



ses

school of environmental sciences

The Research Seminar Presentation by

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will be held on

Tuesday March 10th, 2020

At 13:45 pm

Alexander Hall 265

Title: Alterations to the bioavailability of polycyclic aromatic hydrocarbons (PAHs) when in the presence of microplastics in freshwater environments

The average person is estimated to ingest hundreds of thousands of microplastics every year from our food, water, and air. In order to characterize the risks posed by microplastics as pollutants, we must learn how they interact not only with living systems, but also with the other pollutants present in the environment. Microplastics have a number of chemical and physical properties that allow them to adsorb various chemical contaminants onto their surfaces. In aquatic environments, adsorption to microplastic surfaces changes the concentrations of those contaminants in the sediment and water column, which in turn alters their bioavailability to aquatic life. Polycyclic aromatic hydrocarbons (PAHs) are globally ubiquitous, persistent organic pollutants (POPs) that have strong chemical interactions with microplastics. PAHs have natural sources such as forest fires and volcanoes, and anthropogenic sources such as oil spills and the incomplete combustion of fossil fuels. Many PAHs are carcinogenic and/or mutagenic towards plants; animals; and humans, and they have been detected in plant and animal tissues; drinking water; air; industrial effluents; and sediments. Aquatic organisms take up and accumulate a considerable amount of PAHs, creating the potential for their biomagnification up the food chain. This is a common route of PAH exposure for humans. Our study will evaluate whether PAH adsorption to microplastics reduces the bioavailability of PAHs in freshwater environments, which would mean fewer PAHs contaminating a variety of human food sources.

Everyone is welcome to attend

(This is a Research Proposal presentation by students in ENVS*6900)