale land-atmosphere interactions	PI	12/1/19-11/30/22	\$150,000	\$150,000
NAPA	Critical review and gap analysis of impacts from pavements on urban heat island	PI	8/1/18-7/31/19	\$63,326	\$31,663
NSF	LTER: CAP IV - Investigating urban ecology and sustainability through the lens of Urban Ecological Infrastructure PI: D. Childers	SP	12/1/18-11/30/22	\$4,507,998	\$90,160
ARO	The impact of landscape characteristics on urban surface energy balance	PI	1/1/16-9/30/16	\$50,000	\$50,000
NTC	Sustainability and scaling of urban transportation networks	PI	1/1/16-12/31/16	\$30,062	\$21,043
NSF	Urban Water Innovation Network (U-WIN): Transitioning Toward Sustainable Urban Water Systems; PI: A. Mazdak (CSU)	Co-PI*	9/15/15-9/14/18	\$1,191,572	\$345,556
NSF	DMUU: DCDC III: Transformational Solutions for Urban Water Sustainability Transitions in the Colorado River Basin PI: D. White	SP	9/1/15-8/31/19	\$4,499,926	\$90,000

ARO	Rapid modifications of land surface temperature during rainfall: basics and implications; PI: E. Bou-Zeid (Princeton)	PI*	9/1/14-5/31/18	\$360,263	\$89,999
NSF	Sustainable urban development in the Sun Corridor: Finding engineering alternatives through coupled WRF-urban land surface modeling	PI	9/1/14-8/31/18	\$299,838	\$269,854
NAPA	Effect of pavement materials on building energy efficiency	PI	7/1/14-6/30/15	\$75,041	\$60,033
NAPA	Unintended consequence of reflective pavements	PI	3/15/13-12/31/13	\$19,618	\$15,694
SRP	Temperature effects on the water level height measurements; PI: T.W. Lee	Co-PI	09/01/12-08/31/14	\$38,212	\$19,106

Last updated: 10/20/2020