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Education

Ph.D., Civil Engineering, Purdue University, May 2008

- Major: Hydraulic and Hydrologic Engineering
- Dissertation: Multivariate Statistical Analysis of Indiana Hydrologic Data
- Advisor: Dr. Rao S. Govindaraju

M.S., Civil Engineering, National Taiwan University, June 2001

- Major: Hydraulic Engineering
- Thesis: A Study in Development of Regional Design Hyetographs
- Advisor: Dr. Gwo-Fong Lin

B.S., Civil Engineering, National Taiwan University, June 1999

Other:

- NAFTA Student Exchange Program, Lakehead University (Canada), June–July 2006

Appointments

Jan 2017–present	Joint Faculty, The Bredesen Center for Interdisciplinary Research and Graduate Education, University of Tennessee, Knoxville, TN
Jan 2017–present	Senior Research Staff, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
Dec 2013–Dec 2016	Research Staff, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
Dec 2010–Nov 2012	Research Associate, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
Feb 2009–Nov 2010	Post-doctoral Research Associate, Computational Sciences and Engineering Division, Oak Ridge National Laboratory, Oak Ridge, TN
May 2008–Jan 2009	Post-doctoral Research Associate, School of Civil Engineering, Purdue University, West Lafayette, IN
Aug 2004–May 2008	Graduate Research/Teaching Assistant, School of Civil Engineering, Purdue University, West Lafayette, IN
March 2003–July 2004	Full-time Teaching Assistant, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan

Honors / Certificates

April 2014	Significant Event Award – “National Hydropower Asset Assessment Program (NHAAP),” Oak Ridge National Laboratory
Oct 2013	Statistical Hydrology Best Paper Award, International Commission on Statistical Hydrology, International Association of Hydrological Sciences
Jan 2010	Outstanding Reviewer Award, Journal of Hydrologic Engineering, American Society of Civil Engineers

Oct 2008	Civil Engineering Best Dissertation Award, Purdue University
Apr 2008	Gerrit H. Toebes Memorial Award, Purdue University
Oct 2007	Jacques W. Delleur Traveling Award, Purdue University
April 2006	Estus H. and Vashti L. Magoon Outstanding Teaching Assistant Award, Purdue University
Oct 2005	Passed the NCEES Fundamentals of Engineering Examinations
June 2001	Honorary member of the Phi Tau Phi Scholastic Society, Taiwan
May 2001	Certificate of Civil Engineer, Taiwan (PE equivalent)

List of Publications

Peer-reviewed Journal Articles

- [37] Beigi, E., F. T.-C. Tsai, V. P. Singh, and S.-C. Kao (2019), Bayesian Hierarchical Model Uncertainty Quantification for Future Hydroclimate Projections in Southern Hills-Gulf Region, USA (2019), *Water*, 11(2), 268, doi:10.3390/w11020268.
- [36] Kao, S.-C., S. T. DeNeale, and D. B. Watson (2019), Hurricane Harvey Highlights: Need to Assess the Adequacy of Probable Maximum Precipitation Estimation Methods, *J. Hydrol. Eng.*, 24 (4), 05019005, doi:10.1061/(ASCE)HE.1943-5584.0001768.
- [35] McManamay, R. A., M. J. Troia, C. R. DeRolph, A. O. Sheldon, A. Barnett, S.-C. Kao, and M. Anderson (2018), A Stream Classification System to Explore the Physical Habitat Diversity and Anthropogenic Impacts in Riverscapes of the Eastern United States, *PLoS ONE*, 13(6), e0198439, doi:10.1371/journal.pone.0198439.
- [34] Zhao, G., H. Gao, S.-C. Kao, N. Voisin, and B. S. Naz (2018), A Modeling Framework for Evaluating the Drought Resilience of a Surface Water Supply System under Non-stationarity, *J. Hydrol.*, 563, 22–32, doi:10.1016/j.jhydrol.2018.05.037.
- [33] Gangrade, S., S.-C. Kao, B. S. Naz, D. Rastogi, M. Ashfaq, N. Singh, and B. L. Preston (2018), Sensitivity of Probable Maximum Flood in a Changing Environment, *Water Resour. Res.*, 54(6), 3913–3936, doi:10.1029/2017WR021987.
- [32] Forbes, W., J. Mao, M. Jin, S.-C. Kao, W. Fu, X. Shi, D. Ricciuto, P. Thornton, A. Ribes, Y. Wang, S. Piao, T. Zhao, C. Schwalm, F. Hoffman, J. Fisher, A. Ito, B. Poulter, Y. Fang, H. Tian, A. Jain, and D. Hayes (2018), Contribution of Environmental Forcings to US Runoff Changes for the Period 1950–2010, *Environ. Res. Lett.*, 13(5), doi:10.1088/1748-9326/aabb41.
- [31] Naz, B. S., S.-C. Kao, M. Ashfaq, H. Gao, D. Rastogi, and S. Gangrade (2018), Effects of Climate Change on Streamflow Extremes and Implications for Reservoir Inflow in the United States, *J. Hydrol.*, 556, 359–370, doi:10.1016/j.jhydrol.2017.11.027.
- [30] Rastogi, D., S.-C. Kao, M. Ashfaq, R. Mei, E. D. Kabela, S. Gangrade, B. S. Naz, B. L. Preston, N. Singh, and V. G. Anantharaj (2017), Effects of Climate Change on Probable Maximum Precipitation: A Sensitivity Study over the Alabama-Coosa-Tallapoosa River Basin, *J. Geophys. Res.-Atmos.*, 122, 4808–4828, doi:10.1002/2016JD026001.
- [29] Zhao, G., H. Gao, B. S. Naz, S.-C. Kao, and N. Voisin (2016), Integrating a Reservoir Regulation Scheme into a Spatially Distributed Hydrological Model, *Adv. Water Resour.*, 98, 16–31, doi:10.1016/j.advwatres.2016.10.014.
- [28] Pagán, B., M. Ashfaq, D. Rastogi, D. Kendall, S.-C. Kao, B. S. Naz, R. Mei, and J. S. Pal (2016), Extreme Hydrological Changes in the Southwestern U.S. Drive Reductions in Water Supply to Southern California by Mid Century, *Environ. Res. Lett.*, 11(9), 094026, doi:10.1088/1748-9326/11/9/094026.
- [27] Ashfaq, M., D. Rastogi, R. Mei, S.-C. Kao, S. Gangrade, B. S. Naz, and D. Touma (2016), High-resolution Ensemble Projections of Near-term Regional Climate over the Continental United States, *J. Geophys. Res.-Atmos.*, 121, 9943–9963, doi:10.1002/2016JD025285.
- [26] Mani, A., F. T.-C. Tsai, S.-C. Kao, B. S. Naz, M. Ashfaq, and D. Rastogi (2016), Conjunctive

- Management of Surface and Groundwater Resources under Projected Future Climate Change Scenarios, *J. Hydrol.*, 540, 397–411, doi:10.1016/j.jhydrol.2016.06.021.
- [25] Naz, B. S., S.-C. Kao, M. Ashfaq, D. Rastogi, R. Mei, and L. C. Bowling (2016), Regional Hydrologic Response to Climate Change in the Conterminous United States Using High-resolution Hydroclimate Simulations, *Global Planet. Change*, 143, 100–117, doi:10.1016/j.gloplacha.2016.06.003.
- [24] McManamay, R. A., C. Oigbokie, S.-C. Kao, and M. S. Bevelhimer (2016), Classification of US Hydropower Dams by their Modes of Operation, *River Res. Appl.*, 32(7), 1450–1468, doi:10.1002/rra.3004.
- [23] Pasha, M. F. K., D. Yeasmin, S. Saetern, M. Yang, S.-C. Kao, and B. T. Smith (2016), Uncertainty Analysis in Geospatial Merit Matrix-Based Hydropower Resource Assessment, *J. Water Res. Pl.*, 142(4), 06016001, doi:10.1061/(ASCE)WR.1943-5452.0000599.
- [22] Pasha, M. F. K., M. Yang, D. Yeasmin, S. Saetern, S.-C. Kao, and B. T. Smith (2016), Identifying High-Power-Density Stream-Reaches through Refined Geospatial Resolution in Hydropower Resource Assessment, *J. Water Res. Pl.*, 06016001, doi:10.1061/(ASCE)WR.1943-5452.0000599.
- [21] Touma, D., M. Ashfaq, M. A. Nayak, S.-C. Kao, and N. S. Diffenbaugh (2015), A Multi-model and Multi-index Evaluation of Drought Characteristics in the 21st Century, *J. Hydrol.*, 526, 196–207, doi:10.1016/j.jhydrol.2014.12.011.
- [20] Kao, S.-C., M. J. Sale, M. Ashfaq, R. Uría Martínez, D. P. Kaiser, Y. Wei, and N. S. Diffenbaugh (2015), Projecting Changes in Annual Hydropower Generation Using Regional Runoff Data: An Assessment of the United States Federal Hydropower Plants, *Energy*, 80, 239–250, doi:10.1016/j.energy.2014.11.066.
- [19] McManamay, R. A., N. Samu, S.-C. Kao, M. S. Bevelhimer, and S. C. Hetrick (2015), A Multi-scale Spatial Approach to Address Environmental Effects of Small Hydropower Development, *Environ. Manage.*, 55(1), 217–243, doi:10.1007/s00267-014-0371-2.
- [18] Pasha, M. F. K., D. Yeasmin, S.-C. Kao, B. Hadjerioua, Y. Wei, and B. T. Smith (2014), Stream-reach Identification for New Run-of-River Hydropower Development through a Merit Matrix-Based Geospatial Algorithm, *J. Water Res. Pl.*, 140(8), 04014016, doi:10.1061/(ASCE)WR.1943-5452.0000429.
- [17] McManamay, R. A., M. S. Bevelhimer, and S.-C. Kao (2014), Updating the US Hydrologic Classification: An Approach to Clustering and Stratifying Ecohydrologic Data, *Ecohydrology*, 7(3), 903–926, doi:10.1002/eco.1410.
- [16] Oubeidillah, A. A., S.-C. Kao, M. Ashfaq, B. S. Naz, and G. Tootle (2014), A Large-Scale, High-Resolution Hydrological Model Parameter Data Set for Climate Change Impact Assessment for the Conterminous US, *Hydrol. Earth Syst. Sci.*, 18, 67–84, doi:10.5194/hess-18-67-2014.
- [15] Ashfaq, M., S. Ghosh, S.-C. Kao, L. C. Bowling, P. Mote, D. Touma, S. A. Rauscher, and N. S. Diffenbaugh (2013), Near-term Acceleration of Hydroclimatic Change in the Western U.S., *J. Geophys. Res.-Atmos.*, 118, 10,676–10,693, doi:10.1002/jgrd.50816.
- [14] Kao, S.-C., H. K. Kim, C. Liu, X. Cui, and B. L. Bhaduri (2012), Dependence-preserving Approach to Synthesizing Household Characteristics, *Transport. Res. Record*, 2302, 192–200, doi:10.3141/2302-21.
- [13] Cui, X., H. K. Kim, C. Liu, S.-C. Kao, and B. L. Bhaduri (2012), Simulating the Household Plug-in Hybrid Electric Vehicle Distribution and Its Electric Distribution Network Impacts, *Transport. Res. D-TR. E.*, 17, 548–554, doi:10.1016/j.trd.2012.05.011.
- [12] Kao, S.-C., and N.-B. Chang (2012), Copula-Based Flood Frequency Analysis at Ungauged Basin Confluences: Nashville, Tennessee, *J. Hydrol. Eng.*, 17(7), 790–799, doi:10.1061/(ASCE)HE.1943-5584.0000477.
- [11] Ghosh, S., D. Das, S.-C. Kao, and A. R. Ganguly (2012), Lack of Uniform Trends but Increasing

- Spatial Variability in Observed Indian Rainfall Extremes, *Nature Climate Change*, 2, 86–91, doi:10.1038/nclimate1327.
- [10] Kao, S.-C., and A. R. Ganguly (2011), Intensity, Duration, and Frequency of Precipitation Extremes under 21st-century Warming Scenarios, *J. Geophys. Res.–Atmos.*, 116, D16119, doi:10.1029/2010JD015529.
- [9] Kao, S.-C., and R. S. Govindaraju (2010), Reply to Comment by T. P. Hutchinson on “Trivariate Statistical Analysis of Extreme Rainfall Events via the Plackett Family of Copulas”, *Water Resour. Res.*, 46, W04802, doi:10.1029/2009WR008774.
- [8] Kao, S.-C., and R. S. Govindaraju (2010), A Copula-based Joint Deficit Index for Droughts, *J. Hydrol.*, 380, 121–134, doi:10.1016/j.jhydrol.2009.10.029.
- [7] Kao, S.-C., T. P. Chan, R. Sultana, T. Konopka, T. Cooper, B. Partridge, and R. S. Govindaraju (2009), Hydrologic and Environmental Performance of a Subsurface Constructed Wetland at a Highway Rest Area: A Case Study, *Water Qual. Expo. Health*, 1, 35–48, doi:10.1007/s12403-009-0004-9.
- [6] Kao, S.-C., and R. S. Govindaraju (2008), Trivariate Statistical Analysis of Extreme Rainfall Events via Plackett Family of Copulas, *Water Resour. Res.*, 44, W02415, doi:10.1029/2007WR006261.
- [5] Kao, S.-C., and A. R. Rao (2008), At-Site Based Evaluation of Rainfall Estimates for Indiana, *J. Hydrol. Eng.*, 13(3), 184–188, doi:10.1061/(ASCE)1084-0699(2008)13:3(184).
- [4] Kao, S.-C., and R. S. Govindaraju (2007), A Bivariate Frequency Analysis of Extreme Rainfall with Implications for Design, *J. Geophys. Res.–Atmos.*, 112, D13119, doi:10.1029/2007JD008522.
- [3] Kao, S.-C., and R. S. Govindaraju (2007), Probabilistic Structure of Storm Surface Runoff Considering the Dependence between Average Intensity and Storm Duration of Rainfall Events, *Water Resour. Res.*, 43, W06410, doi:10.1029/2006WR005564.
- [2] Rao, A. R., and S.-C. Kao (2007), Discussion of "Updated Precipitation Frequency Estimates for Kansas City: Comparison with TP-40 and HYDRO-35" by C. Bryan Young and Bruce M. McEnroe, *J. Hydrol. Eng.*, 12(6), 694–699, doi:10.1061/(ASCE)1084-0699(2007)12:6(694).
- [1] Lin, G.-F., L.-H. Chen, and S.-C. Kao (2005), Development of Regional Design Hyetographs, *Hydrol. Process*, 19, 937–946, doi:10.1002/hyp.5550.

Technical Reports

- [14] DeNeale, S. T., and S.-C. Kao (2018), *Technical Evaluation Report: Review of the Site-Specific Probable Maximum Precipitation Study for the Tennessee Valley Authority Nuclear Power Plants*, ORNL/TM-2018/994, Oak Ridge National Laboratory, Oak Ridge, TN.
- [13] Kao, S.-C., and K. Johnson (2018), *An Assessment of Energy Potential at Public Drinking Water Systems: Initial Report on Methodology*, ORNL/TM-2018/869, Oak Ridge National Laboratory, Oak Ridge, TN.
- [12] Stewart, K. M., B. T. Smith, A. Witt, S. T. DeNeale, M. Bevelhimer, J. L. Pries, T. A. Burrell, S.-C. Kao, M. Mobley, K. Lee, S. Curd, A. Tsakiris, C. Mooneyham, T. Papanicolaou, K. Ekici, M. Whisenant, T. Welch, and D. Rabon (2017), *Simulation and Modeling Capability for Standard Modular Hydropower Technology*, ORNL/TM-2017/175, Oak Ridge National Laboratory, Oak Ridge, TN.
- [11] Allen, M. R., T. J. Wilbanks, B. L. Preston, S.-C. Kao, and J. Bradbury (2017), *Assessing the Costs and Benefits of Resilience Investments: Tennessee Valley Authority Case Study*, ORNL/TM-2017/13, Oak Ridge National Laboratory, Oak Ridge, TN.
- [10] Kao, S.-C., S. Chinthavali, S. Lee, K. M. Stewart, M. R. Allen, B. T. Smith, and B. L. Bhaduri (2016), *Scoping Analytical Tools and Methods for Vulnerability Analysis of Linked Electricity Generation and River Basin Systems*, ORNL/TM-2016/282, Oak Ridge National Laboratory, Oak Ridge, TN.
- [9] Kao, S.-C., M. Ashfaq, B. S. Naz, R. Uría Martínez, D. Rastogi, R. Mei, Y. Jager, N. M. Samu, and M. J.

- Sale (2016), *The Second Assessment of the Effects of Climate Change on Federal Hydropower*, ORNL/SR-2015/357, Oak Ridge National Laboratory, Oak Ridge, TN.
- [8] Schubel, J., J. A. Lentz, F. Qader, A. Kishaba, D. Bader, L. Perkins, E. Yam, A. Kaneda, L. Brown, B. R. Pagán, J. S. Pal, C. Gao, J. Reichenberger, D. R. Kendall, M. Ashfaq, D. Rastogi, S.-C. Kao, B. S. Naz, and D. Otto (2015), *City of Long Beach Climate Resiliency Assessment Report*, prepared by the Aquarium of the Pacific (AOP), for the City of Long Beach, CA.
- [7] Kao, S.-C., R. A. McManamay, K. M. Stewart, N. Samu, B. Hadjerioua, S. T. DeNeale, D. Yeasmin, M. F. K. Pasha, A. A. Oubeidillah, and B. T. Smith (2014), *New Stream-reach Development: A Comprehensive Assessment of Hydropower Energy Potential in the United States*, GPO DOE/EE-1063, Wind and Water Power Program, Department of Energy, Washington, DC.
- [6] Hadjerioua, B., S.-C. Kao, R. A. McManamay, M. F. K. Pasha, D. Yeasmin, A. A. Oubeidillah, N. Samu, K. M. Stewart, M. S. Bevelhimer, S. C. Hetrick, Y. Wei, and B. T. Smith (2013), *An Assessment of Energy Potential from New Stream-reach Development in the United States: Initial Report on Methodology*, ORNL/TM-2012/298, Oak Ridge National Laboratory, Oak Ridge, TN.
- [5] Sale, M. J., S.-C. Kao, M. Ashfaq, D. P. Kaiser, R. Uría Martínez, C. Webb, and Y. Wei (2012), *Assessment of the Effects of Climate Change on Federal Hydropower*, ORNL/TM-2011/251, Oak Ridge National Laboratory, Oak Ridge, TN.
- [4] Hadjerioua, B., Y. Wei, and S.-C. Kao (2012), *An Assessment of Energy Potential at Non-powered Dams in the United States*, GPO DOE/EE-0711, Wind and Water Power Program, Department of Energy, Washington, DC.
- [3] Hadjerioua, B., S.-C. Kao, M. J. Sale, Y. Wei, S. K. SanthanaVannan, H. A. Shanafield III, D. P. Kaiser, R. Devarakonda, C. Odeh, G. Palanisamy, and B. T. Smith (2010), *National Hydropower Asset Assessment Project (NHAAP) 2010 Final Annual Report*, ORNL/TM-2010/260, Oak Ridge National Laboratory, Oak Ridge, TN.
- [2] Kao, S.-C., S. Tripathi, T. J. Cooper, T. P. Chan, J. E. Alleman, and R. S. Govindaraju (2008), *The I-70 Greenfield Rest Area Wetland Projects: Final Report*, Joint Transportation Research Program Report, Purdue University, West Lafayette, IN.
- [1] Rao, A. R., and S.-C. Kao (2006), *Statistical Analysis of Indiana Rainfall Data*, Joint Transportation Research Program Report, C-36-62R, Purdue University, West Lafayette, IN.

Dissertation / Thesis

- [2] Kao, S.-C. (2008), *Multivariate Statistical Analysis of Indiana Hydrologic Data*, Ph.D. Dissertation, School of Civil Engineering, Purdue University, West Lafayette, IN.
- [1] Kao, S.-C. (2001), *A Study in Development of Regional Design Hyetographs*, Master Thesis, Department of Civil Engineering, National Taiwan University, Taipei, Taiwan.

Book Chapter

- [2] Grimaldi, S., S.-C. Kao, A. Castellarin, S.-M. Papalexiou, A. Viglione, F. Laio, H. Aksoy, and A. Gedikli (2011), Statistical Hydrology, *Treatise on Water Science*, 479, doi:10.1016/B978-0-444-53199-5.00046-4.
- [1] Kao, S.-C., and R. S. Govindaraju (2008), Probabilistic Structure of Rainfall Events over Indiana, USA, in *Hydraulics and Hydrology* (ed. V. P. Singh), Water Resources Publications, LLC, pp. 505-532.

Other Publication

- [5] Contributor – River Management Joint Operating Committee (2018), *Climate and Hydrology Datasets for RMJOC Long-Term Planning Studies: Second Edition (RMJOC-II), Part I: Hydroclimate Projections and Analyses*, River Management Joint Operating Committee (RMJOC): Bonneville Power Administration, US Army Corps of Engineers, and Bureau of Reclamation.

- [4] *Lead author* – U.S. Department of Energy (2017), *Effects of Climate Change on Federal Hydropower: The Second Report to Congress*, Department of Energy, Washington, DC.
- [3] *Contributor* – U.S. Department of Energy (2016), *Hydropower Vision: A New Chapter for America's 1st Renewable Electricity Source*, Wind and Water Power Program, Department of Energy, Washington, DC.
- [2] *Lead author* – U.S. Department of Energy (2013), *Effects of Climate Change on Federal Hydropower: Report to Congress*, DOE/GO-102016-4869, Department of Energy, Washington, DC.
- [1] Hadjerioua, B., S.-C. Kao, Y. Wei, B. T. Smith, and H. Battey (2012), Non-powered Dams: An Uptapped Source of Renewable Electricity in the USA, *The International Journal on Hydropower and Dams*, 19(4), 45–48.

Selected Conference Paper / Presentation

- [69] Gangrade, S., S.-C. Kao, T. T. Dullo, and A. J. Kalyanapu (2018), Ensemble-based Probabilistic Flood Maps for Probable Maximum Flood, American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [68] DeNeale, S. T., S.-C. Kao, E. Yegorova, J. Kanney, and M. L. Carr (2018), A Comparative Evaluation of Precipitation Areal Reduction Factor Variability across the Conterminous United States, American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [67] Dullo, T. T., S. Gangrade, A. J. Kalyanapu, S.-C. Kao, S. K. Ghafoor, and K. J. Evans (2018), High-resolution Modeling of Hurricane Harvey Flooding for Harris County, TX using a Calibrated GPU-Accelerated 2D Flood Model, American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [66] Shao, M., G. Zhao, C. Holmes, S.-C. Kao, and Huilin Gao (2018), Quantifying the Individual and Combined Impacts of Urbanization and Changing Climate on Hydrological Processes – A Case Study of Two Adjacent Basins in Texas, American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [65] Yuan, F., G. Wang, S.-C. Kao, J. Kumar, V. G. Salmon, C. M. Iversen, A. L. Breen, P. E. Thornton, and S. Wullschleger (2018), Pathways to High Resolution Simulation of Land Surface Processes in Arctic Region: A Case Study on C & N Cycles Using PFLOTRAN Coupled E3SM Land Model (ELM), American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [64] Yang, Y., M. Pan, H. Beck, C. K. Fisher, E. Beighley, S.-C. Kao, Y. Hong, and E. F. Wood (2018), In Quest of Calibration Density and Consistency in Hydrologic Modeling: Distributed Parameter Calibration against Streamflow Characteristics, American Geophysical Union 2018 Fall Meeting, Dec. 10–14, Washington, D.C.
- [63] Mao, J., W. Forbes, M. Jin, S.-C. Kao, W. Fu, X. Shi, D. Ricciuto, P. Thornton, A. Ribes, Y. Wang, S. Piao, T. Zhao, C. R. Schwalm, F. Hoffman, J. B. Fisher, A. Ito, B. Poulter, Y. Fang, H. Tian, and A. Jain (2018), Contribution of Climatic and Non-climatic Forcings to Us Runoff Changes for the Period 1950-2010, the 15th Asia Oceania Geosciences Society Annual Meeting, June 3–8, Honolulu, HI.
- [62] Gangrade, S., S.-C. Kao, B. S. Naz, D. Rastogi, M. Ashfaq, N. Singh, and B. L. Preston (2018), Evaluating the Sensitivity of Probable Maximum Flood using a High-resolution Distributed Hydrologic Model, World Environmental & Water Resources Congress 2018, June 3–7, Minneapolis, MN.
- [61] Zhao, G., H. Gao, and S.-C. Kao (2018), Impacts of Historical and Future Climate Change on the Blue Water Footprint of Hydropower in the United States, World Environmental & Water Resources Congress 2018, June 3–7, Minneapolis, MN.
- [60] Kalyanapu, A. J., T. T. Dullo, S. Gangrade, S.-C. Kao, R. Marshall, S. R. Islam, and S. K. Ghafoor (2018), Reconstruction of Hurricane Harvey Flooding for Harris County, TX using a GPU-accelerated 2D flood model for post-flood hazard analysis, 27th Tennessee Watershed

- Symposium: Adapting to Hydrologic Extremes, April 11–13, Montgomery Bell State Park, Burns, TN.
- [59] Mao, J., W. Forbes, W. Fu, X. Shi, D. M. Ricciuto, M. Jin, and S.-C. Kao (2018), Detection and Attribution of the Terrestrial Runoff in the Conterminous United States, the 98th American Meteorological Society Annual Meeting, January 7–11, Austin, TX.
 - [58] Kao, S.-C., X. Shi, J. Kumar, D. M. Ricciuto, J. Mao, and P. E. Thornton (2017), Can Earth System Model Provide Reasonable Natural Runoff Estimates to Support Water Management Studies?, American Geophysical Union 2017 Fall Meeting, Dec. 11–15, New Orleans, LA.
 - [57] Kalyanapu, A. J., T. T. Dullo, S. Gangrade, S.-C. Kao, R. Marshall, S. R. Islam, and S. K. Ghafoor (2017), Hurricane Harvey Riverine Flooding: Part 1 – Reconstruction of Hurricane Harvey Flooding for Harris County, TX using a GPU-accelerated 2D flood model for post-flood hazard analysis, American Geophysical Union 2017 Fall Meeting, Dec. 11–15, New Orleans, LA.
 - [56] Chegwiddden, O., B. Nijssen, D. Rupp, M. Clark, and S.-C. Kao (2017), How Do the Methodological Choices of Your Climate Change Study Affect Your Results? A Hydrologic Case Study Across the Pacific Northwest, American Geophysical Union 2017 Fall Meeting, Dec. 11–15, New Orleans, LA.
 - [55] Karakullukcu, R. E., F. T.-C. Tsai, D. Bhatta, K. Paudel, and S.-C. Kao (2017), Development of A Mississippi River Alluvial Aquifer Groundwater Model, American Geophysical Union 2017 Fall Meeting, Dec. 11–15, New Orleans, LA.
 - [54] Dullo, T. T., S. Gangrade, R. Marshall, S. R. Islam, S. K. Ghafoor, S.-C. Kao, and A. J. Kalyanapu (2017), A Large-scale Simulation of Climate Change Effects on Flood Regime – A Case Study for the Alabama-Coosa-Tallapoosa River Basin, American Geophysical Union 2017 Fall Meeting, Dec. 11–15, New Orleans, LA.
 - [53] Kao, S.-C., D. Rastogi, M. Ashfaq, R. Mei, E. D. Kabela, S. Gangrade, B. S. Naz, B. L. Preston, N. Singh, and V. G. Anantharaj (2017), Assessing the Effects of Climate Change on Probable Maximum Precipitation through Numerical Weather Simulation, World Environmental & Water Resources Congress 2017, May 21–25, Sacramento, CA.
 - [52] Dullo, T., S. Gangrade, R. Marshall, S. R. Islam, S. K. Ghafoor, S.-C. Kao, B. L. Preston, and A. J. Kalyanapu (2017), The Vulnerability of Critical Energy Infrastructures to Climate Change Induced Flooding: A Case Study for the Alabama-Coosa-Tallapoosa River Basin, World Environmental & Water Resources Congress 2017, May 21–25, Sacramento, CA.
 - [51] Kao, S.-C., B. S. Naz, S. Gangrade, M. Ashfaq, and D. Rastogi (2016), Sensitivity of Hydrologic Extremes to Spatial Resolution of Meteorological Forcings: A Case Study of the Conterminous United States, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.
 - [50] Gangrade, S., S.-C. Kao, D. Rastogi, M. Ashfaq, B. S. Naz, E. D. Kabela, V. Anantharaj, N. Singh, B. L. Preston, and R. Mei (2016), Evaluation of Probable Maximum Precipitation and Flood under Climate Change in the 21st Century, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.
 - [49] Kalyanapu, A. J., T. T. Dullo, S. Gangrade, R. Marshall, S. R. Islam, S. K. Ghafoor, S.-C. Kao, and B. L. Preston (2016), Development of an Integrated DHSVM-Flood2D-GPU modeling framework – A Case Study for the Alabama-Coosa-Tallapoosa River Basin, American Geophysical Union 2016 Fall Meeting, Dec. 12–16, San Francisco, CA.
 - [48] Pasha, M. F. K., S. Kamuni, D. Yeasmin, S.-C. Kao, and B. T. Smith (2016), Development of Regression Equations to Estimate Regional Hydropower Potential, HydroVision International 2016, July 26–29, Minneapolis, MN.
 - [47] Gangrade, S., S.-C. Kao, B. S. Naz, M. Ashfaq, and D. Rastogi (2016), Evaluating the Uncertainties of Future Water Availability Projections through the Choice of Different Hydrologic Models, World Environmental & Water Resources Congress 2016, May 22–26, West Palm Beach, FL.
 - [46] Naz, B. S., S.-C. Kao, M. Ashfaq, D. Rastogi, R. Mei, and S. Gangrade (2016), Assessing Hydrological Impacts of Climate Change in the United States: Implication for Hydropower

- Facilities, World Environmental & Water Resources Congress 2016, May 22–26, West Palm Beach, FL.
- [45] Zhao, G., H. Gao, B. S. Naz, S.-C. Kao, and N. Voisin (2016), Evaluating Water Supply Resilience under Future Droughts and Population Growth, World Environmental & Water Resources Congress 2016, May 22–26, West Palm Beach, FL.
- [44] Pagán, B., M. Ashfaq, D. Rastogi, S.-C. Kao, B. S. Naz, R. Mei, D. Kendall, and J. S. Pal. (2016), Extreme Hydrological Changes in the Western United States Drive Reductions in Water Supply by Mid Century, European Geosciences Union General Assembly 2016, April 17–22, Vienna, Austria.
- [43] Zhao, G., H. Gao, B. S. Naz, S.-C. Kao, and N. Voisin (2016), Survivability of Megacities Under the Impacts of Future Drought and Population Growth, Texas Weather Conference, Feb. 5–6, Austin, TX.
- [42] Gadiraju, K., B. Ramachandra, D. Kaiser, T. Karnowski, S.-C. Kao, T. Jiang, S. Ostro, and R. Vatsavai (2016), A Machine-Learning Approach to Studying Relationships Between Extremes in Geopotential Height and Surface Temperature, 96th American Meteorological Society Annual Meeting, January 10–14, New Orleans, LA.
- [41] Kao, S.-C., B. S. Naz, and S. Gangrade (2015), Sensitivity of Regional Hydropower Generation to the Projected Changes in Future Watershed Hydrology, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [40] Hayes, B., S.-C. Kao, J. Kanney, K. Quinlan, and S. T. DeNeale (2015), Site Specific Probable Maximum Precipitation Estimates and Professional Judgement, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [39] Gangrade, S., D. Rastogi, S.-C. Kao, M. Ashfaq, B. S. Naz, E. D. Kabela, V. Anantharaj, N. Singh, B. L. Preston, and R. Mei (2015), An Integrated Modeling Framework for Probable Maximum Precipitation and Flood, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [38] Ashfaq, M., D. Rastogi, R. Mei, S.-C. Kao, B. S. Naz, and S. Gangrade (2015), Near-term Intensification of the Hydrological Cycle in the United States, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [37] Dullo, T., A. Kalyanapu, S. K. Ghafoor, R. Marshall, K. Tindall, V. Anantharaj, S.-C. Kao, and S. Gangrade (2015), Computational Performance of an OpenMP-enabled, MPI-enabled and GPU-accelerated Two-dimensional Flood Model, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [36] Zhao, G., H. Gao, B. S. Naz, S.-C. Kao, and N. Voisin (2015), Sensitivity of Reservoir Storage and Outflow to Climate Change in a Water-limited River Basin, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [35] Pagán, B., M. Ashfaq, D. Rastogi, B. S. Naz, S.-C. Kao, R. Mei, D. Kendall, and J. S. Pal (2015), Increased Extreme Hydrological Events and Decreased Water Supply Availability for the Southwestern United States Projected by Mid-Century, American Geophysical Union 2015 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [34] Chalise, D. R., P. O'Connor, S. T. DeNeale, R. Uría Martínez, and S.-C. Kao (2015), LCOE Uncertainty Analysis for Hydropower Using Monte Carlo Simulations, HydroVision International 2015, July 14–17, Portland, OR.
- [33] Pasha, M. F. K., L. Rowan, D. Yeasmin, S.-C. Kao, and B. T. Smith (2015), Development of a Geospatial Diversion Model for Hydropower Resource Assessment, HydroVision International 2015, July 14–17, Portland, OR.
- [32] Gangrade, S., B. S. Naz, S.-C. Kao, M. Ashfaq, R. Mei, D. Rastogi, B. L. Preston, E. D. Kabela, N. Singh, and V. Anantharaj (2015), High Resolution Distributed Hydrological Modeling for Extreme Flood Events, World Environmental & Water Resources Congress 2015, May 17–21, Austin, TX.

- [31] Zhao, G., H. Gao, B. S. Naz, and S.-C. Kao (2015), Integrating Reservoir Flow Regulation Rules into a Spatially Distributed Hydrological Model, World Environmental & Water Resources Congress 2015, May 17–21, Austin, TX.
- [30] Dullo, T., A. Kalyanapu, S. K. Ghafoor, V. Anantharaj, R. Marshall, J. Tatarczuk, and S.-C. Kao (2015), Computational Performance of a Two-dimensional Flood Model in Single and Multiple GPU Frameworks, European Geosciences Union General Assembly 2015, April 12–17, Vienna, Austria.
- [29] Kao, S.-C., B. S. Naz, S. Gangrade, M. Ashfaq, R. Mei, and D. Rastogi (2014), Projection of Climate Change Impacts on Watershed Storage and Hydropower Generation, American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- [28] Naz, B. S., S.-C. Kao, M. Ashfaq, S. Gangrade, R. Mei, and D. Rastogi (2014), Climate Change Impacts on Reservoir Inflow in the United States, American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- [27] Ashfaq, M., D. Rastogi, R. Mei, S.-C. Kao, B. S. Naz, and S. Gangrade (2014), Ultra High-resolution Ensemble Projections of the Near-term Climate Change over the U.S., American Geophysical Union 2014 Fall Meeting, Dec. 14–19, San Francisco, CA.
- [26] Naz, B. S., S.-C. Kao, M. Ashfaq, R. Mei, D. Rastogi, and L. C. Bowling (2014), Historical and Future Hydrologic Change in the Conterminous United States, American Water Resources Association 2014 Annual Water Resources Conference, November 3–6, Vienna, VA.
- [25] DeNeale, S. T., Q. F. Zhang, P. W. O'Connor, and S.-C. Kao (2014), Statistical Characteristics of US Hydropower Plant Capacity Factors, HydroVision International 2014, July 22–25, Nashville, TN.
- [24] Pasha, M. F. K., M. Yang, D. Yeasmin, F. Amin, S.-C. Kao, and B. T. Smith (2014), Sensitivity of Spatial Resolution in Hydropower Resource Assessment, HydroVision International 2014, July 22–25, Nashville, TN.
- [23] Kao, S.-C., D. Rastogi, B. S. Naz, M. Ashfaq, B. L. Preston, E. D. Kabela, Rui Mei and N. Singh (2014), Towards the Development of an Integrated Energy-Water Risk Assessment Tool for Probable Maximum Precipitation and Flood, World Environmental & Water Resources Congress 2014, June 1–5, Portland, OR.
- [22] Naz, B. S., S.-C. Kao, M. Ashfaq and R. Mei (2014), Projecting the Potential Impacts of Climate Change on Water Resources for the Conterminous United States through High Resolution Hydro-meteorological Simulation, the 94th American Meteorological Society Annual Meeting, February 2–6, Atlanta, GA.
- [21] Ashfaq, M., S.-C. Kao, R. Mei, D. Touma, D. Rastogi, S. M. Absar and B. S. Naz (2014), Ultra High-resolution Near-term Hydro-meteorological Projections and Impact Assessments over the United States and South Asia, the 94th American Meteorological Society Annual Meeting, February 2–6, Atlanta, GA.
- [20] Ostro, S., D. Huber, J. H. Casola, D. P. Kaiser, T. P. Karnowski, V. C. Paquit, S.-C. Kao, J. Francis and J. Gullede (2014), Characterizing Anomalous Mid-tropospheric Ridges and Their Trends, the 94th American Meteorological Society Annual Meeting, February 2–6, Atlanta, GA.
- [19] Kao, S.-C., B. S. Naz, M. Ashfaq, and R. Mei (2013), Refining the Resolution of Future Energy-Water Projection through High Performance Computing, American Geophysical Union 2013 Fall Meeting, Dec. 9–13, San Francisco, CA.
- [18] Kao, S.-C., A. A. Oubeidillah, and M. F. K. Pasha (2013), Performance Evaluation of Monthly Streamflow Time Series Synthesized through USGS WaterWatch Runoff and NHDPlus River Network, World Environmental & Water Resources Congress 2013, May 19–23, Cincinnati, OH.
- [17] Oubeidillah, A. A., S.-C. Kao, and M. Ashfaq (2012), A Hydrologic Model Calibration Exercise for Regional Climate Change Impact Assessment of the Conterminous U.S., American Geophysical Union 2012 Fall Meeting, Dec. 3–7, San Francisco, CA.

- [16] Kao, S.-C., M. Ashfaq, M. J. Sale, A. A. Oubeidillah, and N. Diffenbaugh (2012), A Quantitative Assessment Framework for Potential Climate Change Impacts on Regional Hydropower Generation, World Environmental & Water Resources Congress 2012, May 20–24, Albuquerque, NM.
- [15] Kao, S.-C., and N.-B. Chang (2012), Multivariate Flood Frequency Analysis through Copulas in a Partially Gauged Watershed, World Environmental & Water Resources Congress 2012, May 20–24, Albuquerque, NM.
- [14] Kao, S.-C., H. K. Kim, C. Liu, X. Cui, and B. L. Bhaduri (2012), A Dependence-preserving Approach in Synthesizing Household Characteristics, Transpiration Research Board 91st Annual Meeting, July 22–26, Washington, D.C.
- [13] Sale, M. J., S.-C. Kao, R. Uría Martínez, and Y. Wei (2011), Estimating the Effects of Climate Change on Federal Hydropower and Power Marketing, HydroVision International 2011, July 19–22, Sacramento, CA.
- [12] Kao, S.-C., B. Hadjerioua, and Y. Wei (2011), Streamflow Variability and its Potential Impact on Energy Production, World Environmental & Water Resources Congress 2011, May 22–26, Palm Springs, CA.
- [11] Hadjerioua, B., S.-C. Kao, M. J. Sale, Y. Wei, H. A. Shanafield III, D. P. Kaiser, S. K. SanthanaVannan, R. Devarakonda, G. Palanisamy, and B. T. Smith (2011), National Hydropower Asset Assessment Project: An Integrated Water-Infrastructure Research Platform, World Environmental & Water Resources Congress 2011, May 22–26, Palm Springs, CA.
- [10] Kim, H. K., S.-C. Kao, C. Liu, X. Cui, and B. L. Bhaduri (2011), Reconstruction of Spatial Distribution of Travelers for Activity-Based Traffic Demand Model Using LandScan USA Data Set, the 2011 Association of American Geographers Annual Meeting, April 12–16, Seattle, WA.
- [9] Kao, S.-C., and A. R. Ganguly (2010), Quantifying and Comparing the Intensification of Extreme Rainfall Frequency from NCEP and ERA40 Reanalysis Data, the 90th American Meteorological Society Annual Meeting, January 17–21, Atlanta, GA.
- [8] Kao, S.-C., and A. R. Ganguly (2009), Intensification of Droughts in a Warming Environment: Trends, Uncertainties and Possible Impacts, American Geophysical Union 2009 Fall Meeting, Dec. 14–18, San Francisco, CA.
- [7] Kao, S.-C., A. R. Ganguly, and K. Steinhaeuser (2009), Motivating Complex Dependence Structures in Data Mining: A Case Study with Anomaly Detection in Climate, IEEE ICDM Workshop on Knowledge Discovery from Climate Data: Prediction, Extremes, and Impacts, December 6, Miami, FL (peer-reviewed).
- [6] Kao, S.-C., R. S. Govindaraju, and D. Niyogi (2009), A Spatio-Temporal Drought Analysis for the Midwestern US, World Environmental & Water Resources Congress 2009, May 18–21, Kansas City, MO.
- [5] Govindaraju, R. S., and S.-C. Kao (2008), Multivariate Precipitation Analyses Using Copulas, American Geophysical Union 2008 Joint Assembly, May 27–30, Fort Lauderdale, FL.
- [4] Kao, S.-C., and R. S. Govindaraju (2007), Constructing Design Rainfall Hyetographs Using Trivariate Plackett Family of Copulas, American Geophysical Union 2007 Fall Meeting, Dec. 10–14, San Francisco, CA.
- [3] Kao, S.-C., and R. S. Govindaraju (2007), Statistical Analysis of Extreme Rainfall Events over Indiana, USA, World Environmental & Water Resources Congress 2007, May 15–19, Tampa, FL.
- [2] Kao, S.-C., and R. S. Govindaraju (2006), Evaluating the Probabilistic Structure of Storm Surface Runoff over Indiana, USA, An International Perspective on Environmental and Water Resources, ASCE, Dec. 18–20, New Delhi, India.
- [1] Lin, G.-F., and S.-C. Kao (2001), Establishment of the Regional Design Hyetographs in Taiwan, Proceedings of the 11th Hydraulics Engineering Conference, C180–C187, in July 2001, Taipei, Taiwan.

Research Projects

Oct 2018–present	Methods for Estimating Joint Probabilities of Coincident and Correlated Flooding Mechanisms for Nuclear power Plant Flood Hazards Assessments. Sponsor: Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission. Role: Principal Investigator.
July 2018–present	Air Force / Oak Ridge National Laboratory R&D Collaboration. Sponsor: U.S. Air Force. Role: Co-investigator (Principal Investigator: K. J. Evans, ORNL).
Oct 2017–present	Effects of Climate Change on Federal Hydropower – The Third 9505 Assessment. Sponsor: Water Power Technologies Office, U.S. Department of Energy. Role: Principal Investigator.
Oct 2017–present	Application of Point Precipitation Frequency Estimates to Watersheds. Sponsor: Office of Nuclear Regulatory Research, U.S. Nuclear Regulatory Commission. Role: Principal Investigator.
Feb 2015–present	Review of Site-Specific Probable Maximum Precipitation Analyses. Sponsor: Office of New Reactors, U.S. Nuclear Regulatory Commission. Role: Co-investigator (Principal Investigators: D. B. Watson and S. T. DeNeale, ORNL).
Jul 2017–Jul 2018	Developing New Hydropower Using Existing Non-powered Dams. Sponsor: Small Business Vouchers Pilot Program, U.S. Department of Energy. Role: Principal Investigator.
Apr 2018–Sep 2018	Near Real-Time High-Resolution Gridded Weather Data System as New Force for Energy and Environmental Research. Sponsor: Climate Change Science Institute, Oak Ridge National Laboratory. Role: Co-investigator (Principal Investigator: Yaxing Wei, ORNL).
Feb 2010–Sep 2018	National Hydropower Asset Assessment Program. Sponsor: Water Power Technologies Office, U.S. Department of Energy. Role: Principal Investigator.
Oct 2013–Mar 2017	Effects of Climate Change on Federal Hydropower – The Second 9505 Assessment. Sponsor: Water Power Technologies Office, U.S. Department of Energy. Role: Principal Investigator.
Mar 2016–Sep 2016	Improve the Connection Between Earth System Models and Human Water Resources Alterations. Sponsor: Climate Change Science Institute, Oak Ridge National Laboratory. Role: Principal Investigator.
Oct 2014–Sep 2016	National Extreme Events Data and Research Center (NEED) – Transforming the National Capability for Resilience to Extreme Weather and Climate Events. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Co-investigator (Principal Investigator: D. P. Kaiser, ORNL).
Oct 2014–Sep 2016	Fine-resolution Modeling of Urban-Energy Systems' Water Footprint in River Networks. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Co-investigator (Principal Investigator: R. A. McManamay, ORNL).
Sep 2015–Mar 2016	Scoping Analytical Tools and Methods for Vulnerability Analysis of Linked Electricity Generation and River Basin Systems. Sponsor: Office of Energy Policy and Systems Analysis, U.S. Department of Energy. Role: Principal Investigator.
Oct 2013–Sep 2015	Toward the Development of an Integrated Energy-Water Risk Assessment Tool for Probable Maximum Precipitation and Flood. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Principal Investigator.

Oct 2011–Sep 2013	A Hierarchical Regional Modeling Framework for Decadal-scale Hydro-climatic Predictions and Impact Assessments. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Co-investigator (Principal Investigator: M. Ashfaq, ORNL).
Oct 2010–Sep 2012	Effects of Climate Change on Federal Hydropower – The First 9505 Assessment. Sponsor: Water Power Technologies Office, U.S. Department of Energy. Role: Principal Investigator.
Feb 2010–Jan 2011	Enhancing Climate Impact Integrated Assessment for Water through Climate Informatics. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Co- investigator (Principal Investigator: W. Christopher Lenhardt, ORNL).
Feb 2009–Jan 2010	Uncertainty Assessment and Reduction for Climate Extremes and Climate Change Impacts. Sponsor: Laboratory Directed Research and Development Program, Oak Ridge National Laboratory. Role: Co-investigator (Principal Investigator: A. R. Ganguly, ORNL).
Jan 2006–Jan 2009	The I-70 Greenfield Rest Area Wetland Projects. Sponsor: Indiana Department of Transportation. Role: Participant (Principal Investigator: R. S. Govindaraju, Purdue University).
Aug 2004–Jul 2005	Statistical Analysis of Indiana Rainfall Data. Sponsor: Indiana Department of Transportation. Role: Participant (Principal Investigator: A. R. Rao, Purdue University).

Service

Reviewer – Scientific and Engineering Journals

- *Advances in Water Resources*
- *British Journal of Environmental and Climate Change*
- *Climate Change*
- *Geophysical Research Letters*
- *Hydrological Processes*
- *Hydrological Sciences Journal*
- *Hydrology and Earth System Sciences Discussions*
- *International Journal of Climatology*
- *Irrigation and Drainage*
- *Journal of Computing in Civil Engineering*
- *Journal of Geophysical Research*
- *Journal of Earth System Science*
- *Journal of Hydrologic Engineering*
- *Journal of Hydrology*
- *Journal of Hydrometeorology*
- *Journal of the American Water Resources Association*
- *Meteorological Applications*
- *Natural Hazards*
- *Physics and Chemistry of the Earth*
- *Scientia Agricola*
- *Scientific Reports (Nature)*
- *Stochastic Environmental Research and Risk Assessment*
- *Theoretical and Applied Climatology*
- *Water Resources Research*

Reviewer – Proposals

- *National Science Foundation*
- *U.S. Dept. of Agriculture Small Business Innovation Research Program*
- *Louisiana Board of Regents*
- *CEATI International*

Student Advising and Mentorship Activities

- Ph.D. Advisor
 - Sudershan Gangrade, University of Tennessee, The Bredesen Center for Interdisciplinary Research and Graduate Education, 2017–present
- Ph.D. Committee
 - Ehsan Beigi, Louisiana State University, Department of Civil and Environmental Engineering, 2013–2015
- Post-doctoral Research Associate
 - Dr. Goutam Konapala, Oak Ridge National Laboratory, 2018–present
 - Dr. Bibi S. Naz, Oak Ridge National Laboratory, 2013–2016
 - Dr. Abdoul Oubeidillah, Oak Ridge National Laboratory, 2011–2012
- Student Interns
 - Manqing Shao, Texas A&M University, 2018
 - Tigstu Dullo, Tennessee Technological University, 2015
 - Gang Zhao, Texas A&M University, 2014–2015
 - Brenna Elrod, University of Tennessee, Knoxville, 2013
 - Clement Oigbokie II, University of Tennessee, Knoxville, 2012–2013
 - Angela Pelle, University of Tennessee, Knoxville, 2012

Technical Association and Committee Services

- U.S. Federal Climate Change and Water Working Group (<http://www.ccawwg.us/>)
- International Commission on Statistical Hydrology, International Association of Hydrological Sciences
- “Hydroclimate” Technical Committee, Environmental and Water Resources Institute, American Society of Civil Engineers
- "Use of Atmospheric Numerical Models for Estimating Probable Maximum Precipitation" Task Committee, Environmental and Water Resources Institute, American Society of Civil Engineers
- Board member, Chinese American Water Resources Association, May 2016 – present

Conference/Workshop Organizing

- Convener – “H100. Recent Advance in Large Scale, High Resolution Hydrologic and Flood Modeling for Intensified Extreme Events in a Changing Environment” and “H116. Statistical Characterization and Probabilistic Modeling of Precipitation Variability and Extremes Across Multiple Scales”, American Geophysical Union 2018 Fall Meeting
- Session Organizer – “Modeling Energy-Water Systems in a Changing Climate” in the Hydro-Climate Symposium of World Environmental and Water Resources Congress, 2015 – 2017
- Program Committee – 2010 IEEE ICDM International Workshop on Spatial and Spatiotemporal Data Mining, December 14, Sydney, Australia.
- Program Committee – 2010 IEEE ICDM Workshop on Knowledge Discovery from Climate Data: Prediction, Extremes, and Impacts, December 14, Sydney, Australia.

- Scientific Committee – 2010 IAHS-STAHY International Workshop on Advances in Statistical Hydrology, May 23-25, Taormina, Italy.
- Program Committee – 2009 IEEE ICDM Workshop on Knowledge Discovery from Climate Data: Prediction, Extremes, and Impacts, December 6, Miami, FL.