

Environmental Engineering Seminar

*The Astani Department of Civil & Environmental Engineering
presents*



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Date: May 2nd, 2019

Time: 4 – 5 pm

Place: RRI 101

Unexpected products formed during oxidative water treatment

Hydrogen peroxide and persulfate are employed in the treatment of contaminated soil and groundwater by in situ chemical oxidation (ISCO) as well as in advanced oxidation processes (AOPs) for wastewater treatment and drinking water purification. Activation of the peroxy bonds in these oxidants produces hydroxyl radical and sulfate radical, which can degrade recalcitrant organic contaminants such as aromatic compounds like benzene. Our research on the oxidation of aromatics has highlighted a ring-cleavage mechanism that forms low molecular weight aldehydes as well as α,β -unsaturated aldehydes. This is a concern for toxicity as α,β -unsaturated aldehydes are highly reactive with biomolecules. Their detection has implications for hazardous site remediation as well as the use of AOPs for water treatment.

About the Speaker

Jean Van Buren is a UC Berkeley Ph.D. candidate in the Department of Chemistry working with David Sedlak at the Berkeley Water Center. She received her B.A. from Cornell University in Chemistry. Her research interests include environmental chemistry, water remediation, and transformation products. Outside of the lab, she is a professional equestrian.

