

Daniel B. Wright, Ph.D.

Arno Lenz Memorial Associate Professor of Water Resources Engineering
Civil and Environmental Engineering, University of Wisconsin-Madison

UW-Madison Affiliations: Department of Atmospheric and Oceanic Sciences; Nelson Institute for Environmental Studies; Center for Climatic Research; Freshwater and Marine Sciences

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Education:

Princeton University, Princeton, New Jersey

- PhD in Civil and Environmental Engineering (2009-2013)
Supervisor: Prof. James A. Smith
Dissertation: Observation-Driven Understanding and Prediction of Urban Flood Hazard

University of Michigan, Ann Arbor, Michigan

- MSE in Civil Engineering (2005)
Supervisor: Prof. Avery H. Demond
 - BSE in Civil and Environmental Engineering (2001-2005)
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Research and Professional Employment:

- Associate Professor, Civil and Environmental Engineering, University of Wisconsin-Madison, Madison, Wisconsin (2022-)
 - Visiting Scientist, Office of Water Prediction, National Oceanic and Atmospheric Administration (2022-2023)
 - Assistant Professor, Civil and Environmental Engineering, University of Wisconsin-Madison, Madison, Wisconsin (2016-2022)
 - NASA Postdoctoral Program Fellow, Hydrological Sciences Laboratory, NASA Goddard Space Flight Center, Greenbelt, Maryland (2014-2016)
 - Disaster Risk Management Analyst, Latin America and Caribbean Regional Disaster Risk Management and Urban Unit, The World Bank, Washington, D.C. (2013-2014)
 - Graduate Student Researcher and Teaching Assistant, Hydrometeorology Research Group, Civil and Environmental Engineering, Princeton University, Princeton, New Jersey (2009-2013)
 - Water Resources Engineer, JMS Ingenieros Consultores, San Pedro de La Paz, Chile (2008-2009)
 - Regional Sanitation Engineer, The Peace Corps, Monteagudo, Bolivia (2006-2008)
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Awards and Honors:

- Vilas Faculty Early-Career Investigator Award, University of Wisconsin-Madison, 2023.
 - Early Career Award (for contributions to rainfall and flood frequency analysis), Natural Hazards Section, American Geophysical Union, 2021
 - Science and Technology Project of the Year (for project *Development of a Web-based Stochastic Storm Transposition Toolkit for Physically-based Rainfall and Flood Hazard Analysis*), U.S. Bureau of Reclamation, 2020
 - Exceptional Service Award (for outreach efforts to improve infrastructure resilience), University of Wisconsin-Madison, 2020
 - Funded CAREER proposal, Hydrological Sciences Division, National Science Foundation, 2018
 - NASA Postdoctoral Program Fellowship Award, 2014
 - Editors' Citation for Excellence in Refereeing, *Earth's Future*, 2021
 - Outstanding Reviewer, *Journal of Hydrologic Engineering*, 2014; 2015
 - Computational Hydraulics International University Grant Program Award, 2012
 - Chi Epsilon Civil Engineering Honor Society, University of Michigan Chapter, 2003
 - University of Michigan Dean's List 2002-2005 and Cum Laude graduate
 - Eagle Scout with Bronze Palm, Boy Scouts of America, 1998
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Service:

- Co-chair, Hydrology Working Group, NASA Precipitation Measurement Mission (2023-)

- Member, NASA Precipitation Measurement Mission Science Team (2016-present)
- Member, Science Council, UW-Madison Center for Climate Research (2022-)
- Author, Water Chapter, Fifth National Climate Assessment (2021-2023)
- Associate Editor, Journal of Hydrologic Engineering (2019-2023)
- Member, Science Advisory Board, Wisconsin Initiative on Climate Change Impacts (2019-)
- Co-Chair, Infrastructure Working Group, Wisconsin Initiative on Climate Change Impacts (2019-)
- Faculty Advisor, University of Wisconsin-Madison Chapter of Engineers Without Borders (2019-2022)
- Panelist and writer, Resilience Position Statement panel, American Geophysical Union (2021-2022)
- Chair, Early Career/Student Committee, Natural Hazards Section, American Geophysical Union (2019-2020)
- Secretary, Natural Hazards Section, American Geophysical Union (2017-2018)
- Member, WCIP-ACWI Subcommittee on Hydrology, Extreme Storm Events Work Group (2016-present)
- Blue Ribbon Panel Member and Reviewer for Radar Rainfall Data Estimation and Use published by the Surface Water Hydrology Technical Committee of ASCE EWRI (2018)
- Member, Early Career Scientists Committee, Natural Hazards Focus Group, American Geophysical Union (2015-2016)
- Proposal review panelist for NSF, DHS, NASA, NOAA, DOE
- Session Co-chair, Monitoring, Prediction, American Geophysical Union Fall Meeting, 2015-2018
- Co-organizer, Outstanding Student Paper Awards, Natural Hazards Focus Group, American Geophysical Union Fall Meeting, 2015
- Technical Mentor—Peru Project, Princeton University Engineers Without Borders, 2009-2015
- Executive Board Member and founding member, University of Michigan BLUELab, 2004-2005
- Peer reviewer for Earth's Future, Science Advances, Geophysical Research Letters, Bulletin of the American Meteorological Society, Journal of Climate, Water Resources Research, Journal of Hydrology, Environmental Modeling and Software, Journal of Geophysical Research: Atmospheres, Journal of Hydrometeorology, Hydrologic and Earth Systems Science, IEEE Transactions on Geoscience and Remote Sensing, Atmospheric Research, Journal of Hydrologic Engineering, Advances in Water Resources, Hydrological Processes, Journal of the American Water Resources Association, Hydrological Sciences Journal, AGU Books, Scientific Data

Mentoring:

- Doctoral supervisor for Christopher Bosma (2016-2021), Guo Yu (2017-2021), Yihan Li (2017-2022), Samantha Hartke (2017-2022), Camila Abe (2019-2021), Aaron Alexander (2020-), Yuan Liu (2021-), Yichen Tao (2022-), Benjamin FitzGerald (2022-), Kaidi Peng (2022-), Mohammad Hussain (2023-)
- Master's supervisor for Alexandra Sampson (2016-2017), Samantha Hartke (2017-2019), Dylan Miller (2018-2019), Kevin Banas (2018-2019), Sophie Van Alsborg (2023-)
- Postdoctoral supervisor for Dr. Zhe Li (2018-2021), Dr. Davide Zoccatelli (2021-2022), Dr. Mohammed Abbasian (2022-), Dr. Ankita Pradhan (2022-)
- Research Scientist supervisor for Dr. Yagmur Derin (2023-)
- Undergraduate Research Supervision for Allison Lobue (2016-2018), Cassia Smith (2017), Patrick Byrne (2018-2019), Devin Welch (2018-2019), Joshua Marineau (2019), Madeline Fontaine (2019), Ryan Williams (2019), Ana Diges (2020-2021), Alex Yost (2020-2021), Jordan Bovee (2020-2021)

Teaching:

- CEE311: Hydrosience; CEE716: Statistical Modeling of Hydrologic Systems; CEE415: Hydrology; CEE619: Special Topics in Hydrology—Seminal Papers in Flood Hydrology (through CUAHSI Virtual University)
- Assistant Mentor for American Society of Civil Engineers Excellence in Civil Engineering Education Teaching Workshop, University of Nebraska, Omaha, NE, June 2019.
- Teaching Fellow, American Society of Civil Engineers Excellence in Civil Engineering Education Teaching Workshop, Florida Gulf Coast University, Fort Myers, FL, June 2017.

Funded Research Proposals:

- *Assessing Spatial Rainfall Volume-Duration-Frequency and its Trends in the Great Lakes Water Authority Service Area*, Great Lakes Water Authority, PI (no other investigators). Award term: 2023-2026. Award to UW-Madison: \$347,000.
- *RainyDay+Nextgen: Process-Based Flood Frequency Analysis using the NextGen Water Modeling Framework*, NOAA National Water Center Interagency Personnel Act agreement, PI (no other investigators). Award term: 2022-2023. Award to UW-Madison: \$80,000.
- *A Unified Gridded Precipitation Data Archive and Processing Tools for Analysis of Upper Tail Rainfall and Flood Extremes*, Wisconsin Alumni Research Foundation. PI (no other investigators). Award term: 2023-2024. Award to UW-Madison: \$47,000.
- *Spatiotemporal analysis of extreme event characteristics using S2S forecasts to inform hydrometeorological hazard assessment*, NASA Subseasonal-to-Seasonal Hydrometeorological Prediction, Co-PI (other investigators: Dr. Emberson, Stanley, Kirschbaum, Andrews). Award Term: 2022-2024. Award to UW-Madison: \$150,000.
- *The Combined Effects of Seasonal Climate and Extreme Precipitation on Flood Hazard in the Midwest*, USGS Midwest Climate Adaptation Center, Co-PI (other investigators: Dr. Vimont, S. Vavrus, M. Notaro). Award Term: 2022-2024. Award to UW-Madison: \$400,000.
- *Characterizing the Co-Benefits of Urban Greening in Coastal Cities: Reducing Runoff, Extreme Heat, and Heavy Rainfall*, Milwaukee Metropolitan Sewerage District, PI (other investigators: S. Loheide). Award term: 2022-2024. Award to UW-Madison: \$57,000.
- *Global Multiscale Uncertainty Estimation for Satellite Precipitation Products to Improve Hydrologic Prediction*, NASA Precipitation Measurement Mission. PI (other investigators: J. Tan). Award term: 2022-2025. Total award: \$428,000. Award to UW-Madison: \$414,000.
- *Collaborative Research: Understanding Urban Resilience to Pluvial Floods Using Reduced-Order Modeling*, National Science Foundation/NIST. PI (other investigators: V. Ivanov). Award term: 2022-2024. Award to UW-Madison: \$150,000.
- *Predicting Future Climate Change Impacts on Flood Frequency in Complex Watersheds using Stochastic Storm Transposition and Process-Driven Modeling*, US Bureau of Reclamation Dam Safety Office. PI (other investigators: A. Stone). Award term: 2021-2024. Award to UW-Madison: \$349,000.
- *Surface Transportation Resilience; Surface Transportation, Sea Level Rise, and Coastal Storms: A Sustainable Path to Increased Resilience*, NOAA Effects of Sea Level Rise. Co-PI (6 other investigators). Award term: 2021-2026. Award to UW-Madison: \$180,000.
- *Collaborative Research: Adverse Multiphase Flow Interactions in Urban Stormwater Systems*, National Science Foundation, PI (other investigators: J. Vasconcelos, B. Hodges). Award term: 2021-2024. Award to UW-Madison: \$281,000.
- *Process-Based Prediction of Present and Future Flood Conditions across the United States*, USGS National Institutes of Water Resources. PI (4 USGS investigators). Award term: 2021-2024. Award to UW-Madison: \$479,800.
- *CAREER: A Dynamic-Stochastic Approach to Rainfall and Flood Frequency Analysis Across Scales*, National Science Foundation. PI (no other investigators). Award term: 2018-2023. Award to UW-Madison: \$507,000.
- *Characterizing and Communicating Global IMERG Error Estimates for End User Applications*, NASA Precipitation Measurement Mission. Co-PI (other investigators: D. Kirschbaum). Award term: 2019-2022. Total award: \$449,700. Award to UW-Madison: \$242,000.
- *Development of a Web-based Stochastic Storm Transposition Toolkit for Physically-based Rainfall and Flood Hazard Analysis*, U.S. Bureau of Reclamation Office of Science and Technology. Co-PI (other investigators: K. Holman). Award term: 2016-2019. Total award: \$253,600. Award to UW-Madison: \$226,300.
- *A Regional Analysis Framework for Evaluating Satellite Rainfall Extremes in Complex Terrain for Landslide Hazards Applications*, NASA Precipitation Measurement Program. Co-PI (other investigators: D. Kirschbaum). Award term: 2016-2019. Total award: \$345,700. Award to UW-Madison: \$171,000.
- *CoPe EAGER: Collaborative Research: A GeoAI Data-Fusion Framework for Real-Time Assessment of Flood Damage and Transportation Resilience by Integrating Complex Sensor Datasets*, The National Science Foundation. Co-PI (other investigators: Q Huang, S. Gao, N. Fang, Y. Qiang). Award term: 2019-

2021. Award to UW-Madison: \$163,000.

- *Mitigating Flooding, Extreme Heat, and Heavy Rainfall in Urban Coastal Communities by Greening*, Wisconsin Sea Grant. Co-PI (other investigators: S. Loheide). Award term: 2020-2022. Award to UW-Madison: \$240,000.
- *The Wisconsin Rainfall Project: Enhancing Infrastructure Resiliency to Extreme Rainfall in Wisconsin and Beyond*, Baldwin Wisconsin Idea Endowment. PI (other investigators: D. Lorenz; R. Montgomery). Award term: 2020-2022. Award to UW-Madison: \$50,000, plus \$5,000 contribution from City of Madison, WI.
- *Updating Present and Future Rainfall Statistics for Resilient Infrastructure Design, Management, and Planning*, Wisconsin Department of Natural Resources. PI (other investigators: D. Lorenz). Award term: 2020-2021. Award to UW-Madison: \$47,000.
- *Dynamic-Stochastic Modeling of the Time Evolution of Flood Hazard due to Tropical Cyclones*, Wisconsin Alumni Research Foundation. PI (no other investigators). Award term: 2020-2021. Award to UW-Madison: \$42,000.
- *Probing the Connections Between Tropical Cyclones, Land Use, River Channels, and Floods*, Wisconsin Alumni Research Foundation. PI (no other investigators). Award term: 2019-2020. Award to UW-Madison: \$39,000.
- *Characterizing and Modeling Tropical Cyclone Rainfall Hazards using the Extreme Rainfall Multiplier*, Climate, People and the Environment Seed Grant. PI (no other investigators). Award term: 2019-2020. Award to UW-Madison: \$10,000.
- *Using stochastic storm transposition to update rainfall intensity-duration-frequency (IDF) curves for the Coon Creek and West Fork Kickapoo Watersheds*, Natural Resources Conservation Service. PI (other investigators: E. Booth). Award term: 2020. Award to UW-Madison: \$10,000.
- *A Toolkit for High-Resolution Rainfall and Flood Frequency Analysis using Stochastic Storm Transposition and IMERG Satellite Precipitation*, NASA Postdoctoral Fellowship Program. Award term: 2014-2016.

Peer-Reviewed Publications, in Review (advised students/postdocs in bold):

- **Peng, K.**, D.B. Wright, Y. Derin, S.H. Hartke, Z. Li, J. Tan, A Novel Near-Realtime Quasi-global Satellite-Only Ensemble Precipitation Dataset, in review, *Water Resources Research*.
- **Alexander, G.A.**, C.B. Voter, D.B. Wright, S.P. Loheide, Urban Ecohydrology: Resolving Sub-Grid Lateral Water and Energy Transfers in a Land Surface Model, in revision, *Water Resources Research*.
- Post, R, F. Quintero, W.F. Krajewski, D.B. Wright, Investigating Storage Utilization of Activated Distributed Storage Network for Peak Flow Reduction using Stochastic Storm Transposition, in revision, *J. Hydrologic Engineering*.
- **Zoccatelli, D.**, D.B. Wright, J.T. White, M.N. Fienen, G. Yu, Precipitation Uncertainty Estimation and Rainfall-runoff Model Calibration using Iterative Ensemble Smoothers, in revision, *Advances in Water Resources*.

Peer-Reviewed Publications, Published or Accepted (advised students/postdocs in bold):

1. Vasconcelos, J.G., V. Geller, C. Triboni, D.B. Wright, B.R. Hodges, Evolution and Characterization of Pressurized Flow Conditions in Stormwater Collection Networks, accepted, *J. Hydraulic Engineering*.
2. Yu, G., T. Liu, L.A. McGuire, D.B. Wright, B.J. Hatchett, J.J. Miller, M. Berli, J. Giovando, M. Bartles, Process-based Quantification of the Role of Wildfire in Shaping Flood Frequency, *Water Resources Research*, 2023.
3. **Yu, G.**, Y. Feng, J. Wang, D.B. Wright, Performance of Fire Danger Indices and Their Utility in Predicting Future Wildfire Danger over the Conterminous United States, *Earth's Future*, 2023.
4. Yu, G., B.J. Hatchett, J.J. Miller, M. Berli, D.B. Wright, J.F. Mejia, Seasonal Storm Characteristics Govern Urban Flash Flood Climatology in Arid Regions, *J. Hydrometeorology*, 2023.
5. Alexander, S.O., M. Calice, D. Scheufele, D. Brossard, N. Krause, D.B. Wright, P. Block, The impact of extreme precipitation events and their variability on climate change beliefs, *Weather, Climate, and Society*, 2023.
6. Mascaro, G., S.M. Papalexiou, D.B. Wright, Advancing Characterization and Modeling of Space-Time Correlation Structure and Marginal Distribution of Short-Duration Precipitation, *Advances in Water Resources*, 2023.

7. Zhuang, Q., Z. Zhou, S. Liu, D.B. Wright, L. Gao, The evaluation and downscaling-calibration of IMERG precipitation products at sub-daily scales over a metropolitan region, *J. Flood Risk Management*, 2023.
8. Yu, G., J.J. Miller, B.J. Hatchett, M. Berli, D.B. Wright, C. McDougall, Z. Zhu, The Nonstationary Flood Hydrology of an Urbanizing Arid Watershed, *J. Hydrometeorology*, 2023.
9. **Li, Z.**, D.B. Wright, **S.H. Hartke**, D.B. Kirschbaum, S. Khan, V. Maggioni, Pierre-Emmanuel Kirstetter, Toward A Globally-Applicable Uncertainty Quantification Framework for Satellite Multisensor Precipitation Products based on GPM DPR, *IEEE Transactions on Geoscience Remote Sensing*, 2023.
10. **Hartke, S.**, D.B. Wright, F. Quintero, A.S. Falck, Incorporating IMERG Satellite Precipitation Uncertainty into Seasonal and Peak Streamflow Predictions using the Hillslope Link Hydrological Model, *J. Hydrology*, 2023.
11. **Andersen, C.B.**, D.B. Wright, and S. Thorndahl, Sub-Hourly to Daily Rainfall Intensity-Duration-Frequency Estimation Using Stochastic Storm Transposition and Discontinuous Radar Data, *Water*, 2022.
12. **Hartke, S.H.**, and D.B. Wright, Where Can IMERG Provide a Better Precipitation Estimate than Interpolated Gauge Data?, *Remote Sensing*, 2022.
13. Zhuang, Q., Z. Zhou, S. Liu, D.B. Wright, Bivariate Rainfall Frequency Analysis in an Urban Watershed: Combining Copula Theory with Stochastic Storm Transposition, *J. Hydrology*, 2022.
14. **Li, Y.**, D.B. Wright, and B.P. Bledsoe, Watershed Controls and Tropical Cyclone-Induced Changes in River Hydraulic Geometry in Puerto Rico, *J. Hydrology: Regional Studies*, 2022.
15. **Liu, Y.**, D.B. Wright, A Storm-centered Multivariate Modeling of Extreme Precipitation Frequency Based on Atmospheric Water Balance, *Hydrologic and Earth Systems Science*, 2022.
16. **Hartke, S.H.**, D.B. Wright, **Li, Z.**, Maggioni, V., Kirschbaum, D., Khan, S., Ensemble Representation of Satellite Precipitation Uncertainty using an Uncalibrated, Nonstationary, Anisotropic Autocorrelation Model, *Water Resources Research*, 2022.
17. **Li, Y.**, D.B. Wright, and **Y. Liu**, Flood-Induced Geomorphic Change of Floodplain Extent and Depth: A Case Study of Hurricane Maria in Puerto Rico, *J. Hydrologic Engineering*, 2022.
18. **Yu, G.**, D.B. Wright, F.V. Davenport, Diverse Physical Processes Drive Upper-Tail Flood Quantiles in the US Mountain West, *Geophysical Research Letters*, 2022.
19. Mishra, A., et al., An overview of flood concepts, challenges, and future directions, *J. Hydrologic Engineering*, 2022.
20. Ivanov, V. Y., D. Xu, M.C. Delle, K. Sargsyan, D.B. Wright, N. Katopodes, et al. Breaking down the computational barriers to real-time urban flood forecasting. *Geophysical Research Letters*, 2021.
21. Zhou, Z., J.A. Smith, M.L. Baek, D.B. Wright, B.K. Smith, S. Liu, The impact of spatiotemporal structure of rainfall on flood frequency over a small urban watershed: an approach coupling stochastic storm transposition and hydrologic modeling, *Hydrologic and Earth Systems Science*, 2021.
22. Alizadeh, B., A.G. Bafti, H. Kamangir, Y. Zhang, D.B. Wright, K.J. Franz, A novel attention-based LSTM cell post-processor coupled with bayesian optimization for streamflow prediction, *J. Hydrology*, 2021.
23. Perez Mesa, G., J. Gomez-Velez, R. Mantilla, D. B. Wright, **Z. Li**, The Effect of Storm Direction on Flood Frequency Analysis Using Physically-Based Streamflow Simulations, *Geophysical Res. Letters*, 2021.
24. **Yu, G.**, D.B. Wright, K.D. Holman, Connecting Hydrometeorological Processes to Low-Probability Floods in the Mountainous Colorado Front Range, *Water Resources Research*, 2021.
25. Wright, D.B., C. Samaras, T. Lopez-Cantu, Resilience to Extreme Rainfall Starts with Science, *Bulletin of the American Meteorological Society*, 2021.
26. Peng, B., Q. Huang, J. Vongkusolkiet, S. Gao, D.B. Wright, Z.N. Fang, Y. Qiang, Urban Flood Mapping with Bi-temporal Multispectral Imagery via a Self-supervised Learning Framework, *IEEE J. Selected Topics in Applied Earth Observations and Remote Sensing*, 2021.
27. Butterworth B., et al., Connecting Land-Atmosphere Interactions to Surface Heterogeneity in CHEESEHEAD19, *Bulletin of the American Meteorological Society*, 2020.
28. **Li, Z.**, D.B. Wright, S.Q. Zhang, D.B. Kirschbaum, **S.H. Hartke**, Object-Based Comparison of Data-Driven and Physics-Driven Satellite Estimates of Extreme Rainfall, *J. Hydrometeorology*, 2020.
29. **Li, Y.**, Wright, D.B., **Byrne, P.L.**, The Influence of Tropical Cyclones on the Evolution of River Conveyance Capacity in Puerto Rico, *Water Resources Research*, 2020.
30. **Yu, G.**, D.B. Wright, **Z. Li**, The Upper Tail of Precipitation in Convection-Permitting Regional Climate Models and Their Utility in Nonstationary Rainfall and Flood Frequency Analysis, *Earth's Future*, 2020.

31. **Hartke, S.H.**, D.B. Wright, D.B. Kirschbaum, T.A. Stanley, **Z. Li**, Incorporation of Satellite Precipitation Uncertainty in a Landslide Hazard Nowcasting System, *J. Hydrometeorology*, 2020.
32. Wright, D.B., **G. Yu**, J.F. England, Six Decades of Rainfall and Flood Frequency Analysis Using Stochastic Storm Transposition: Review, Progress, and Prospects, *J. Hydrology*, 2020.
33. **Sampson, A.**, D.B. Wright, **A. LoBue**, R.D. Stewart, The Role of Rainfall Temporal and Spatial Averaging in Seasonal Simulations of the Terrestrial Water Balance, *Hydrologic Processes*, 2020.
34. Dematatis, M., A. Plechacek, M. Mathews, M. Gotkowitz, F. Udenby, D.B. Wright, M. Ginder-Vogel, Spatial and temporal variability of radium in the Midwestern Cambrian-Ordovician aquifer system in Wisconsin, *AWWA Water Science*, 2020.
35. **Bosma, C.D.**, D.B. Wright, P. Nguyen, J.P. Kossin, D.C. Herndon, J.M. Shepherd, An intuitive metric to quantify and communicate tropical cyclone rainfall hazard, *Bulletin of the American Meteorological Society* 2020.
36. Perez Mesa, G., R. Mantilla, W.F. Krajewski, D.B. Wright, Using Physically-Based Streamflow Simulations to Assess Local and Regional Flood Frequency Analysis Methods, *Water Resources Research*, 2019.
37. Wright, D.B., **C.D. Bosma**, T. Lopez-Cantu, U.S. hydrologic design standards insufficient due to large increases in frequency of rainfall extremes, *Geophysical Research Letters*, 2019.
38. Cristiano, E., Veldhuis, M.-C., Wright, D. B., Smith, J. A., & Giesen, N., The influence of rainfall and catchment critical scales on urban hydrological response sensitivity. *Water Resources Research*, 2019.
39. **Yu, G.**, D.B. Wright, **Z. Zhu**, **C. Smith**, K. Holman, Process-based flood frequency analysis in an agricultural watershed exhibiting nonstationary flood seasonality, *Hydrol. and Earth Sys. Science*, 2019.
40. Zhou, Z., Smith, J. A., Wright, D. B., Baek, M. L., Yang, L., & Liu, S., Storm catalog-based analysis of rainfall heterogeneity and frequency in a complex terrain, *Water Resources Research*, 2019.
41. Wright, D.B., K. Holman, Rescaling Transposed Extreme Rainfall Within a Heterogeneous Region, *J. Hydrologic Engineering*, 2019.
42. **Zhu, Z.**, Wright, D. B., & **Yu, G.**, The impact of rainfall space-time structure in flood frequency analysis. *Water Resources Research*, 2018.
43. Wright, D. B., Rainfall Information for Global Flood Modeling. In *Global Flood Hazard* (eds G. J. Schumann, P. D. Bates, H. Apel and G. T. Aronica), 2018 (Winner of 2019 American Association of Publishers *Best Book in Earth Science PROSE* award).
44. Wright, D.B., D.B. Kirschbaum, S. Yatheendradas, Satellite Precipitation Characterization, Error Modeling, and Error Correction Using Censored Shifted Gamma Distributions, *J. Hydrometeorology* 2017.
45. Wright, D.B., R. Mantilla, and C.D. Peters-Lidard. A remote sensing-based tool for assessing rainfall-driven hazards, *Environmental Modelling & Software*, 2017.
46. Lee, H., D.E. Waliser, R. Ferraro, T. Iguchi, C.D. Peters-Lidard, B. Tian, P.C. Loikith, D.B. Wright, Evaluating hourly rainfall characteristics over the US Great Plains in dynamically downscaled climate model simulations using NASA-Unified WRF, *J. Geophys. Res. Atmos.*, 2017.
47. Ayalew, T.B., W.F. Krajewski, R. Mantilla, D.B. Wright, S. Small. Effect of Spatially Distributed Small Dams on Flood Frequency: Insights from the Soap Creek Watershed, *Journal of Hydrologic Engineering*, 2017.
48. Wright, D.B., T.R. Knutson, J.A. Smith. Regional Climate Model Projections of Rainfall from U.S. Landfalling Tropical Cyclones, *Climate Dynamics*, 2015.
49. Wright, D.B., J.A. Smith, M.L. Baek. Flood Frequency Analysis Using Radar Rainfall Fields and Stochastic Storm Transposition, *Water Resources Research*, 2014.
50. Wright, D.B., J.A. Smith, G. Villarini, M.L. Baek. Long-term high-resolution radar rainfall fields for urban hydrology, *Journal of the American Water Resources Association*, 2014.
51. Wright, D.B., J.A. Smith, M.L. Baek, Critical examination of area reduction factors, *J. Hydrologic Engineering*, 2014.
52. Wright, D.B., J.A. Smith, G. Villarini, M.L. Baek. Estimating the frequency of extreme rainfall using weather radar and stochastic storm transposition, *J. Hydrology*, 2013.
53. Smith, J.A., M.L. Baek, G. Villarini, D.B. Wright, W.F. Krajewski. Extreme Flood Response: The June 2008 Flooding in Iowa, *J. Hydrometeorology*, 2013.
54. Yang, L., J.A. Smith, D.B. Wright, M.L. Baek, G. Villarini, F. Tian, H. Hu. Urbanization and Climate Change: An Examination of Nonstationarities in Urban Flooding, *J. Hydrometeorology*, 2013.
55. Smith, B.K, J.A. Smith, M.L. Baek, G. Villarini, D.B. Wright, The Spectrum of Storm Event Hydrologic Response in Urban Watersheds, *Water Resources Research*, 2013.

56. Wright, D.B., J. A. Smith, G. Villarini, M. L. Baeck, Applications of Radar-Based Rainfall Estimates for Urban Flood Studies, *Stormwater and Urban Water Systems Modeling, Monograph 21* (Ed. W. James), Computational Hydraulics International, Guelph, ON Canada, 2013.
57. Wright, D.B., J.A. Smith, G. Villarini, M.L. Baeck. The hydroclimatology of flash flooding in Atlanta, *Water Resources Research*, 2012.
58. Wright, D.B. and J.M. Schwenk, Aplicación de HEC-RAS 4.0 en el Cálculo del Comportamiento Hidráulico en Mini- y Pequeñas Centrales Hidroeléctricas, *Energía y Desarrollo*, 2010.
59. Towey, T., S.-C. Chang, A. Demond, D.B. Wright, N. Barabas, A. Franzblau, D. Garabrant, B. Gillespie, J. Lepkowski, W. Luksemburg, P. Adriaens, Hierarchical Cluster Analysis of Polychlorinated Dioxins and Furans in Michigan, USA, Soils: Evaluation of Industrial and Background and Congener Profiles, *Environmental Toxicology and Chemistry*, 2010.

Technical Reports:

- Holman, K.D., D.B. Wright, **G. Yu**, Stochastic Storm Transposition for Physically-Based Rainfall and Flood Frequency Analyses, Science and Technology Program Research and Development Office, U.S. Bureau of Reclamation, Denver, 92 pp., 2020.
- Wright, D.B., Methods in Flood Hazard and Risk Assessment, Technical Notes developed under the World Bank LCR Probabilistic Risk Assessment Program (CAPRA), The World Bank, 2016.
- Wright, D.B., C.L. Linero, M.C. Rogelis. The 24 December 2013 Christmas Eve Storm in Saint Lucia: Hydrometeorological and Geotechnical Perspectives, Latin America and the Caribbean Regional Disaster Risk Management and Urban Development Unit, The World Bank, 2014.
- Government of Saint Lucia and the World Bank, Saint Lucia Joint Rapid Damage and Needs Assessment: Flood Event of December 24–25, 2013, World Bank Group, 66 pp. 2014.

Popular Media Contributions or Appearances:

- Zhong, Raymond, Intensifying Rains Pose Hidden Flood Risks Across the U.S., *New York Times*, June 26, 2023.
- Caruso, D., K. Crowe, S. Lackmeyer, Live near a dam? It could be crumbling, threatening homes and lives as heavy rains increase, *USA Today*, November 16, 2022.
- Crowe, K., C. Amico, More than 200 U.S. dams have failed in rain storms since 2000. See if your community is at risk, *USA Today*, November 16, 2022.
- Sommer, L., An unexpected item is blocking cities' climate change prep: obsolete rainfall records, *National Public Radio*, February 9, 2022.
- Pulver, D. and K. Crowe, How a summer of extreme weather reveals a stunning shift in the way rain falls in America, *USA Today*, November 30, 2021.
- Pulver, D., K.Crowe, R. Padilla, M. Thorson, S. Beard, K. Zaiets, S. Sullivan, Our warming climate is having a dramatic impact on precipitation. What does the data tell us about your state?, *USA Today*, November 30, 2021.
- Morrison, J., As rainstorms grow more severe and frequent, communities fail to prepare for risks, *The Washington Post*, April 9, 2021.
- Wright, D.B., The Future of Wisconsin's Infrastructure Amid Historic Flooding, interview, *Wisconsin Public Radio*, November 1, 2019.
- Wright, D.B., Risks to the Yahara Watershed in Light of Dane County's August Flooding, interview, *Wisconsin Public Radio*, October 10, 2018.
- Wright, D.B., What Could Happen the Next Time Madison Gets Hit By Extreme Rainfall, *WisContext*, October, 2018.
- Wright, D.B., Shelter from the Storm: Urban Floods in Latin América, *Foreign Affairs Latinoamérica Sección ü*, June 2013.

Selected Keynotes, Invited Presentations, and Seminars (advised students/postdocs in bold):

- **Alexander, G. A.**, C. B. Voter, S. P. Loheide II, D. B. Wright. Developing New Mosaic and Urban Sub-Grid Heterogeneity Modules for Noah-MP , National Center for Atmospheric Research Noah-MP Monthly Telecon, Boulder, CO, September 27, 2023.

- Wright, D.B., The Spacetime Variability of Flood Frequency in a Warming Climate, 1st Global Flood Crosscutting Project Workshop, Global Energy and Water cycle Exchanges, September 22, 2023.
- Wright, D.B., What's the deal with First Street Foundation's extreme rainfall data?, Association of State Floodplain Managers Climate Change Taskforce, July 21, 2023 (virtual).
- Wright, D.B., Process-Driven Prediction of Flood Frequency and its Causes, ETH Zurich, Zurich, Switzerland, May 9, 2023.
- Wright, D.B., Process-Driven Prediction of Flood Frequency and its Causes, University of Lausanne, Lausanne, Switzerland, May 3, 2023.
- Wright, D.B., How should storm catalogs of extreme rainfall events be constructed for modernized PMP analyses?, Data Requirements for Modernizing PMP Estimation, National Academies of Science, Engineering, and Medicine, April 10, 2023 (virtual).
- Montgomery, R., D.B. Wright, G. Fries, Adapting our Infrastructure to Changing Rainfall—It's Complicated, Weston Roundtable Series, University of Wisconsin-Madison, Madison, WI, December 1, 2022.
- Wright, D.B., Process-Driven Prediction of Flood Frequency and its Causes, University of Virginia Civil and Environmental Engineering, Charlottesville, VA, October 28, 2022.
- Dutton, A., T. Wagner, D.B. Wright, M. Magee, Water, Water, Everywhere, in the Air, in the Ice, in the Ground, and in the Sea: A Conversation About the Science of the Changing Global Water Cycle, Nelson Institute Earth Day panel discussion, April 21, 2022.
- Wright, D.B., A. Stone, K. Holman, A. Newman, Predicting Future Climate Change Impacts on Flood Frequency in Complex Watersheds using Stochastic Storm Transposition and Process-Driven Modeling, Centre for Energy Advancement through Technological Innovation interest group webinar, December 7, 2021 (Virtual).
- Montgomery, R., B. Wang, D.B. Wright, WICCI Infrastructure Working Group Summary of Products, American Public Works Association Wisconsin Chapter Fall Meeting, November 5, 2021 (Virtual).
- Wright, D.B., Climate Change and Rainfall IDF Statistics, American Society of Civil Engineers EWRI Leadership Weekend Keynote Webinar, October 29, 2021 (Virtual; keynote speaker).
- Wright, D.B., Climate Change, Rainfall, and River Flooding with a Midwestern Flavor, Association of State Floodplain Managers Climate Change Taskforce webinar, October 25, 2021 (Virtual).
- **Li, Z.**, D.B. Wright, **S.H. Hartke**, D.B. Kirschbaum, S. Khan, V. Maggioni, P.-E. Kirstetter, Toward A Globally-Applicable Uncertainty Quantification Framework for Satellite Multisensor Precipitation Products based on GPM DPR, Precipitation Measurement Mission Science Team Meeting, October 20, 2021 (Virtual).
- Wright, D.B., Climate Change and Rainfall IDF Statistics, Our Changing Precipitation Webinar Series, NOAA Climate Program Office, September 21, 2021 (Virtual).
- **Alexander, G.A.**, C.B. Voter, S.P. Loheide, D.B. Wright, Mitigating Extreme Rainfall Events in Coastal Communities Using Green Infrastructure, Milwaukee Metropolitan Sewerage District Lunch and Learn, June 10, 2021 (Virtual).
- Wright, D.B., Rainfall Metrics for Infrastructure Planning and Design in a Warming Climate, Iowa Stormwater Education Partnership Webinar, June 8, 2021 (Virtual).
- **Li, Z.**, D.B. Wright, **S.H. Hartke**, D.B. Kirschbaum, S. Khan, V. Maggioni, P.-E. Kirstetter, A Prototype IMERG Error Modeling Framework based on GPM DPR, NASA IMERG Precipitation Uncertainty Group, March 3, 2021 (Virtual).
- Wright, D.B., **G. Yu**, K. Holman, Estimating Flood Frequency using Stochastic Storm Transposition, Gridded Precipitation Data, and Physics-based Modeling, Nuclear Regulatory Commission Probabilistic Flood Hazard Assessment Research Workshop, February 23, 2021 (Virtual; keynote speaker).
- Wright, D.B., Process-Driven Understanding and Prediction of Extreme Floods, Earth Systems Science Seminar Series, Stanford University, February 17, 2021 (Virtual).
- Montgomery, R., M. Hart, D.B. Wright, Overview of WICCI & Infrastructure Working Group Activities, Lunch and Learn, American Public Works Association Wisconsin chapter, January 12, 2021 (Virtual).
- Wright, D.B., G. Yu, Z. Li, K. Holman, Using New Observational and Modeling Platforms to Estimate Rainfall and Flood Frequencies in a Changing World, American Meteorological Society Annual Meeting, January 11, 2021 (Virtual).

- Wright, D.B., A Paper, a PhD Dissertation, a Flood, and the Wisconsin Rainfall Project: An Early Career Example of Making Science Work for the Real World and for Yourself, American Geophysical Union Fall Meeting, December 12, 2020 (Virtual).
- Wright, D.B., The Wisconsin Rainfall Project, Quarterly Meeting, Upper Mississippi River Basin Association, October 27, 2020 (Virtual).
- Wright, D.B., Uso de modelos físicos para analizar frecuencia de crecidas fluviales, Primera Jornada de Análisis de Riesgo Hídrico del Noreste de Argentina, October 20, 2020 (Virtual; plenary speaker).
- Wright, D.B., The Wisconsin Rainfall Project, Board Meeting, Wisconsin Transportation Builders Association, October 7, 2020 (Virtual).
- Wright, D.B., Computational Science to Support Decision-Making in a Wetter Wisconsin, Geosciences Department Seminar Series, University of Wisconsin-Milwaukee, September 17, 2020 (Virtual).
- Yu, G., D.B. Wright, K. Holman, Process-based Flood Frequency Analysis (FFA) using RainyDay and WRF-Hydro, Science and Technology Webinar, Bureau of Reclamation, August 12, 2020 (Virtual).
- Wright, D.B., G. Yu, K. Holman, Overview of Stochastic Storm Transposition and RainyDay, Science and Technology Webinar, Bureau of Reclamation, August 12, 2020 (Virtual).
- Wright, D.B., Revisiting Extreme Rainfall and Flood Changes and Recurrence Intervals Using Modern Rainfall Data, Inter Fluve webinar series, Aug 4, 2020 (Virtual).
- Wright, D.B., Updating Rainfall Statistics for Infrastructure Design in a Warming Climate, Interstate Council on Water Policy webinar series, July 1, 2020 (Virtual).
- Wright, D.B., Updating Rainfall Statistics for Infrastructure Planning and Design in a Changing Climate, Wisconsin Lakes Convention, Apr 3, 2020 (Virtual).
- Wright, D.B., Planning for a Hotter, Wetter Wisconsin, Clean Lakes Alliance Yahara Lakes 101 Lake Science Café, Madison, WI, Mar 11, 2020.
- Wright, D.B., Calculating the Frequency and Severity of Extreme Rainfall and Floods Using Modern Rainfall Information, Bechtel Corporation Hydraulics and Hydrology webinar series, Mar 4, 2020 (Virtual).
- Wright, D.B., Incorporating Climate Change into Rainfall Statistics for Stormwater and Infrastructure Design, North American Stormwater and Erosion Control Association Wisconsin Section Meeting, Baraboo, WI, Feb. 6, 2020.
- Wright, D.B., The 100-year Storm: What it means and why it matters for the future of our infrastructure, Wisconsin DNR Sustainable Strategies Webinar Series, Dec 19, 2019.
- Wright, D.B., The Effects of Extreme Storm Events on Future Civil Engineering Design, Central States Water Environment Association Webinar, November 21, 2019.
- Wright, D.B., D. Kirschbaum, **Z. Li**, **S. Hartke**, T. Stanley, Characterizing and Communicating Global IMERG Error Estimates for End User Applications, NASA Precipitation Measurement Mission Science Team Meeting, Indianapolis, November 5, 2019.
- Wright, D.B., Thinking Geospatially about Extreme Rainfall and Floods, Purdue University, November 4, 2019.
- Wright, D.B., The Effects of Extreme Storm Events on Future Civil Engineering Design, American Society of Civil Engineers Wisconsin Section Annual Meeting, October 4, 2019 (keynote speaker).
- Wright, D.B., Data and Computational Advances in the Fight Against Floods, Chaos and Complex Systems Seminar, Madison, WI, September 17, 2019.
- Wright, D.B. and **C.D. Bosma**, Extreme Rainfall Multiplier: An intuitive metric to quantify and communicate tropical cyclone rainfall hazard, Nelson Institute Center for Climatic Research Climate, People, and the Environment Program seminar series, University of Wisconsin-Madison, Madison, WI, September 10, 2019.
- Wright, D.B., What's Up with All These Storms and Floods?, Wednesday Night at the Lab speaker series, Madison, WI, July 10, 2019.
- Wright, D.B., **G. Yu**, G. Perez Mesa, R. Mantilla, W.F. Krajewski, K.D. Holman, Using Flood Physics to Learn About Flood Statistics in a Changing World, 11th Extreme Value Analysis Conference, Zagreb, Croatia, July 5, 2019.
- Wright, D.B., Flood Resiliency Lessons from a Wet Hot Wisconsin Summer, Water@UW-Madison Spring Symposium, University of Wisconsin-Madison, Madison, WI, May 7, 2019.

- D.B. Wright, Generating large populations of synthetic rainfall events using remote sensing data and stochastic storm transposition, Flood Forecasting Meets Machine Learning (Google-led workshop), Tel Aviv, Israel, January 16, 2019.
- Wright, D.B., G. Yu, K. Holman, Modeling Rainfall and Flood Frequency using Stochastic Storm Transposition and Precipitation Remote Sensing, American Geophysical Union Fall Meeting, Washington, DC, December 13, 2018.
- D.B. Wright, Talking Rainfall and Floods, Environmental Chemistry and Technology seminar series, University of Wisconsin-Madison, November 30, 2018.
- D.B. Wright, Early Lessons from the August Rainfall and Flooding in Madison and Beyond, Dane County Cities' and Villages' Association, Middleton, WI, November 14, 2018.
- M. Dreischmeier, S. Hubbard, D.B. Wright, R. Washbusch, Panel Session: Geospatial Technology for Emergency Management, Planning and Mitigation, UW-Madison Geospatial Summit, November 6, 2018.
- Wright, D.B., Thinking Spatially About Climate Change and Extreme Weather, University of the Virgin Islands, St. Thomas, VI, November 2, 2018.
- Kirschbaum, D.B., D.B. Wright, S. Hartke, Z. Li, T. Stanley, A Regional Analysis Framework for Evaluating Satellite Rainfall Extremes in Complex Terrain for Landslide Hazards Applications, NASA Precipitation Measurement Mission Science Team Meeting, Phoenix, AZ, October 9-10, 2018.
- Wright, D.B., The National and Regional Geography of Extreme Storms and Floods, Water@UW-Madison Spring Symposium, University of Wisconsin-Madison, Madison, WI, May 9, 2018.
- Wright, D.B., Three Geospatial/Geotemporal Ideas on Extreme Rainfall and Floods, University of Iowa, Iowa City, IA, May 4, 2018.
- Wright, D.B., RainyDay: A Flexible Alternative For Estimating Rainfall Frequency and Severity, MSI GuaranteedWeather, Kansas City, MO, January 9, 2018.
- Wright, D.B., D.B. Kirschbaum, S. Yatheendradas, T. Stanley, S. Hartke, Precipitation error characterization for extreme events and applications for hydrometeorological hazards, NASA Precipitation Measurement Mission Science Team Meeting, San Diego, CA, October 19, 2017.
- Wright, D.B., Modern Precipitation Data and Its Applications: Errors, Insights, and Flood Frequency Analysis in a Changing World, University of California-Irvine, Irvine, CA, October 16, 2017.
- Wright, D.B., The Riddle of Flood Hazards in a Changing World, Weston Roundtable Series, University of Wisconsin-Madison, Madison, WI, March 30, 2017.
- Wright, D.B., Data-Driven Assessment of Rainfall and Flood Hazards in a Changing World, Environmental Engineering Seminar Series, Marquette University and the Global Water Center, Milwaukee, WI, March 3, 2017.
- Wright, D.B., Horton's 'Rule of Data' Revisited: Alternatives for Rainfall and Flood Frequency Analysis in a Changing World, Ven Te Chow Hydrosystems Laboratory Seminar Series, University of Illinois, Urbana-Champaign, IL, February 3, 2017.
- Wright, D.B., Probabilistic Modeling of Extreme Rainfall and Nonstationary Flood Hazards Using Remote Sensing, Atmospheric and Oceanic Sciences Colloquium, University of Wisconsin-Madison, Madison, WI, December 5, 2016.
- Wright, D.B., Data-Driven Understanding of Rainfall and Floods in (Two) Changing Environments, Water Resources Engineering and Environmental Fluid Mechanics seminar series, University of Wisconsin-Madison, Madison, WI, September 15, 2016.
- Wright, D.B., Thunderstorms, Hurricanes, and the Flood Hydroclimate of the Eastern United States, Nelson Institute Center for Climatic Research Climate, People, and the Environment Program seminar series, University of Wisconsin-Madison, Madison, WI, January 29, 2016.
- Wright, D.B., Multi-Scale Flood Risk Estimation using Rainfall Remote Sensing, Civil and Environmental Engineering Department, Colorado State University, Fort Collins, CO, October 30, 2015.
- Wright, D.B., Using Remote Sensing to Understand the Joint Probability of Extreme Rainfall and Flood Response, Dam Safety Office, U.S. Bureau of Reclamation, Denver, CO, October 29, 2015.
- Wright, D.B., The Importance of Rainfall (and Rainfall Remote Sensing) for Understanding Floods and Flood Risks, Civil and Environmental Engineering Department, University of Texas Arlington, Arlington, TX, September 28, 2015.

- Wright, D.B., C.D. Peters-Lidard, RainyDay: Open Source Extreme Rainfall Modeling, Engineering for Climate Extremes Partnership Workshop 3rd Annual Workshop, National Center for Atmospheric Research, August 20, 2015.
- Wright, D.B., RainyDay: A Tool for the Assessment of Long-Term Flood Hazard using Rainfall Remote Sensing, National Weather Service Office of Hydrologic Development, Silver Spring, MD, May 14, 2015.
- Wright, D.B., Rainfall, Hazards, and Hydrology: The Engineering Importance of Hydrometeorology and Remote Sensing, Civil and Environmental Engineering Department, University of Wisconsin Madison, Madison, WI, March 24, 2015.
- Wright, D.B., Rainy Day: Toward Modern Flood Hazard Assessment using Remote Sensing, IIHR-Hydroscience and Engineering, University of Iowa, Iowa City, IA, January 23, 2015.
- Wright, D.B., Hurricanes, Thunderstorms, and Urban Flooding in the Eastern United States, Center for Urban Environmental Research and Education, University of Maryland Baltimore County, Baltimore, MD, October 10, 2014.
- Wright, D.B., Understanding Flood Hazards with Remote Sensing, Civil and Environmental Engineering Department, University of California Davis, Davis, CA, April 23, 2014.
- Wright, D.B., J.A. Smith, T.R. Knutson, M.L. Baeck, Present and Future Impacts of Tropical Cyclones on Urban Flooding in the Eastern United States, AIR Worldwide, Boston, MA, July 30, 2013.
- Wright, D.B., J.A. Smith, M.L. Baeck, Understanding Urban Flood Risk: Integrating Hydrology, Meteorology, and Climate Science, Columbia Water Center, Columbia University, New York, NY, June 21, 2013.
- Wright, D.B., J.A. Smith, M.L. Baeck, Understanding Urban Flood Risk: Integrating Hydrology, Meteorology, and Climate Science, The Global Facility for Disaster Reduction and Recovery, World Bank Global Facility for Disaster Reduction and Recovery, Washington D.C., May 7, 2013.
- Wright, D.B., J.A. Smith, M.L. Baeck, An Observation-Driven Approach to Rainfall and Flood Frequency Analysis Using High-Resolution Radar Rainfall Fields and Stochastic Storm Transposition, Nuclear Regulatory Commission Workshop on Probabilistic Flood Hazard Assessment, Washington D.C., January 29, 2013.
- Wright, D.B., J.A. Smith, M.L. Baeck, J. Yeung, L. Yang. Rainfall modification in urban areas: no easy answers, Symposium on Fluid Dynamics and the Global Environment, Princeton University, Princeton, NJ, May 22, 2012.

Selected Conference Presentations (advised students/postdocs in bold):

- **Abbasian, M.**, D.B. Wright, D.J. Vimont, M. Notaro, S. Vavrus, The Combined Effects of Seasonal Climate and Extreme Precipitation on Flood Hazard in the Midwest. The Midwest Climate Adaptation Science Center's 2023 Annual Gathering, Indianapolis, Indiana, August 14, 2023.
- **Hartke, S., G.A. Alexander**, D.B. Wright, **K. Peng**, Impacts of IMERG Precipitation Uncertainty on Near-Surface Hydrologic Fluxes in a Season Long Simulation, American Meteorological Society Annual Meeting, Denver, CO, January 12, 2023.
- **Alexander, G.A.**, C.B. Voter, D.B. Wright, S.P. Loheide, Resolving Fine-Scale Lateral Water Transfers in Urban Environments Alters Regional Climate Simulations, American Meteorological Society Annual Meeting, Denver, CO, January 9, 2023.
- **Tao, Y.**, D.B. Wright, **Y. Liu**, Spatiotemporal Characteristics of Heavy Precipitation Systems in the Upper Midwestern United States, American Geophysical Union Fall Meeting, Chicago, IL, December 15, 2022.
- Wright, D.B., L. Cunha, F.L. Ogden, **B. FitzGerald**, Lowering Barriers to Process-Based Prediction and Understanding of Flood Frequency using the Nextgen Water Modeling Framework, American Geophysical Union Fall Meeting, Chicago, IL, December 14, 2022.
- Yu, G., D.B. Wright, F.V. Davenport, Diverse Physical Processes Drive Upper-Tail Flood Quantiles in the US Mountain West, American Geophysical Union Fall Meeting, Chicago, IL, December 14, 2022.
- **Liu, Y.**, D.B. Wright, A Multivariate Model of Atmospheric Water Balance to Estimate Extreme Storm Frequency in the Mississippi Basin, American Geophysical Union Fall Meeting, Chicago, IL, December 14, 2022.

- Zhuang, Q., Z. Zhou, S. Liu, and D.B. Wright, The evaluation and downscaling-calibration of IMERG precipitation products at sub-daily scales over a metropolitan region, American Geophysical Union Fall Meeting, Chicago, IL, December 14, 2022.
- **Alexander, G.A.**, C.B. Voter, S.P. Loheide, D.B. Wright, Better representation of urban hydrologic processes alters how heat responds to urban vegetation in regional climate models, American Geophysical Union Fall Meeting, Chicago, IL, December 13, 2022.
- Mascaro, G., S.M. Papalexiou, D.B. Wright, Gaining Insights into Sub-Daily Precipitation through a High-Density Rain Gage Network and Space-Time Stochastic Simulations, American Geophysical Union Fall Meeting, Chicago, IL, December 13, 2022.
- Yu, G., J. Miller, B. Hatchett, M. Berli, United States, D.B. Wright, Z. Zhu, How Has the Flood Recipe for the Las Vegas Wash Watershed Changed?, American Geophysical Union Fall Meeting, Chicago, IL, December 13, 2022.
- Wright, D.B., **S.H. Hartke, K. Peng**, J. Tan, Global Multiscale Uncertainty Estimation for Satellite Precipitation Products to Improve Hydrologic Prediction, NASA Precipitation Measurement Mission Science Team Meeting, Denver, CO, October 5, 2022.
- **Hartke, S.H.**, D.B. Wright, F.D. Quintero, A.S. Falck, Incorporating Satellite Precipitation Uncertainty into Hydrologic Modeling using Ensemble Methods, AGU Frontiers in Hydrology Meeting, San Juan, Puerto Rico, June 24, 2022.
- Ivanov, V., et al., Zooming in on hydrologic dynamics through data, probabilistic learning, and high-fidelity modeling, AGU Frontiers in Hydrology Meeting, San Juan, Puerto Rico, June 23, 2022.
- Wright, D.B., **Y. Li**, P. Byrne, **Y. Liu**, B. Bledsoe, Path-Dependent Flood Hazard in Puerto Rico is Driven by Tropical Cyclones, AGU Frontiers in Hydrology Meeting, San Juan, Puerto Rico, June 23, 2022.
- **Zoccatelli, D.**, D.B. Wright, J.T. White, M.N. Fienen, How well can inverse methods detect and mitigate input errors in rainfall-runoff models? AGU Frontiers in Hydrology Meeting, San Juan, Puerto Rico, June 22, 2022.
- **Hartke, S.H.**, D.B. Wright, **Z. Li**, Using the Space-time Rainfall Error and Autocorrelation Model (STREAM) to Account for Satellite Precipitation Uncertainty Across Space-time Scales. AGU Fall Meeting. December 13, 2021 (Hybrid).
- **Alexander, G. A.**, C. B. Voter, S. P. Loheide, D. B. Wright, Incorporating Impacts of Green Infrastructure into a Large-Scale Land Surface Model., American Geophysical Union Annual Fall Meeting. December 15, 2021 (Hybrid).
- **Li, Z.**, Wright, D., **Hartke, S.**, Kirschbaum, D., Khan, S., Maggioni, V., and Kirstetter, P.-E.: A Prototype IMERG Error Modeling Framework based on GPM DPR Observations and its Global Validation, EGU General Assembly 2021, April 19-30, 2021 (Virtual).
- **Alexander, G.**, C. Voter, S. Loheide, D.B. Wright, Incorporating the Hydrologic Impacts of Low Impact Development in a Large-Scale Land Surface Model, Wisconsin section of the American Water Resources Association Annual Meeting, (Virtual), March 4, 2021.
- D.B. Wright, Updating Rainfall Statistics for Infrastructure Design in a Warming Climate, Wisconsin section of the American Water Resources Association Annual Meeting, (Virtual), March 3, 2021.
- **Abe, C.**, D.B. Wright, D. Touma, Spatio-Temporal Patterns of Extreme Storms in the Mississippi Basin, Wisconsin section of the American Water Resources Association Annual Meeting, (Virtual), March 3, 2021.
- **Yu, G.**, D.B. Wright, K. Holman, How Will Flood Hazard Change in a Warmer Future in Turkey River, Iowa?, Wisconsin section of the American Water Resources Association Annual Meeting, (Virtual), March 3, 2021.
- Perez, G.,J. Velez-Gomez, R. Mantilla, D.B. Wright, **Z. Li**, The Effect of Storm Direction on Flood Frequency Analysis Using Physically-Based Streamflow Simulations, American Geophysical Union Fall Meeting, Virtual, December 16, 2020.
- **Hartke, S.**, D.B. Wright, **Z. Li**, A Space-Time Error Model for Satellite Precipitation Products, American Geophysical Union Fall Meeting, Virtual, December 15, 2020.
- **Bosma, C.D.**, D.B. Wright, P. Nguyen, J.P. Kossin, D. Herndon, and J.M. Shepherd, An intuitive metric to quantify and communicate tropical cyclone rainfall hazard, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2019.

- **Hartke, S.**, D.B. Wright, **Z. Li**, D.B. Kirschbaum, and T. Stanley. Accounting for Satellite Precipitation Uncertainty in Environmental Modeling Applications: Developing a Probabilistic Landslide Hazard Model, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2019.
- **Li, Y.** and Wright, D.B. Short-term Influence of Tropical Storms and Hurricanes on Flood Hazard in Puerto Rico, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2019.
- **Yu, G.**, D.B. Wright, K.D. Holman, The Upper Tail of Precipitation in Convection-Permitting Regional Climate Models and Their Utility in Nonstationary Flood Frequency Analysis, American Geophysical Union Fall Meeting, San Francisco, CA, December 11, 2019.
- Wright, D.B., **C.D. Bosma**, T.P. Lopez-Cantu, U.S. hydrologic design standards insufficient due to large increases in frequency of rainfall extremes, American Geophysical Union Fall Meeting, San Francisco, CA, December 11, 2019.
- **Li, Z.**, D.B. Wright, **S. Hartke**, D.B. Kirschbaum, V. Maggioni and P.-E. Kirstetter Do We Need Rain Gauges? A Prototype Error Modeling Framework for IMERG based on GPM DPR, American Geophysical Union Fall Meeting, San Francisco, CA, December 10, 2019.
- Xu, D., M.C. Dwelle, D.B. Wright, J. Kim, K. Sargsyan, V.Y. Ivanov, Pre-training of urban flood simulation for real-time flood forecasting within uncertainty quantification framework, American Geophysical Union Fall Meeting, San Francisco, CA, December 9, 2019.
- Wright, D.B., **G. Yu**, Rainfall and Flood Frequency Analysis using Stochastic Storm Transposition and Precipitation Remote Sensing, 12th International Precipitation Conference, Irvine, CA, June 20, 2019.
- Cristiano, E., M.-C. ten Veldhuis, M.A. Schleiss, D.B. Wright, N.C. van de Giesen, Does rainfall intermittency help explain the sensitivity of urban hydrological response?, European Geophysical Union Meeting, Vienna, Austria, April 11, 2019.
- **G. Yu**, D.B. Wright, Process-Based Flood Frequency Analysis using Stochastic Storm Transposition and Hydrologic Modeling, Wisconsin section of the American Water Resources Association Annual Meeting, Appleton, WI, March 1, 2019.
- D.B. Wright, Rainfall and Flood Lessons from a Wet Hot Wisconsin Summer, Wisconsin section of the American Water Resources Association Annual Meeting, Appleton, WI, March 1, 2019.
- **Li, Z.**, D.B. Wright, S. Zhang, **S. Hartke**, D. Kirschbaum, Complementarity in Gridded High-Resolution Satellite Precipitation Estimates from IMERG and NASA-Unified WRF, American Geophysical Union Fall Meeting, Washington, DC, December 14, 2018.
- Wright, D.B., **C.D. Bosma**, J. Herrera-Estrada, Climate, Land Use, Flood Control Infrastructure, and Extreme Floods in the Conterminous United States, American Geophysical Union Fall Meeting, Washington, DC, December 12, 2018.
- **Bosma, C.D.**, D.B. Wright, P. Nguyen, A New Metric to Communicate Tropical Cyclone Rainfall Hazard, American Geophysical Union Fall Meeting, Washington, DC, December 13, 2018.
- **G. Yu**, D.B. Wright, K. Holman, Bottom-up Flood Frequency Analysis using Stochastic Storm Transposition and WRF-Hydro in the context of nonstationarity, American Geophysical Union Fall Meeting, Washington, DC, December 12, 2018.
- Mantilla, R., W. Krajewski, G. Perez, D.B. Wright, Comparison of Local and Regional Methods to Estimate Peak Flow Quantiles Based on Synthetic Records, American Geophysical Union Fall Meeting, Washington, DC, December 12, 2018.
- **Hartke, S.**, D.B. Wright, D. Kirschbaum, T. Stanley, Z. Li, Incorporating Satellite Precipitation Uncertainty in Landslide Hazard Predictions over the Southeastern U.S., American Geophysical Union Fall Meeting, Washington, DC, December 10, 2018.
- Cristiano, E., M.-C. ten Veldhuis, D.B. Wright, J.A. Smith, N. van de Giesen, Evaluating critical rainfall and catchment scale influence on hydrological response in urban areas, International Workshop on Precipitation in Urban Areas, December 4, 2018.
- G. Perez, Mantilla, R., W. Krajewski, D.B. Wright, Comparison of Local and Regional Methods to Estimate Peak Flow Quantiles Based on Synthetic Records, 9th International Statistics in Hydrology Workshop, Adelaide, Australia, September 25, 2018.
- **Bosma, C.D.**, D.B. Wright, P. Nguyen, Assessing the Regional Frequency, Intensity, and Spatial Extent of Tropical Cyclone Rainfall, EWRI Congress, Minneapolis, MN, June 6, 2018.

- Zhu, Zhihua, D.B. Wright, G. Yu, The Impact of Rainfall Space-Time Structure in Flood Frequency Analysis, EWRI Congress, Minneapolis, MN, June 6, 2018.
- **Yu, Guo**, D.B. Wright, K. Holman, Z. Zhu Nonstationary Flood Frequency Analysis using Stochastic Storm Transposition and Hydrologic Modeling: A Case Study for Turkey River, Iowa, EWRI Congress, Minneapolis, MN, June 5, 2018.
- **Yu, Guo**, D.B. Wright, Application of Stochastic Storm Transposition and Hydrologic Modelling to Flood Frequency Analysis: A Case Study for Turkey River, Iowa, Wisconsin section of the American Water Resources Association Annual Meeting, Appleton, WI, March 8, 2018.
- Wright, D.B., **G. Yu**, K. Holman, A Web-based Stochastic Storm Transposition Toolkit for Physically-based Rainfall and Flood Hazard Analysis, American Meteorological Society Annual Meeting, January 8, 2018.
- **Smith, Cassia, G. Yu**, Wright, D.B., What Is Driving the Observed Changes in Flooding in the Turkey River in Iowa?, American Geophysical Union Fall Meeting, New Orleans, LA, December 14, 2017.
- Zhou, Z., J.A. Smith, L. Yang, M.L. Baeck, D.B. Wright, S. Liu Regional frequency analysis of extreme rainfall for the Baltimore Metropolitan region based on stochastic storm transposition, New Orleans, LA, December 13, 2017.
- Wright, D.B., **G. Yu**, K. Holman, RainyDay: An Online, Open-Source Tool for Remote Sensing-based Rainfall and Flood Frequency Analysis, American Geophysical Union Fall Meeting, New Orleans, LA, December 13, 2017.
- **Bosma, C.D.**, D.B. Wright, P. Nguyen, Assessing the Regional Frequency, Intensity, and Spatial Extent of Tropical Cyclone Rainfall, American Geophysical Union Fall Meeting, New Orleans, LA, December 12, 2017.
- Wright, D.B., Data-Driven Flood Frequency Analysis in a Changing World, EWRI Congress, Sacramento, CA, May 22, 2017
- Wright, D.B., Flood Frequency Analysis and Hydrologic Design in a Nonstationary World using Stochastic Storm Transposition and Rainfall Remote Sensing, Weather Radar and Hydrology International Symposium, Seoul, South Korea, April 13, 2017.
- Wright, D.B., D.B. Kirschbaum, S. Yatheendradas, An Ensemble Generator for Quantitative Precipitation Estimation Based on Censored Shifted Gamma Distributions, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2016.
- Kirschbaum, D.B., D.B. Wright, T. Stanley, S. Yatheendradas, A Regional Analysis Framework for Evaluating Satellite Rainfall Extremes in Complex Terrain for Landslide Hazards Applications (Poster), NASA Precipitation Measurement Mission Science Team Meeting, Houston, TX, October 24-28, 2016.
- Wright, D.B., Dynamical Data-Driven Assessment of Long-term Flood Hazards in a Changing Environment, Society for Industrial and Applied Mathematics Conference on Mathematics of the Planet Earth, Philadelphia, PA, October 1, 2016.
- Wright, D.B., R. Mantilla, C.D. Peters-Lidard, Using Remote Sensing to Understand the Joint Probability of Extreme Rainfall and Flood Response, American Geophysical Union Fall Meeting, San Francisco, CA, December 15, 2015.
- Wright, D.B., C.D. Peters-Lidard, T. Ayalew, R. Mantilla, F. Quintero, S. Yatheendradas, D. Kirschbaum, RainyDay: A Remote Sensing-Driven Extreme Rainfall Simulation Approach for Hazard Assessment, European Geosciences Union General Assembly, Vienna, Austria, April 16, 2015.
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- Wright, D.B., J.A. Smith, T.R. Knutson, M.L. Baeck, Present and Future Impacts of Tropical Cyclones on Urban Flooding in the Eastern United States, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2013.
- Sedlar, F., V.Y. Ivanov, J.X. Shao, U. Narayan, F. Nardi, T.E. Adams, V. Merwade, D.B. Wright, J. Kim, S. Fatichi, E. Rakhmatulina, The development of a hydrologic-hydraulic representation of an urbancape: the case study of Nashville, Tennessee, American Geophysical Union Fall Meeting, San Francisco, CA, December 13, 2013.

- Wright, D.B., J.A. Smith, M.L. Baeck, Rainfall and Flood Frequency Analysis Using High-Resolution Radar Rainfall Fields and Stochastic Storm Transposition, European Geosciences Union General Assembly, Vienna, Austria, April 6, 2013.
- Wright, D.B., J.A. Smith, G. Villarini, M.L. Baeck, New Approaches to Rainfall and Flood Frequency Analysis Using High Resolution Radar Rainfall Fields and Stochastic Storm Transposition, American Geophysical Union Fall Meeting, San Francisco, CA, December 6, 2012.
- Wright, D.B., J.A. Smith, G. Villarini, M.L. Baeck. Applications of Radar-Based Rainfall Estimates for Urban Flood Studies, Stormwater and Urban Water Systems Modeling, Computational Hydraulics Incorporated. Toronto, Canada, February 22, 2012.
- Wright, D.B., J.A. Smith, G. Villarini, M.L. Baeck. The Flood Hydroclimatology of Urban Environments in the Southeastern United States, American Geophysical Union Fall Meeting, San Francisco, CA, December 6, 2011.
- Wright, D.B., J.A. Smith, G. Villarini, M.L. Baeck. Hydroclimatologic Analyses of Extreme Rainfall and Flooding in Atlanta, Georgia Using Long-Term Radar-Rainfall Datasets, American Geophysical Union Fall Meeting, San Francisco, CA, December 14, 2010.
- Smith, J. A., M.L. Baeck, G. Villarini, B.K. Smith, D.B. Wright. Urbanization and the Regional Rainfall Climatology of the Baltimore Metropolitan Region, American Geophysical Union Fall Meeting, San Francisco, CA, December 2010.
- Chang, S.-C., P. Adriaens, T. Towey, D. Wright, A. Demond, B. Gillespie, A. Franzblau, D. Garabrant, Analysis of Patterns in PCDD, PCDF and PCB Soil Concentrations from a Community in Michigan, USA, Dioxin 2006, Oslo, Norway, August 21-25, 2006.
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Workshops/Special Courses:

- Attendee and Presenter, Flood Forecasting Meets Machine Learning, Google, Tel Aviv, Israel, January 16-17, 2019
- Participant, Summer School on Atmospheric Modeling, NOAA Geophysical Fluid Dynamics Laboratory, Princeton, NJ, July 2012
- Participant, three-week Advanced Study Program Summer Colloquium: Statistical Assessment of Extreme Weather Phenomena Under Climate Change, National Center for Atmospheric Research, Boulder, CO, June 2011
- International development specialist for Sustainable Energy Development in South America, University of Michigan and Universidad de Concepción, Concepción, Chile, February 2008

Memberships:

- American Society of Civil Engineers
- American Geophysical Union
- Engineers Without Borders

Languages:

- English-native
- Spanish-advanced