G. Aaron Alexander

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Citizenship: U.S.

Education:

Ph.D. Candidate in Water Resources Engineering
June 2020 – Present

University of Wisconsin, Madison
Advisors: Dr. Daniel B. Wright, Dr. Steven P. Loheide II, Dr. Carolyn B. Voter
Dissertation Title: The Role of Widespread Greening on Urban Hydrological and Hydrometeorological Processes
Expected Graduation: Fall 2024

M.S. in Water Resources Engineering
August 2017 – March 2020

University of California, Davis
Advisor: Dr. Holly J. Oldroyd
Emphasis in Micrometeorology/Land-Surface Interactions/Earth Systems Modeling

B.S. in Physics and Atmospheric Sciences
August 2013 – May 2017

University of Nevada, Reno
Honors: Magna Cum Laude, Westfall Scholar University of Nevada, Reno Outstanding Senior Award, NSF Nevada EPSCoR Grant Recipient 2016, Undergraduate Research Scholarship Recipient 2016, John W. James Scholarship Recipient, Dean's List Fall 2013-Spring 2017

Publications:

- **Alexander, G. Aaron**, C.B. Voter, S.P. Loheide, and D.B. Wright: Urban ecohydrology: Accounting for sub-grid lateral water and energy transfers in a land surface model. Water Resources Research, 60, e2023WR035511. https://doi.org /10.1029/2023WR035511
- Tran, Vinh Ngoc, Valeriy Y. Ivanov, Weichen Huang, Kevin Murphy, Fariborz Daneshvar, **G. Aaron Alexander**, Jongho Kim, Daniel B. Wright: Flood Connectivity in Urbanscapes Can Reverse Stormwater Systems' Work (In Review)
- Caputi, D.J., Trousdell, J., Mehrotra, S., Conoley S., **Alexander, GA**., Oldroyd, H., Faloona, I. . Entrainment Rates and Their Synoptic Dependence on Wind Speed Aloft in California's Central Valley. Boundary-Layer Meteorology (2022). https://doi.org/10.1007/s10546-022-00770-1
- **Alexander, G. A.,** Holmes, HA, Sun, X., Caputi, D., Faloona, IC, & Oldroyd, HJ.: Simulating land-atmosphere coupling in the Central Valley, California: Investigating soil moisture impacts on boundary layer properties (2022). Agricultural and Forest Meteorology, Volume 317 http://dx.doi.org/10.1016/j.agrformet.2022.108898

- Kelley, Jason & McCauley, Dalyn & **Alexander, G. Aaron** & Gray, Wilton & Siegfried, Rylie & Oldroyd, H.: Using Machine Learning to Integrate On-Farm Sensors and Agro-Meteorology Networks into Site-Specific Decision Support (2020). Transactions of the ASABE. 63. 1427-1439. 10.13031/trans.13917.

Selected Invited Presentations:

- **Alexander, G. Aaron**, C. B. Voter, S.P. Loheide, and D.B. Wright: Developing New Mosaic and Urban Sub-Grid Scale Modules for Noah-MP. Noah-MP National Monthly Telecon. 27 September 2023
- **Alexander, G. Aaron**, C. B. Voter, S.P. Loheide, and D.B. Wright: Better Representation of Urban Vegetation Alters Surface Water and Temperature Cycles. Climate, People, and the Environment Program Seminar. 11 Apr 2023. https://www.youtube.com/watch?v=UeqhUzJVPvU&list=PLYi-sc-stSe6vkFL0X4swp8d4Wt8HMY9B&index=7
- **Alexander, G. Aaron**, 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).

Selected Conference Presentations:

- **Alexander G. A.,** C. B. Voter. S. P. Loheide, D. B. Wright: Better Representation of Urban Hydrologic Processes Alters Surface Water and Temperature Cycles in Regional Climate Models. CUAHSI Bienniel 2023, 11-15 June 2023
- **Alexander G. A*.,** C. B. Voter. S. P. Loheide, D. B. Wright: Resolving Fine-Scale Lateral Water Transfers in Urban Environments Alters Regional Climate Simulations. Bryson Poster Reception, Madison, WI. 13 Feb 2023 *(*Runner-up in Outstanding Poster Competition)*
- **Alexander G. A.,** C. B. Voter. S. P. Loheide, D. B. Wright: Resolving Fine-Scale Lateral Water Transfers in Urban Environments Alters Regional Climate Simulations. 36CVC-40: Frontiers in Earth Systems Modeling: Bridging the Gap Between Weather, Climate, and Impacts. Denver, Co. Presented at 2023 AMS Annual Meeting, 8-12 Jan 2023
- **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. H22Y-1159: Urban Heat, Vegetation, and Water Dynamics: New Insights and Implications for Management and Equity. Chicago, Il. Presented at 2022 AGU Fall Meeting, 12-16 Dec 2022
- **Alexander G. A.,** C. B. Voter. S. P. Loheide, D. B. Wright: Incorporating Impacts of Green Infrastructure into a Large-Scale Land Surface Model. H34H: Urban Heat, Vegetation, and Water Dynamics: New Insights and Implications for Management and Equity. New Orleans, LA. Presented at 2021 AGU Fall Meeting, 13-17 Dec 2021