

Reclaimed Water and the Fate of Pharmaceuticals in the Environment



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Reports of the environmental occurrence of pharmaceuticals and contaminants of emerging concern (CECs) have increased due to more accessible analytical techniques. Water supplies are commonly found to contain CEC's due to introduction through animal husbandry operations and the release of sewage (treated and untreated). Reuse of reclaimed water from municipal sewage plants has the potential to provide an economically viable source of new water. Sewage biosolids are commonly land applied for their fertilizer value and treated effluent can be released to rivers or land applied as irrigation water. In water-limited environments, reclaimed water is seen as a valuable resource for irrigation to meet evapotranspiration. Understanding the environmental fate and transport of CEC's is important in protecting both the environment and human health. Research will be presented that investigates both fundamental mechanisms of CEC fate and transport as well as whole systems approaches to understanding the potential effects of CEC's in the environment.

About the Speaker

Dr. Williams received his B.S. degree from Brigham Young University in 1992, his Chemistry M.S. degree from Brigham Young University in 1995, and his Soil Physics Ph.D. in Soil Physics/Soil Chemistry from the University of California, Riverside in 1998.

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Today, Dr. Williams is working as a USDA representative to the Pharmaceuticals in the Environment Workgroup, and to the Advanced Water Treatment Workgroup. He is also a judge for US Bureau of Reclamation advanced water treatment prize competition.

Dr. Williams' research interests are the fate of pharmaceuticals and contaminants of emerging concern in the environment, advanced water treatment to remove contaminants of emerging concern, and safe use of reclaimed water.



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