



Urban Water TMU - September 2023

Welcoming the New 2023/24 Academic Year!

Welcome back Urban Water researchers! As the new school year commences, we are thrilled to have you return to campus full-time and are excited to explore the many new opportunities and initiatives that the academic year will bring!

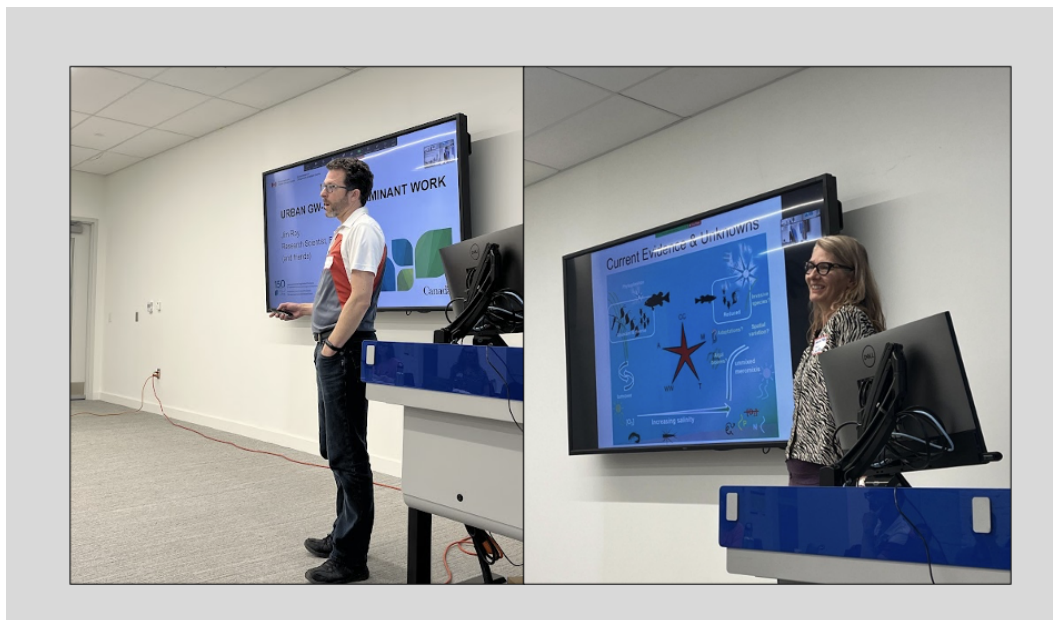
Reminder about SOPs and General Housekeeping

UW researchers are reminded that it is their individual responsibility to familiarize themselves and stay updated with the [UW TMU Standard Operating Procedures](#).

UW researchers are required to input their time in the shared Google Calendars each visit. As an UW researcher, you will have access to the relevant Google Calendar(s) for your space. Please contact us if you cannot access the required Google Calendar(s).

Every UW student performing work in the lab(s) is required to have completed a safety walkthrough. If you have not completed a safety walkthrough, please contact us at urbanwater@torontomu.ca.

What were Urban Water researchers up to this summer?



Urban Water Catchment Science Workshop

In June, Claire Oswald and Christopher Wellen co-hosted an all-day Urban Water Catchment Science workshop at the Centre for Urban Innovation. The goals of the workshop were to gather experts working in urban catchment science in the Greater Toronto Area to: brainstorm pressing research gaps, and discuss opportunities for invigorating collaborative multi-sector research. The workshop was very well received, and has follow up actions for collaborative research. More information can be found on the [web page linked here](#).

Dr. Jim Roy, Research Scientist at ECCC (and UW TMU Board Member) describing his urban groundwater contaminant research (left); Dr. Stephanie Melles UW TMU researcher discussing her aquatic ecology research (right).



Aquatic Ecology Field Course

UW TMU's Stephanie Melles led a two week intensive field course on [Urban Water Ecosystems](#) this summer during the hottest time of the year (July 2-15). This inter-university [Field Biology](#) course was taken by 14 students from universities across Ontario: students and instructor were housed downtown at TMU's [Daphne Cockwell Centre](#). Highlights of the course included water quality sampling in the Don River and Rouge National Park watersheds, zooplankton sampling in an urban lake (Lake Wilcox), and tours of the [RC Harris Water Treatment Plant](#) and [Ashbridges Bay Wastewater Treatment Plant](#).

Students carrying out water quality and ecological sampling in the Don River (left); Students processing Hester-Dendy samplers (aka 'bug hotels') streamside. The Hester-Dendy sampler is anchored to the stream bed or suspended in the water column and allows aquatic macroinvertebrates to colonize the spaces between the sampler plates. Dr. Melles deployed these samplers 4 weeks prior to the field course so that bugs would settle and students would have large populations for lab analyses (bottom right); Students touring the Ashbridges Bay Wastewater Treatment Plant (top right).



International Research Collaboration in Urban Water Drainage

This summer, Professor James Li led an international research team in their investigation of an exciting piece of LID infrastructure (the Toronto Exfiltration System). The goal of the research was to investigate the hydraulic and sediment performance of the infrastructure. The project was awarded \$445,000 by the Collaborative Urban Drainage Research Labs Communities (funded by the EU's Horizon 2020).

A hydraulic flume (45 m x 5 m x 6 m) and model of the Toronto Exfiltration System was built at the Integrated Civil and Infrastructure Research Centre at the University of Sheffield, UK. The international research team included collaborators from 3 continents: Drs. Darko Joksimovic (TMU), May Chui (University of Hong Kong), and Jorge Leandro (University of Siegen, Germany).

In June, the investigation was completed in the UK and now the data analyses continues, being performed by Patelle Fong (TMU) under the supervision of Prof. Li. The project has demonstrated international collaboration in urban drainage research.

Drs. James Li and Darko Joksimovic outside of the ICAIR facility (above).

[Subscribe](#)[Past Issues](#)[Translate](#)

Dr. Li heads back to TMU for another academic year via Platform 9 $\frac{3}{4}$ at King's Cross station. Expelliarmus! (left); Construction of the full-scale Toronto Exfiltration System. (right)

We are proud to announce that the Urban Water Field Vehicle was rebranded with the new TMU logos!



Upcoming Seminar

Dr. Camille Nolasco is joining us on **Tuesday, September 12th @ 10-11am in CUI-219** to speak on “The Nitrogen Footprint: A look at the Agri-Food Chain’s Nitrogen Losses.”

Dr. Camille Nolasco hails from the National Institute for Space Research in Brazil. She is a visiting researcher with the Centre for Studies in Food Security at TMU. Please join us on Tuesday in CUI-219!

[See here for zoom link](#)

Recent Publications of Full Members

Full Members are highly involved in the Centre and are regular contributors to Urban Water research projects and initiatives. Check out their recent publications below and a [full list of publications on the UW website linked here.](#)

Hamza. (2023) Impact of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) on secondary sludge microorganisms: removal, potential toxicity, and their implications on existing wastewater treatment regulations in Canada. *Environmental Science: Processes & Impacts*, Accepted.

Ian Young, J Johanna Sanchez, Binyam Negussie Desta, Cole Heasley, Jordan Tustin. (2023) Recreational water exposures and illness outcomes at a freshwater beach in Toronto, Canada: A prospective cohort pilot study. *Plos one*, 18(6), e0286584.

Elizabeth Holton, Carla Louw, Edward Archer, Tobias Louw, **Gideon Wolfaardt**, Barbara Kasprzyk-Hordern. (2023) Quantifying community-wide antibiotic usage via urban water fingerprinting: Focus on contrasting resource settings in South Africa. *Water Research*, 240, 120110.

Basem S Zakaria, Seyed Mohammad Mirsoleimani Azizi, Biplob Kumar Pramanik, Faisal I Hai, **Elsayed Elbeshbishy**, Bipro Ranjan Dhar. (2023) Responses of syntrophic microbial communities and their interactions with polystyrene nanoplastics in a microbial electrolysis cell. *Science of the Total Environment*, 903(10), 166082.

Judith Castillo-Rodriguez, Pedro D Ortiz, Reeda Mahmood, Robert A Gossage, Jaime Llanos, Darío Espinoza, Ximena Zarate, **Bryan D Koivisto**, Eduardo Schott. (2023) The development of Au-titania photoanode composites toward semiflexible dye-sensitized solar cells. *Solar Energy*, Volume 263, 111955.

Cody A. Ross*, Anna K. Phillips*, Larissa Gospodyn*, **Claire J. Oswald**, **Christopher C. Wellen**, Ryan J. Sorichetti. (2023) Improving the representation of stream water sources in surrogate nutrient models with water isotope data. *Science of the Total Environment*, 892, 164544.

Tyler J. Harrow-Lyle*, Wai Ying Lam*, Erik J.S. Emilson, Robert W. Mackereth, Carl P.J. Mitchell, **Stephanie J. Melles**. (2023) Watershed characteristics and chemical properties govern methyl mercury concentrations within headwater streams of boreal forests in Ontario, Canada, *Journal of Environmental Management*, 345, 118526, <https://doi.org/10.1016/j.jenvman.2023.118526>.

Eric Fries* and **Roxana Sührling**. (2023) The unusual suspects: Screening for persistent, mobile, and toxic plastic additives in plastic leachates. *Environmental Pollution*, 335, 122263, <https://doi.org/10.1016/j.envpol.2023.122263>.

Subscribe

Past Issues

Translate

strategies for pulse loads of SARS-CoV-2: implications for wastewater-based epidemiology. Water Sci Technol, wst2023233. doi: <https://doi.org/10.2166/wst.2023.233>

See Our Full Member Publications

Copyright © 2022 Urban Water TMU, All rights reserved.

Want to change how you receive these emails?

You can update your preferences or unsubscribe from this list.

This email was sent to <<Email Address>>

[why did I get this?](#) [unsubscribe from this list](#) [update subscription preferences](#)
Urban Water Research Centre · 44 Gerrard St E · Toronto, ON M5B 1G3 · Canada

