

Fate and Accumulation of Pharmaceuticals and Personal Care Products in the Environment



Department of Biology Seminar

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Lsci 185 at 3:15p.m.

Host: Cody Sheik and Tedy Ozersky

Coffee and cookies served in the SSB Atrium at 2:30 p.m.

Pharmaceuticals and personal care products (PPCPs) are emerging chemicals of concern and have been detected in surface waters globally. PPCPs enter the environment through human consumption and excretion but may be ineffectively removed by wastewater treatment plants (WWTP). Once in the water they may persist in the environment and have diverse, subtle effects on organisms, although research is limited. Through this presentation, I will discuss two research projects focused on the fate and accumulation of PPCPs in the environment. Firstly, I will present a recent paper where we investigated the correlation of measured concentrations of pharmaceuticals in wastewater effluents between pharmaceutical concentrations predicted from prescription drug rate data available from local pharmacies. I will also discuss the utility of this prediction approach in environmental assessment scenarios. I will then focus on my current PhD research: The influence of biotransformation on the bioaccumulation of organic sunscreen agents (UVFs) in fish. Many UVFs are hydrophobic ($\log K_{ow} > 4.0$) and their bioaccumulation in aquatic food webs has been observed, warranting further investigations on UVF bioaccumulation. I will describe how I use *in vitro* and *in vivo* approaches to evaluate the bioaccumulation potential of these substances in fish and how my research also seeks to support and improve current tools in chemical bioaccumulation assessment.