

GTA Pub Night

Fate and effects of metal inputs into the environment via industrial activity

Dr. Yamini Gopalapillai
Environment and Climate Change Canada

When: Tues. April 2, 2019, 6:30 p.m. – 8:30 p.m.

Where: Union Social Eatery
Yonge and Sheppard;
4899 Yonge Street, Toronto

Cost: \$2 members/\$4 non-members

Join us for an engaging talk, delicious food, cozy atmosphere
and fine brew!

Please RSVP to [Denina Simmons](mailto:Denina.Simmons@uoit.ca)
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Abstract

The fundamental goal of my research is to reduce the uncertainty around estimating the risk of metal pollutants to the environment through characterizing the solution chemistry of the exposure medium and how that modifies fate and effects. Existing metal risk assessment and water/soil quality standards are based on total metal concentration; however, the exposure chemistry influences a metal's speciation and thereby its bioavailability to surrounding organisms. Over the past 15 years, my research has: quantified competition between other cations and the pollutant metal for binding to organic ligands including biota; identified relationships between external exposure chemistry, bioavailability and toxicity; and evaluated methods of estimating toxicity that are adjusted for solution chemistry. This work supports the development and validation of geochemistry-based toxicity models, which require high quality inputs such as environmental concentrations, equilibrium binding constants, and validation using measured abiotic and biotic parameters. My research has also validated the use of lab-based approaches in risk assessments of mining-impacted regions (Sudbury and Port Colborne, Ontario; Fort McMurray, Alberta).

Biography

Yamini Gopalapillai received her PhD in Environmental Sciences at the University of Guelph, joint with Natural Resources Canada (Ottawa). Most recently, she held a Natural Science and Engineering Research Council (NSERC) post-doctoral fellowship with the Aquatic Contaminants Research Division at Environment and Climate Change Canada (ECCC), where she is now a Research Scientist. Yamini has worked in all three sectors of research (academia, industry and government) and likes to apply her varied perspectives to her research in understanding the fate and effects of metals in the environment.