

Hydrologic changes with urban development in the Denver metropolitan area

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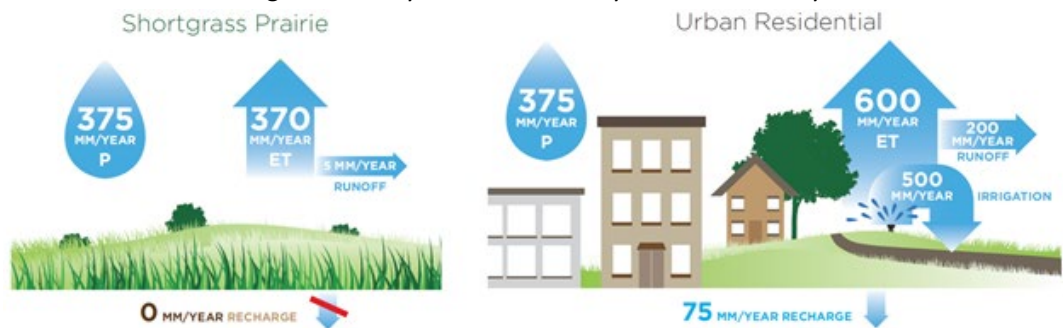
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Zoom: <https://cuboulder.zoom.us/j/98861379124>

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Abstract:

In this talk I will summarize current research activities in the Ecological Fluid Dynamics laboratory at the University of Colorado Boulder; these projects span a broad range of fields including neuroscience and brain function, homeland security, and public health. Our lab is working as part of an international network of scientists to understand how odors are transported through the environment, how animals actively sense these odors, and how the brain encodes and processes olfactory information to make behavioral responses. We are also studying the transport of explosive odors, working to understand how to detect explosives hidden in passenger vehicles, and optimize training protocols for military working dogs screening cars at military checkpoints. Finally, I will describe a recent collaboration where we are quantifying the growth and spread of aerosol plumes emanating from flushing commercial toilets. These plumes are potential vectors for the spread of a range of enteric and respiratory pathogens. The talk will highlight a range of experimental and numerical methodologies used to understand the physics governing the transport and dispersion of odors, explosive plumes, and pathogen-laden aerosols.



Speaker Bios: Dr. Bhaskar specializes in changes to hydrologic systems from urban development, with a focus on interactions between groundwater, surface water, and engineered stormwater and water distribution systems. Dr. Bhaskar received a Sc.B. in Geology-Physics/Math from Brown University in Providence, Rhode Island, and a Ph.D. in Environmental Engineering from University of Maryland, Baltimore County. She was a graduate trainee of the National Science Foundation Integrative Graduate Education and Research Traineeship (IGERT) in "Water in the Urban Environment" at UMBC. Dr. Bhaskar was then awarded a National Science Foundation Earth Sciences Postdoctoral Fellowship, which took her to the Eastern Geographic Science Center at the U.S. Geological Survey in Reston, Virginia, before joining CSU.