



**Flushing data down the drain – Tracking community
COVID-19 prevalence through wastewater**
Dr. Sarah Jane Payne/Queen's University
Thursday, September 29, 2022, 2:30pm
Dupuis Hall, Room 215

What can our sewage tell us about the health of our community?

SARS-CoV-2 (virus that causes COVID-19) has been detected in the stool of infected individuals (symptomatic, presymptomatic and asymptomatic). The genetic material from SARS-CoV-2 remains sufficiently intact long enough in sewage that it can be detected at community wastewater treatment plants. Thus, monitoring the sewage for SARS-CoV-2 allows us to get a “snap-shot” of COVID-19 community prevalence. Early in the pandemic, while individual clinical screening was still widespread, the wastewater signal tracked well with the clinical case counts. Now that individual testing and reporting is limited, wastewater-based epidemiology has emerged as a critical tool for understanding COVID-19 in our communities. In this seminar, Dr. Payne will share the history of wastewater-based epidemiology and share her team’s work on tracking of SARS-CoV-2 in Kingston throughout the COVID-19 pandemic years. Attendees will also learn about the critical engineering research challenges that need to be addressed in order to make this tool an even more effective early warning and public health surveillance tool. She will also explore its potential to track other diseases of interest (e.g. influenza), (re-)emerging diseases (e.g. polio, monkey pox), as well as other targets.

The COVID-19 crisis spurred an unparalleled response across the research community. Prior to COVID-19, the field of wastewater-based epidemiology was nascent, and two-and-a-half years later it is a robust public health surveillance tool. Dr. Payne will discuss how the early commitments to collaboration and spirit of openly sharing work has accelerated the advancement of wastewater-based epidemiology by ten years. This unusual research-ecosystem of collaboration and mutual aid has led to an explosion of research productivity.