



LEADERS & PEOPLE 2020 Virtual Symposium: *Water Management in a Changing Climate*

August 31st – September 1st, 2020
Zoom Meeting

A joint virtual symposium for *The LEaders in wAter and watERshed Sustainability* (the LEADERS Program) and the *Network on Persistent, Emerging, and Organic PoLLution in the Environment* (PEOPLE Network). Both are funded by the Collaborative Research and Training Experience (CREATE) Program of Natural Sciences and Engineering Research Council of Canada (NSERC).



Registration is free: <https://www.eventbrite.ca/e/leaders-people-online-symposium-tickets-114699172312>

Symposium Agenda

All time marked as Eastern Time (EST)

Monday, August 31st

- 10:00 – 10:30 AM Introduction by **Dr. Stephen Brown** (LEADERS) and **Dr. Bing Chen** (PEOPLE)
- 10:30 – 11:30 AM Keynote speaker: **Dr. Denise Hardesty**, Principal Research Scientist, Oceans and Atmosphere, Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia; Title: *TBD*
- 11:30 AM -12:30 PM Break
- 12:30 – 2:00 PM Presentation Sessions 1/2
- 2:15 – 4:00 PM Presentation Sessions 3/4
- 4:00 – 4:10 PM Wrap-up day one

Tuesday, September 1st

- 10:45 – 11:45 AM Keynote speaker: **Dr. Corinne Schuster-Wallace**, Associate Professor, University of Saskatchewan, Canada; Title: *TBD*
- 11:45 AM – 12:15 PM Break
- 12:15 – 2:00 PM Presentation Sessions 5/6
- 2:15 – 3:45 PM Roundtable Discussion Sessions
- 3:45 – 3:55 PM Student award announcement and wrap-up day two



Roundtable Discussion Topics *(names are in alphabetical order)*

Session 1

- 1) Indigenous engagement in research and training
Facilitator: **Dale Booth**, President, Innovation Seven; **Jyoti Kotecha**, Associate Director Research & Business Development (BWRC)
- 2) Mitigation of impacts to marine oil spills
Facilitator: **Dr. Uta Passow**, Professor and Canada Research Chair Tier 1 in Biological Oceanographic Processes, Memorial University; **Dr. Atanu Sarkar**, Associate Professor, Faculty of Medicine, Memorial University;

Session 2

- 3) Microplastics and other emerging contaminants in water
Facilitator: **Dr. Louise Meunier**, Assistant Professor, Chemical Engineering, Queen's University; **Dr. Peter Ross**, VP Research and Executive Director, the Coastal Ocean Research Institute (CORI)
- 4) Wastewater based epidemiology
Facilitator: **Dr. Geof Hall**, Associate Director, Beaty Water Research Centre (BWRC); **Dr. Ehssan Koupaie**, Assistant Professor, Chemical Engineering, Queen's University

Contact information

Symposium Chairs

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Presentation Sessions

Monday, August 31st (Day 1)

Session 1 (12:30 – 2:00 PM): Emerging contaminants in the context of environmental engineering

Session Chair: Dr. Baiyu (Helen) Zhang, Associate Professor, Memorial University

Co-Chair: Dr. Wendy Huang, Assistant Professor, University of Calgary

Student Judge: David Patch, PhD student (Supervisor: Kela Weber), Royal Military College of Canada (LEADERS)

Time	Presenter	Institution	CREATE Program	Title
12:30 pm	Qiao Kang	Memorial University	PEOPLE	Fate and transport of metformin in saturated zone: A flow cell experiment and its simulation
12:45 pm	Abhishek Dutta	University of British Columbia	PEOPLE	Comprehensive study of dissolved methane harvesting using omniphobic membrane contactor
1:00 pm	Guihua Dong	Memorial University	PEOPLE	An Integrated MnO ₂ /UV-Activated Persulfate Process for the Removal of Bisphenol A from Water
1:15 pm	Langping Wu	University of Toronto	PEOPLE	Investigation of the phototransformation mechanisms of benzotriazole in surface waters using compound-specific isotope analysis
1:30 pm	Yunwen Tao	Memorial University	PEOPLE	Enhanced gas chromatography-mass spectrometry (GC-MS) based analysis of metformin and guanylurea in water samples
1:45 pm	Bo Liu	Memorial University	PEOPLE	Oxidant competition of offshore produced water substrates in a process of TiO ₂ Nanotube Arrays, UV-LED aided photocatalytic ozonation

Session 2 (12:30 – 2:00 PM): Global and community health

Session Chair: Jyoti Kotecha, Associate Director Research & Business Development (BWRC)

Co-Chair: Sophie Felleiter, Research Coordinator, the LEADERS Program

Student Judge: Dr. Xing Song, Postdoc Fellow, Memorial University (PEOPLE)

Time	Presenter	Institution	CREATE Program	Title
12:30 pm	Jeffrey McLean	McMaster University	PEOPLE	Environmental governance: Persistent organic pollutants and culture
12:45 pm	Sarah Lavallee	Queen's University	LEADERS	Exploring the knowledge, attitudes and behaviours of current well water stewardship



				in rural Ontario communities: Implications for drinking water vulnerability and public health risks
1:00 pm	Om Prakash Yadav	Memorial University	PEOPLE	Spatial and temporal analysis of Persistent Organic Pollutants in the European Union: analysis of the NORMAN database system
1:15 pm	Matthew Senyshen	Queen's University	LEADERS	The impact of land cover changes on land and water surface temperatures in the Cataraqui River Conservation Authority's watershed
1:30 pm	Md Arifur Rahman	Memorial University	PEOPLE	A scoping review on potential human health effects due to exposure to microplastics and knowledge gaps
1:45 pm	Ioan Petculescu	Queen's University	LEADERS	Assessing the relationship of Total Coliforms to E. coli in the context of drivers of microbial contamination of drinking water wells in Ontario

Session 3 (2:15 – 3: 45 PM): Fate, effects and monitoring of various contaminants

Session Chair: Dr. Bas Vriens, Assistant Professor, Queens's University

Co-Chair: Dr. Nasima Chorfa, Research Associate, University of Manitoba

Student Judge: Nahid Hasanshahi, PhD student (Supervisor: Dr. Jianbing Li), University of Northern British Columbia (UNBC) (PEOPLE)

Time	Presenter	Institution	CREATE Program	Title
2:15 pm	Candice Chua	Pacific Environmental Science Centre	PEOPLE	Tiered approach to long-term weathered lubricating oil analysis: GC/FID, GC/MS diagnostic ratios, and multivariate statistics
2:30 pm	Zhiyuan Gao	University of Manitoba	PEOPLE	Reproducing springtime Arctic tropospheric ozone depletion events in an outdoor mesocosm sea-ice facility
2:45 pm	David Patch	Royal Military College of Canada	LEADERS	Gamma Irradiation of PFAS
3:00 pm	Jessica Ollinik	Pacific Environmental Science Centre	PEOPLE	The presence of fatty acids in intertidal biofilm and its importance to migratory shorebirds
3:15 pm	Joseph Monaghan	Vancouver Island University	PEOPLE	Membrane introduction mass spectrometry: a powerful tool to directly assess the fate and distribution of naphthenic acids in water
3:30 pm	Fereshteh Shahhoseini	Memorial University	PEOPLE	Porous thin film devices for environmental water monitoring of persistent organic pollutants



Session 4 (2:15 – 4:00 PM): Water and wastewater

Session Chair: Dr. Stephen Brown, Associate Professor, Queen’s University

Co-Chair Dr. Zhiwen (Joy) Zhu, Postdoc Fellow, Memorial University

Student Judge: Katherine Moir, PhD student (Supervisor: Dr. Brian Cumming), Queen’s University (LEADERS)

Time	Presenter	Institution	CREATE Program	Title
2:15 pm	Matthew Hamilton Fyfe	Queen’s University	LEADERS	Synthetic biology applied to wastewater phytoremediation; primer and prospects
2:30 pm	Rama Pulicharla	Université Laval	PEOPLE	Spatial and temporal variability of seven contaminants of emerging concern in water: a case study in Quebec
2:45 pm	Lauren Halliwell	Queen’s University	LEADERS	Modelling the efficacy of Canadian wastewater stabilization ponds in the face of climate change
3:00 pm	Cristian Ruben Garcia Sanchez	Université Laval	PEOPLE	Monitoring drinking water quality from source to tap: a field study in northern communities of Nunavik
3:15 pm	Max Robinson	Queen’s University	LEADERS	Sediment Dynamics in a mixed primarily gravel-cobble stream (The Salmon River, Ontario, Canada)
3:30 pm	Mahsa Keyvan Hosseini	Dalhousie University	PEOPLE	Study of membrane fouling reduction with mechanical cleaning technology (MCT) during the process of water separation in a newly designed hybrid membrane photobioreactor (HMPBR)
3:45 pm	Parisa Keyvan Hosseini	Dalhousie University	PEOPLE	The study of membrane fouling mitigation using different orifice diameters in a novel hybrid membrane photobioreactor (HMPBR) with microalgae separation

Tuesday, September 1st (Day 2)

Session 5 (12:15 – 2:00 PM): Oil pollution, response and treatment

Session Chair: Carlos Bazan, Assistant Professor, Memorial University

Co-Chair: Dr. Bo Liu, Postdoc Fellow, Memorial University

Student Judge: Zheng Wang, PhD student (Supervisor: Dr. Chunjiang An), Concordia University (PEOPLE)

Time	Presenter	Institution	CREATE Program	Title
12:15 pm	Min Yang	Memorial University of Newfoundland	PEOPLE	Interactions between Microplastics and spilled oil in the marine environment
12:30 pm	Xudong Ye	Memorial University	PEOPLE	An enhanced simulation and optimization coupling approach for supporting marine oil spill responses



12:45 pm	Zhikun Chen	Concordia University	PEOPLE	Use of cellulose-based material in the oil pollution control
1:00 pm	Ethan J. Matchinski	Memorial University	PEOPLE	Assessment of centrifuge and settling separation for oil spill response in an Arctic environment
1:15 pm	Xing Song	Memorial University	PEOPLE	Biomarker traced biodegradation of oil treated by a green dispersant
1:30 pm	Ricardo Borges Baltazar dos Santos Júnior	Universidade Federal da Bahia Campus Ondina	PEOPLE	Mystery of the oil spill off the Brazilian coast in 2019 and remediation biotechnologies
1:45 pm	Jong Jin Lee	Memorial University of Newfoundland	PEOPLE	How is the biodegradation of dispersed oil influenced by the incorporation of oil into aggregates?

Session 6 (12:15 – 2:00 PM): Ecotoxicology

Session chair: Dr. Geof Hall, Associate Director, Beaty Water Research Centre (BWRC)

Co-Chair: Dr. Xiaying Xin, Postdoc Fellow, Memorial University

Student Judge: Lauren Halliwell, MSc (Supervisor: Dr. Pascale Champagne), Queen's University (LEADERS)

Time	Presenter	Institution	CREATE Program	Title
12:15 pm	Yiqi Cao	Memorial University of Newfoundland	PEOPLE	Microbial response towards chemical dispersant application during a marine dilbit spill
12:30 pm	Xiaying Xin	Memorial University	PEOPLE	Insights into the acute and chronic toxicity of triclosan to green microalga chlorococcum sp.: biochemical analyses and roles of environmental factors
12:45 pm	Katherine Moir	Queen's University	LEADERS	Nearshore sedimentary mercury concentrations reflect legacy point sources and variable sedimentation patterns under a natural recovery strategy
1:00 pm	Zoe Armstrong	Queen's University	LEADERS	Historic pollution impacts on benthic invertebrates in the St. Lawrence River at Cornwall, ON and implications for ecosystem management
1:15 pm	Paisley Thomson	Institut national de la recherche scientifique	LEADERS	Endocrine disruptive effects of agricultural retention pond water in the American Toad (<i>Anaxyrus americanus</i>)
1:30 pm	Verena Kalter	Memorial University	PEOPLE	Toxic effects of ingestion of marine oil snow on blue mussels (<i>Mytilus edulis</i>)
1:45 pm	Eden Hataley	Queen's University	LEADERS	Assessing the sorption of the cyanotoxins microcystins to microplastics