



Anthropogenic Small Molecules in the Environment, How They Are Measured, and Engineered Solutions

Anthropogenic small molecules are produced through human activity either intentionally or unintentionally. Some are released to the environment and are ecotoxic, others pose a threat to human health. These chemicals occur at trace concentrations because they are not generally released intentionally, and are diluted into wastewater and surface water flows. Because these chemicals occur at trace concentrations, their measurement can be challenging and expensive. This talk will focus on three facets of anthropogenic small molecules. First we will discuss the occurrence of wastewater pharmaceuticals in northern Nevada/California with a focus on worse-case exposure scenarios. Second, I will demonstrate that the chemicals that are measured by mass spectrometry, or which are *not* measured, can strongly influence experimental conclusions. Finally, we will discuss potential solutions to overcome challenges related to measurements of small molecules and their environmental release/capture.



Dr. David Hanigan has been an Assistant Professor at the University of Nevada since the fall of 2016. Since joining UNR he has secured >\$1.7M in funding from USDA, WRF, NSF, and SERDP and published ~40 papers in peer reviewed journals.

He has a BS and MS from the University of Missouri, Columbia and completed a PhD at Arizona State University in Civil and Environmental Engineering in 2015. He is a registered professional engineer. Research that his team conducts focuses on water reuse and environmental chemistry, with an emphasis on reducing the environmental loading of anthropogenic chemicals. In his free time he enjoys mountain biking and backpacking, and when the weather does not allow for those two he will begrudgingly ski.

Date: March 23, 2022, 11:00 a.m. - 12:00 p.m.

Place: PACCAR Auditorium