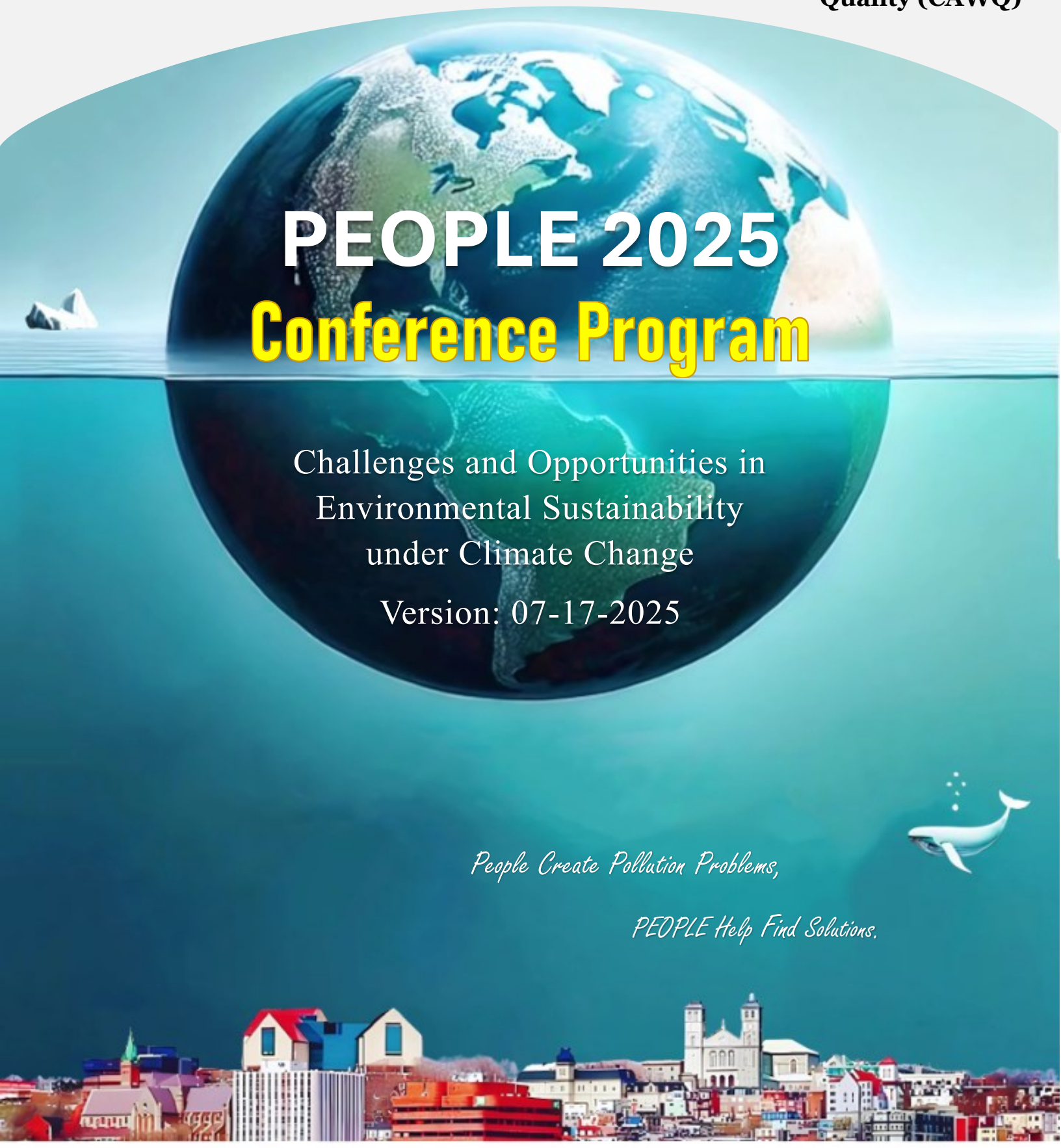
July 21 - 25
St. John's, Canada

2025 Atlantic Symposium of the Canadian Association on Water Quality (CAWQ)



PEOPLE 2025
Conference Program

Challenges and Opportunities in Environmental Sustainability under Climate Change

Version: 07-17-2025

People Create Pollution Problems,

PEOPLE Help Find Solutions.

PEOPLE Network | Memorial University | CAWQ ACQE | UArctic | NSERC CRSNG | Springer | Environmental Systems Research

Welcome Message

We are delighted to welcome you to the PEOPLE 2025 International Conference on "Challenges and Opportunities in Environmental Sustainability under Climate Change," taking place July 21–25, 2025, in St. John's, Newfoundland and Labrador, Canada. This event is held in collaboration with the 2025 Atlantic Symposium of the Canadian Association on Water Quality (CAWQ).

Environmental sustainability remains one of the most urgent and complex challenges facing researchers, engineers, policymakers, and community leaders across the globe. Climate change intensifies these challenges, demanding not only innovative technologies and informed policy but also interdisciplinary collaboration, holistic thinking, and eco-conscious practices. From urban to rural, terrestrial to marine environments, protecting and managing ecosystems in a changing climate requires bold, creative, and coordinated action.

PEOPLE 2025 will provide an inclusive, international platform for participants across natural sciences, engineering, health, social sciences, and the humanities. The conference will showcase over 120 presentations from 11 countries, organized into 20 technical sessions across 14 themes. Attendees will exchange cutting-edge research and practices, generate new ideas, forge meaningful partnerships, and contribute to effective, sustainable solutions to today's environmental challenges.

This event is proudly hosted by the Network on Persistent, Emerging, and Organic Pollution in the Environment (PEOPLE Network). With over 600 members from more than 40 institutions and 50 partner organizations globally, the PEOPLE Network fosters cross-disciplinary, cross-sectoral, and international collaboration. Supported by the NSERC CREATE program, the Network has trained over 100 emerging researchers and professionals, advancing knowledge and capacity in environmental pollution and public health protection.

We encourage all attendees to actively participate in pre-conference workshops, conference sessions, and field trips. Students will have opportunities to compete in the Student Presentation Awards, and selected abstracts will be invited for publication in special issues of partner journals.

We look forward to welcoming you to PEOPLE 2025 in beautiful St. John's, a historic coastal city with over 1,000 years of rich culture and natural beauty. Let us come together to strengthen collaboration and innovation for a more sustainable and resilient future.

Warm regards,

Dr. Howard Alper, O.C., F.RSC (Honorary Chair)

Companion, Order of Canada
Fellow and former President, Royal Society of Canada (RSC)
Distinguished University Professor
Department of Chemistry and Biomolecular Sciences
University of Ottawa, Canada

Dr. Gordon Huang, F.CAE, F.EIC, F.CSCE (Honorary Chair)

Fellow, Canadian Academy of Engineering (CAE)
President, International Society for Environmental Information Sciences (ISEIS)
Professor and Former Canada Research Chair (Tier I)
Executive Director, Institute for Energy, Environment and Sustainability
Communities, Faculty of Engineering and Applied Science
University of Regina, Canada

Dr. Bing Chen, F.CAE, F.EIC, F.CSCE (Conference Chair)

Fellow, Canadian Academy of Engineering (CAE)
Director, PEOPLE Network
Professor and UArctic Research Chair, Department of Civil Engineering
Interim Dean, Faculty of Engineering and Applied Science
Memorial University, Canada
President (2024-25), Canadian Society for Civil Engineering (CSCE)

Dr. Baiyu (Helen) Zhang, F.EIC, F.CSCE (Conference Co-Chair)

Fellow, Engineering Institute of Canada (EIC)
Member, Royal Society of Canada (College)
Professor and Canada Research Chair
Faculty of Engineering and Applied Science
Memorial University, Canada
President, Canadian Association on Water Quality (CAWQ)

People Create Pollution Problems, PEOPLE Help Find Solutions.

MEMORIAL UNIVERSITY 100

LOOKING BACK | LAUNCHING FORTH

COUNTDOWN *to the* CENTENNIAL

Join us on Sept. 17 at noon to start the countdown to Memorial University's 100th anniversary. The event will be live streamed at Signal Hill Campus in the Johnson Insurance atrium and at mun.ca.

mun.ca/100

More than 50 years of excellence, dedication and positive impact.

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Opening Speakers

Dr. Tana Allen
Vice-President (Research) Pro Tempore
Memorial University, Canada

Dr. Howard Alper
Conference Honorary Chair
Distinguished University Professor
University of Ottawa, Canada

Dr. Bing Chen
Conference Chair
Director, PEOPLE Network
Interim Dean, Faculty of Engineering and Applied Science, Memorial University, Canada

Sheilagh O'Leary
Deputy Mayor
City Lead for Environment and Sustainability
City of St. John's, NL, Canada

Dr. Baiyu (Helen) Zhang
Conference Co-Chair
President, Canadian Association on Water Quality (CAWQ)

Plenary Speakers

Dr. Jingxu (Jesse) Zhu, F.CAE, F.RSC, F.EIC, F.CIC

Fellow, Canadian Academy of Engineering (CAE)
Fellow, Royal Society of Canada (RSC)
Distinguished University Professor and Canada Research Chair
Director, Particle Technology Research Centre
Department of Chemical and Biochemical Engineering
Western University, Canada

SCHEDULE: DAY 2, JULY 22, 9:45 NDT[1], FORT WILLIAM SALON A&B

PLENARY KEYNOTE SPEECH: *Research Strategy and Planning – Manipulating Fine Particles for Better Environmental Applications*

Dr. Jesse Zhu is a Distinguished University Professor and Canada Research Chair in the Department of Chemical and Biochemical Engineering, Western University. He received his bachelor degree from Tsinghua University in 1982 and PhD from the University of British Columbia, and then worked for Shell before joining Western in 1993. In 1999, he established the Particle Technology Research Centre and a Research Chair Program. He is a Fellow of Royal Society of Canada, Canadian Academy of Engineering and Engineering Institute of Canada. Dr. Zhu has received many awards including the highest career (R.S.Jane) award from the Canadian Society for Chemical Engineering, the highest (Elsevier Lifetime Achievement) Particle Technology Award from the American Institute of Chemical Engineers, the highest research awards from Western University, and two major medals from Engineering Institute of Canada and Professional Engineers of Ontario. He has also chaired twice the Annual Conference of the Canadian Society for Chemical Engineers and the 2024 Annual Conference of the Canadian Academy of Engineering.

Dr. Zhu has many years of experience in the research area of powder handling, fluidization, and multi-phase flow systems. With 505+ journal publications, 60+ patents, and over 300 graduate students and postdoctoral fellows supervised, he has worked on a very wide range of R&D projects, many from the industry. In addition to fundamental research, he is particularly active in technology development and transfer, with several inventions commercialized or being commercialized.

[1] Newfoundland Daylight Time

Plenary Speakers

Dr. Edward A. McBean, F.CAE, D.WRE, F.CSCE, F.EC, F.IAH, F.AGGS, F.EURASC

Fellow, Canadian Academy of Engineering (CAE)
Fellow, European Academy of Sciences (EURASC)
Professor-Emeritus and University of Guelph Leadership Chair Professor
Former Canada Research Chair (Tier 1), Water Security
University of Guelph, Canada

SCHEDULE: DAY 3, JULY 23, 9:00 NDT, FORT WILLIAM SALON A&B

PLENARY KEYNOTE SPEECH: *Disruption of the Sustainability of Water Resources in the Climate Changing World*.

Dr. Edward A. McBean received his B.A.Sc. at the University of British Columbia and his SM, CE, and PhD, at M.I.T. He is a Fellow of the Canadian Academy of Engineering, and Diplomate, Water Resources Engineering of the American Society of Civil Engineers and recipient of many prestigious academic awards.

Dr. McBean is Professor Emeritus of Water Resources Engineering, and has been a recipient of the Canada Research Chair Tier 1, and a University of Guelph Research Leadership Chair Professor, Water Security, at the University of Guelph. The focus of his research relates to climate change, risk assessment, water security, artificial intelligence, vulnerability characterization and environmental engineering fate and transport. Edward has published four texts, edited 17 books, and published more than 450 papers in the technical literature and presented more than 550 papers at technical meetings.

Special Panel Opening Speaker

Dr. Gordon McBean, C.M, O.Ont, F.RSC, F.AGU, F.AMS, F.IAFoST, F.AAAS

Fellow, Royal Society of Canada (RSC)
Professor Emeritus, Department of Geography & Environment
Research Chair, Institute for Catastrophic Loss Reduction
Western University, Canada
Former President, International Council for Science (ICSU)
Board Chair, Canadian Association of Professionals in Climate Change (CAPCC)
Board Chair, Future Earth, Montreal Hub

SCHEDULE: DAY 3, JULY 23, 13:30 NDT, FORT WILLIAM SALON A&B

SPECIAL PANEL: *Emerging Environmental Challenges and Global Collaborations Under Climate Change*

Dr. Gordon McBean is a Professor in the Department of Geography and Environment at Western University, with a cross-appointment in Political Science. His research focuses on climate change science and policy, natural hazard prediction and mitigation, and the development of weather and environmental prediction systems. Dr. McBean's recent projects include studies on science-policy interactions, particularly in the context of Arctic climate, the predictability and impacts of storms, and the relationship between human health and weather. He is recognized for his leadership in disaster risk reduction and sustainable development, and has contributed extensively to academic literature on climate hazards, disaster risk, and environmental policy.

PANELIST:

Dr. Arja Rautio
Professor and UArctic Emerita Chair
Thule Institute; Faculty of Medicine
University of Oulu, Finland

Dr. Fereidoon Shahidi
Food Science and Technology Addressing Issues of Food Safety and Human Health, Memorial University, Canada

Jessica Smart
Lands & Culture, Manager
North Slave Métis Alliance, Canada

Dr. Haseen Khan
Director, Water Resources Management Division
Department of Environment and Climate Change
Government of Newfoundland and Labrador, Canada

Keynote Speakers

Day 2, July 22, 2025, Session 1, 11:00 NDT, Garrison Room

Dr. Katrin Vorkamp

Professor in Environmental Chemistry
Professor, Department of Environmental Science - Environmental chemistry & toxicology
Professor, Arctic Research Centre - Arctic Research Centre, Roskilde
Aarhus University, Denmark

Title: *PFAS as a Global Problem - Findings from the Arctic and from Europe*

Abstract: Per- and polyfluoroalkyl substances (PFAS) are a complex group of several thousand chemicals defined by the presence of a -CF2- or -CF3 moiety in the molecule. Due to the strong C-F bond, PFAS are extremely persistent in the environment. Three PFAS, perfluorooctane sulfonate (PFOS), perfluorooctanoic acid (PFOA) and perfluorohexane sulfonate (PFHxS), have been classified as Persistent Organic Pollutants (POPs) according to the United Nations Stockholm Convention, based on their persistence, bioaccumulation, toxicity and long-range transport. The group of C9-C21 perfluorocarboxylic acids (PFCAs) is currently under review for the Stockholm Convention. Additional national and regional regulations exist or are being considered, including a restriction proposal of all PFAS in Europe. Their persistence and long-range transport have made PFAS a global problem, including their presence in the Arctic, as documented by the Arctic Monitoring and Assessment Programme (AMAP). Volatile precursors are commonly measured in atmospheric monitoring programmes in the Arctic, indicating atmospheric transport of neutral PFAS that can be oxidized to PFCAs and other highly persistent PFAS. Ionic PFAS can be transported with ocean currents and rivers. In addition, local sources of PFAS have been identified in the Arctic, for example from their use at airport fire training sites. Their bioaccumulation and biomagnification properties lead to high concentrations in Arctic animals, in particular at the top of the food chain. This is of concern because Arctic populations rely on fish and wildlife in their diet. PFAS are omnipresent in the European environment, including hot spots at sites of production or intense use, contaminated sites, resulting from e.g. landfill leachates or use in firefighting, and diffuse pollution. Environmental monitoring has been established in basically all European countries, in addition to some human biomonitoring programmes and many research initiatives. The Horizon Europe Partnership for the Assessment of Risks from Chemicals (PARC) has prioritized PFAS and runs a project on a European PFAS baseline as well as 18 case studies focussing on the role of precursors in PFAS distribution. In Denmark, a national PFAS Research Centre was established in January 2025 to support government actions with scientific knowledge on environmental, food and human health aspects related to PFAS. The complexity of PFAS is a challenge in assessing the extent, development and consequences of PFAS pollution and exposure. New analytical methods have been introduced to complement traditional target analysis by liquid chromatography-tandem mass spectrometry (LC-MS/MS). These include Extractable Organic Fluorine (EOF) determined by combustion-

ion chromatography (CIC) and providing a measure of "PFAS Total". Total Oxidisable Precursor (TOP) assays determine concentrations of perfluoroalkyl acids before and after oxidation, reflective of the amount of precursors in a sample. Non-target and suspect screening techniques based on high resolution mass spectrometry (HRMS) are increasingly used to identify unknown PFAS in a sample. Even though more comprehensive regulations are in the pipeline, efficient methods will still be needed to monitor PFAS in the environment and in humans.

Short bio: Dr. Katrin Vorkamp is a Professor in Environmental Chemistry at Aarhus University in Denmark. She holds a PhD in Environmental Science from the University of Bayreuth in Germany. Her research focuses on the fate of organic contaminants in the environment, including human exposure. For the past 20 years, she has studied per- and polyfluorinated alkylated substances (PFAS), which have garnered significant attention due to their persistence and bioaccumulation, particularly in the context of Arctic pollution. She has coordinated circumarctic assessments in her role as co-lead of the Persistent Organic Pollutants (POP) expert group of the Arctic Monitoring and Assessment Programme (AMAP). PFAS are also a priority in the Horizon Europe projects ArcSolution and the Partnership for the Assessment of Risks from Chemicals (PARC), in which she holds co-leading roles. Additionally, she has been a member of a national Knowledge Task Force on PFAS for the past two years and co-leads the newly established PFAS Research Centre in Denmark.

Day 2, July 22, 2025, Session 2, 11:00 NDT, Signal Room

Dr. Kristin M. Poduska

Professor, Physics and Physical Oceanography, Faculty of Science, Memorial University
Associate Scientific Director, Transforming Climate Action, Ocean Frontier Institute

Dr. Paul Snelgrove

Director, NSERC Canadian Healthy Oceans Network (CHONe II)
Associate Scientific Director, Ocean Frontier Institute
Departmental Science Advisor, Fisheries and Oceans Canada
Research Professor, Department of Ocean Sciences and Biology Department, Memorial University

Title: *The Ocean Frontier Institute at Memorial University: A Proposed Centre to Unite Ocean Research on Safety, Sustainability, and Climate Action in Oceans Environments*

Abstract: The Ocean Frontier Institute (OFI) is a partnership formed to coordinate ocean research and increase collaboration focused on the North Atlantic Ocean. With Dalhousie University as the lead academic institution, and Memorial University as the main founding partner, OFI has built trans-Atlantic international partnerships and delivered research outcomes that have segued from an initial focus on safe and sustainable oceans to a current focus on three jointly-developed research pillars: Net-Zero (Climate, a core focus of Transforming Climate Action (TCA)), as well as Biodiversity, and Bioresources (Fisheries and Aquaculture, a core focus of Safe and Sustainable Development of the Ocean Frontier (SSDOF)). As a primary goal, OFI aims to sustain the historic relationship established by Dalhousie and Memorial by serving as an umbrella organization for academic-led interdisciplinary ocean research in Atlantic Canada and beyond. At Memorial University, OFI aims to continue to catalyze new and champion ongoing coordinated research and training programs broadly related to oceans, linking diverse members of the Memorial community across departments and faculties with each other and with other institutions that advance understanding and sustainable use of the North Atlantic.

Short bio: **Dr. Kris Poduska** is an experimental materials physicist/chemist based at Memorial University of Newfoundland & Labrador (Canada), where she has won research and teaching awards. She has degrees from Carleton College (BA, Physics) and Cornell University (PhD physics). Her research is a blend between physics and chemistry, focusing on understanding structural and physical property relations in solid materials that are in contact with water, focusing how they change as they are produced, used, and stored. Not only can this improve the performance and lifetime of technological materials, but it is also an essential part of improving sustainability and developing effective strategies to mitigate the impacts of climate change. Recent work focuses on solid forms of carbon-rich materials, with research methods relevant for biominerals, geogenic minerals, lab-produced materials, and ancient archaeological materials. She is particularly interested in research problems related to improving environmental sustainability, including their science and social justice aspects. Since 2024, she has been Memorial University's Associate Scientific Director for the Transforming Climate Action research program, (administered under the umbrella of the Ocean Frontier Institute), funded by the Canada First Research Excellence Fund.

Dr. Snelgrove is a Professor of Ocean Sciences and Biology at Memorial University of Newfoundland in Canada. From 2008-2021 he led the Natural Sciences and Engineering Research Council of Canada (NSERC) Canadian Healthy Oceans Network, a national research network that has developed new tools and approaches to support sustainable oceans. He also currently plays the role of Associate Scientific Director of The Ocean Frontier Institute, which gathers researchers in Atlantic Canada and beyond to advance safe and sustainable ocean objectives. From 2003-2013, Dr. Snelgrove held a Canada Research Chair in Boreal and Cold Ocean Systems, and prior to that an NSERC Industrial Chair in Fisheries Conservation. He led the synthesis of the International Census of Marine Life research program, where he was a member of the program's Scientific Steering Committee. Over 350,000 people have viewed his TED Global talk on that program. He frequently participates in workshops and conferences around the world as an invited speaker. In 2013, he was awarded the Timothy Parsons Medal for Excellence in Marine Sciences in Canada, and in 2020 he was appointed Departmental Science Advisor to Fisheries and Oceans Canada. His research focuses on sustainability of biodiversity and functioning of seafloor ecosystems.

Day 2, July 22, 2025, Session 3, 14:30 NDT, Garrison Room

Dr. Feiyue Wang

Professor and Canada Research Chair (Tier 1)
Department of Environment and Geography and Centre for Earth Observation Science
Associate Dean (Research), Riddell Faculty of Environment, Earth & Resources
University of Manitoba, Canada

TITLE: *Cryospheric Chemistry: Biogeochemical Processes in the Earth's Cryosphere*

ABSTRACT: Most chemical reactions in aqueous solution slow down as temperature decreases. Once the solution is frozen, however, certain reactions are known to proceed very differently from their aqueous counterparts, some being dramatically accelerated in rate while others yielding unexpected products. Although the mechanisms of these "cryoreactions" remain poorly known, their importance in stratospheric and tropospheric processes has been long recognized. Evidence is mounting that the Earth's cryosphere (e.g., snow, glacier ice, river/lake ice, sea ice, permafrost, and their adjacent boundary layers) is also much more biogeochemically active than previously thought, affecting not only the storage and transport of chemicals, but also their chemical transformation, bioavailability, and biological effects. In this presentation, I will provide a synopsis of recent progress in the understanding of cryoreactions and cryospheric chemistry, and their implications for the regional and global cycling of carbon and contaminants in a changing climate.

SHORT BIO: Dr. Feiyue (Fei) Wang is Professor and Tier-1 Canada Research Chair in Arctic Environmental Chemistry at the University of Manitoba. He studies the fate and effects of legacy and emerging contaminants in the environment, especially in remote and polar regions. His recent research focuses on mercury as an Arctic and global pollutant, sea ice and cryospheric chemistry, and the interplay between chemical contamination and climate change. Dr. Wang has authored and coauthored more than 190 scientific papers in peer-reviewed journals and books. He was the 2021 recipient of the DIMA award from the Chemical Institute of Canada and holds an Honorary Professorship at Aarhus University (Denmark).

Dr. Wang directs the Churchill Marine Observatory (CMO), the Sea-ice Environmental Research Facility (SERF), and the Ultra-Clean Trace Elements Laboratory (UCTEL). He is also Associate Dean (Research) of the Clayton H. Riddell Faculty of Environment, Earth, and Resources at the University of Manitoba.

DAY 2, JULY 22, 2025, SESSION 4, 14:30 NDT, SIGNAL ROOM

Dr. Manuel Rodriguez

Professor and NSERC Industrial Research Chair
Faculty of Planning, Architecture, Art and Design
Laval University, Canada

TITLE: *Teaching And Research on Water Resources Protection in Vulnerable Communities: The Field Learning Experience in Colombia with Canadian Graduate Students*

Abstract: This presentation will highlight the design and implementation of a teaching-research training conducted in Colombia, South America, about the challenges of water access and protection in vulnerable communities in the Andean region. This is a field learning experience that focuses on the challenges and approaches to managing water and sanitation services in a land-use planning context in vulnerable regions and communities, with limited resources and/or where socio-economically disadvantaged populations live. The field learning experience covers the complete water resource cycle including the supply of drinking water (from its origin at the source to its point of consumption by the citizen) and the management of liquid discharges (human exposure, decontamination, receiving environment and effluent recovery). Particular attention is paid to the links (Nexus) between water resource management and the land (the watershed). The field component focuses on research visits in communities of many sizes, located in varied climates and altitudes (from 250 m to 4200 m) in the tropical region of the Andes Mountain range (Paramo and glacier mountain systems, and associated valleys and plains). Considerable attention is paid to the local impacts of global and climate change on these communities. The talk will illustrate the experience acquired from 2022 to 2025 within the partnership of Université Laval (Quebec), University of Victoria (British-Columbia) and Universidad Cooperativa de Colombia (UCC).

Short bio: Dr. Rodriguez, PhD in Environmental Engineering, is professor of Université Laval, Quebec City, Canada, at the School of Urban and Regional Planning. He holds the NSERC Industrial Research Chair in Management and Surveillance of Drinking Water Quality. The expertise of Dr. Rodriguez revolves around a combination of water engineering, urban & regional planning, and environmental modelling. The value of Dr. Rodriguez's research activities in drinking water quality management has been enhanced through the cooperation with researchers in other disciplines such as urban planning, environmental health and epidemiology, climatology and hydrology, toxicology, urban hydraulics, decision-making processes, environmental modeling, environmental chemistry and microbiology, spatial analysis with geographical information systems, water policy, water economics, participatory processes, and environmental legislation. Recently, he has been strongly involved in various research initiatives concerning access to drinking water for vulnerable communities in Nunavik, Nunavut and Latin America.

Day 2, July 22, 2025, Session 5, 16:30 NDT, Garrison Room

Dr. Caterina Valeo

Professor, Department of Mechanical Engineering
University of Victoria, Canada
Adjunct Professor, Civil Engineering, University of Calgary, Canada

Title: *Remediation of Heavy Metals, Microplastics and Other Emerging Contaminants from Nature-Based Infrastructure*

Abstract: This work explores the potential for vegetated stormwater infrastructure (treed bioretention cells with structural soil) for remediating heavy metals and emerging pollutants in stormwater. Low Impact Development (LID) technologies, such as rain gardens (bioretention cells) and permeable pavements are a type of nature-based stormwater infrastructure that treat polluted urban stormwater

both in terms of water quantity and quality. There is significant body of long-term research on the performance of bioretention cells and permeable pavements for removing a variety of regulated (total suspended solids), and unregulated but conventional (non-emerging) contaminants, with varying success. More and more vegetated structures are moving toward using large woody vegetation such as trees, amended soil blends to improve water quality performance, or structural soil for added structural support under vehicle and pedestrian loads. Structural soil is a mix of 80% aggregate and only 20% organic media blended using a binder. There is very little research into the role of structural in bioretention cell performance. This research reviews the literature and presents insights into how treed bioretention cells with structural soil can eliminate emerging contaminants such as microplastics, PFAS, PAHs and 6ppd-quinone, and to draw inferences on the role of structural soil vs vegetation for eliminating these contaminants. In addition, this talk will present the results of an investigation into the water quality remediation performance of in a treed bioretention cell built with structural soil and subject to car wash wastewater (CWW) loading. CWW is known to contain heavy metals and PAHs and is likely to contain emerging contaminants picked up in vehicle operation. The study and methodology are grounded in a nature-based approach tailored for water treatment particularly suited to remote, rural, and underserved areas, found in developing regions of India and Malaysia. Car wash wastewater contains numerous The research explored tree health and evaluated the performance of the designed treatment field in removing contaminants from CWW. Regarding heavy metal content, the trees did uptake heavy metals from the root system, which successfully migrated to the leaves. But heavy metal concentrations varied between different trees and leaf positions, with some metals exhibiting higher concentrations in the bottom leaves and others showing higher concentrations in the top leaves. The concentrations of heavy metals in the leaves were also influenced by seasonal variations and leaf turnover.

Short bio: Dr. Caterina Valeo is a Professor in Mechanical Engineering at the University of Victoria and a Professional Engineer in the Province of British Columbia. She has a BSc in Physics, a BASc in civil engineering (both from the University of Toronto), and a master's and PhD from McMaster University in the area of water resources engineering. She worked as an academic at the University of Manitoba and the University of Calgary in the areas of geomatics engineering and civil engineering and then moved to the University of Victoria in 2011 to continue her interdisciplinary research in environmental science, engineering and informatics. She has over 200 publications including 3 co-authored books on environmental hydraulics, digital terrain modelling and hydrology, but currently focuses on the impacts of climate change on stormwater management, nature-based solutions for mitigating floods and pollutants, pollutant dispersion modelling in water bodies, and improving measurement and prediction in the environment with data driven methods. She was awarded the 2014 Award of Distinguished Scientist from the International Society for Environmental Information Sciences and is an Honorary Fellow of Engineers Canada.

Day 2, July 22, 2025, Session 6, 16:30 NDT, Signal Room

Dr. Xiangliang Pan

Professor and Dean
College of Environment
Zhejiang University of Technology, China

TITLE: Challeges and Solutions for Monitoring Nanoplastic in Complex Environmental Media

ABSTRACT: Micro-/nano-plastics are emerging contminants with global concern. However, research on pollution, behavior and ecological and environmental risks of nanoplastics are still greatly challenged by the analysis metodology. The challenges are from separation and enrichment of nanoplastic from environmental mdia, removal of non-plastic natural organic nanoparticles, as well as strong interferences and optical diffraction limit in identificaton of nanoparticle plolymers by vibrant spectroscopy. Herein, we developed a methodology overcoming these limits for effective pretreatment, efficient and precise identification and quantification of nanoplastic in environmetal media.

SHORT BIO: Prof. Xiangliang Pan obtained his Ph.D. from Chinese Academy of Sciences in 2023 and worked as a postdoctoral research fellow in Tsinghua University during 2003 and 2005. Thereafter, he served as an associate professor and professor in Chinese Academy of Sciences until 2015. Currently he is a professor at the College of Environment, Zhejiang University of Technology. His research areas cover environmental remediation technology and emerging contaminants including microplastics. He finished over 30 projects funded by MOST, NSFC, CAS and other organizations. He published over 200 papers in international journals including with over 17,000 citations and an H index of 69. He is on the Elsevier list of the most cited authors of Chinese scientists.

DAY 3, JULY 23, 2025, SESSION 8, 9:45 NDT, SIGNAL ROOM

Dr. Huining Xiao

Professor
Department of Chemical Engineering
University of New Brunswick, Canada

TITLE: Functional-Modified Cellulose as Environmentally Friendly Materials to Address Environmental Concerns

ABSTRACT: As the most abundant natural polymer on earth, cellulose has attracted tremendous interests due to its biodegradable features and great potentials for various applications. Over the past decade, we have developed several approaches to render cellulose-based materials multi-functional to address environment concerns. Among them, cellulose-based adsorbents or hydrogels towards the removal of contaminants are particularly appealing. Moreover, smart or responsive carriers originating from cellulose were created for the controlled release of agrochemicals and soil remediation afterwards. Presented herein will mainly cover those areas while such functional materials represent the trend of utilizing environmentally friendly materials to address environmental issues.

SHORT BIO: Prof. Huining Xiao from the University of New Brunswick (UNB) obtained his PhD in Chemical Engineering at McMaster University in Canada in 1995. Prior to joining the UNB in August 2001, he was a Lecturer at the University of Manchester in the UK from 1996 to 2001. Prof. Xiao was elected as the Fellow of Canadian Academy of Engineering (FCAE) in 2015. His research interests cover the functional-modified cellulose, polymers and nanomaterials as environmentally friendly materials for various applications. To date Dr. Xiao has coauthored over 510

SCI journal publications with high impact in relevant areas (Google Scholar Citations > 25,730, H-index 78). Prof. Xiao is one of the Highly Cited Award Recipients in the Cross-Field in 2024 (Web of Science); and the Recipient of 2024 Research.com Materials Science in Canada Leader Award.

DAY 3, JULY 23, 2025, SESSION 9, 11:30 NDT, GARRISON ROOM

Dr. James (Jim) Brydie

Director, Upstream & Environment, CanmetENERG
Natural Resources Canada, Canada

TITLE: *Hazardous and Noxious Substances (HNS): Evolving Research Trends, Priorities, and Opportunities*

ABSTRACT: With the increasing global transportation of chemicals, alternative fuels and plastics, the risk of an accidental release of one or more Hazardous and Noxious Substances (HNS) also increases; typically from ship-sourced spills, road, rail and via pipeline leakage. Unlike conventional oil spills, it is widely recognized that the significant differences in physical and chemical composition of HNS may result in more complex spill scenarios and associated environmental impacts. For example, HNS may float, evaporate, sink, dissolve, or a combination of these, leading to challenges in spill detection, identification, response strategies, environmental impact, and recovery. This presentation will summarize the range of HNS being transported in Canadian and European waters, some of the key challenges faced by spill responders and where scientific research may provide support. Current approaches used to detect and monitor spill behaviour will be discussed along with supporting research and knowledge gaps. The physical and chemical characterization of HNS needed to better understand their environmental behaviour, along with bench-, pilot-, and field-scale spill simulations, calls for important operational, and health and safety information to be gathered and summarized for spill responders. More broadly, these data also support improved contaminant modelling and simulations, the appropriate choice of sensors for spill surveillance, viable options for post-spill recovery, and regulation and policy development. Research opportunities exist in the areas of spill detection, rapid characterization of complex HNS mixtures, testing and use of various sensors and sensor platforms, and increased application of artificial intelligence to interpret and communicate complex data during a spill incident.

SHORT BIO: Dr. James Brydie is an environmental scientist and Director with CanmetENERGY Devon (Natural Resources Canada), leading a team of research scientists and engineers to address environmental issues related to natural resource development.

Dr. Brydie has over 30 years of experience in academia, the nuclear industry, Alberta Provincial and Canadian federal government research roles related to characterizing, monitoring and remediating contaminants in the natural environment; including gases, liquid petroleum products, trace metals and radionuclides. He has developed and used physical and numerical models to simulate and remediate contaminant migration in surface and groundwater ecosystems from bench- to field-scale. Examples include the detection and migration of oil and diluted bitumen leakage from pipelines, ship-sourced oil spill

studies, Hazardous and Noxious Substances (HNS), decontamination of groundwater plumes, the remediation of CO_2 leakage in the subsurface from pilot and commercial-scale Carbon Capture Utilization and Storage (CCUS) sites in Alberta. Developing research areas include underground hydrogen storage and critical mineral studies.

Dr. Brydie's multi-disciplinary Upstream and Environment research team focuses upon bench- to pilot-scale studies where environmental impacts related to natural resource development are simulated. Specific examples include Arctic marine oil spills, deep water blowouts, transmission pipeline leakage to groundwater and the fate, behavior and remediation of selected HNS in fresh water and marine environments. In collaboration with Canadian Federal and Provincial departments, academia, international governments and industry, these research studies result in new methods, improved technologies, and technical support for industry, technology developers and policy makers.

DAY 3, JULY 23, 2025, SESSION 11, 14:00 NDT, GARRISON ROOM

Dr. Kenneth Lee

Scientist Emeritus and Former Senior Science Advisor, Fisheries and Oceans Canada, Canada

TITLE: Canada's Multi-Partner Research Initiative (MPRI): Advancing the Development and Application of Oil Spill Mitigation Technologies

ABSTRACT: While there is an international shift towards the development of clean renewable energy; the production of petroleum hydrocarbons within Canada will remain a key industry for decades to come due to socio-economic factors and global energy demand. To minimize the environmental consequences of oil spills in the aquatic environment, MPRI under Canada's Oceans Protection Plan (OPP) has funded a national/international collaborative research effort to:

1) Develop new oil spill response strategies, and
2) Enhance the level of science-based decision-making in oil spill preparedness and response operations.

This presentation will provide insights on the selection of research priorities by various agencies and an overview of ongoing research in the following subject areas:

- Fate, behaviour, and transport of oil (e.g., understanding natural attenuation, oil droplet formation, oil-particle aggregate formation, and oil emulsification to improve our capability to predict oil fate, transport, and behaviour)
- Development of alternative response measures (e.g., next-generation spill treating agents including shoreline washing agents, dispersants, and additives to enhance in-situ burning)
- Advances in oil detection and monitoring (e.g., development of oil sensors and unmanned surface/subsurface vehicles for oil spill response monitoring)
- Biological effects of oil (e.g., understanding long-term ecological effects at the population and community levels, development of predictive models to support oil spill preparedness, response operations and damage assessments)
- Enhanced methods to recover oil (e.g., advances in booms and skimmers, oil

adsorbant/absorbant and oil decanting technologies)

- Application of science deliverables to support planning and decision-making (e.g., development of decision support tools to provide science-based information on the feasibility and viability of shoreline oil spill countermeasures)

DAY 3, JULY 23, 2025, SESSION 12, 14:00 NDT, SIGNAL ROOM

Dr. Martha Dagnew

Associate Professor
Department of Civil and Environmental Engineering
Western University

TITLE: *Strategies to Achieve Dynamic Resilience in Wastewater Treatment*

ABSTRACT: Wastewater treatment plants (WWTPs) have been integral to protecting source waters by intercepting contaminants such as nitrogen, phosphorus, pathogens, and organic carbon. Over the past 150 years, WWTP development has significantly improved public health, reduced mortality, and minimized environmental pollution. However, these systems now face multiple challenges, including urbanization, population growth, aging infrastructure, and increasingly stringent regulations. New stressors, such as climate change, amplify existing challenges by introducing extreme weather events like heavy rainfall, storms, droughts, and extreme temperatures. These conditions increase wastewater flow variability, alter composition and constituent fractions, shift operating conditions (e.g., temperature), lead to more unauthorized discharges, and cause frequent power and equipment failures. Such dynamic stressors threaten the stability and performance of wastewater systems; however, their full extent and impact remain unclear. Historically, biological WW treatment processes were designed to handle average loads, which has left them unprepared for these dynamic stressors. In cases of extreme events, many plants fail or resort to bypassing biological treatment and discharging untreated or partially treated wastewater into nearby water bodies to prevent biomass washout, leading to significant environmental and public health risks. For instance, in 2023, over 5.4 billion litres of partially treated sewage were bypassed into Ontario waterways from Toronto WWTPs following storm events. Similar contamination events have been reported globally, resulting from dynamic stressors, emphasizing the urgent need for resilient wastewater systems. This presentation will discuss existing WWTP strategies to handle extreme weather events.

SHORT BIO: Dr. Dagnew is an environmental engineering professor and practitioner whose work has made significant contributions to wastewater treatment, integrating fundamental science with practical innovation to advance both academic research and industry applications. Her current research focuses on enhancing the climate resilience of biological wastewater treatment processes and technologies through intensification strategies that address conventional and emerging contaminants—including micro/nano-plastics, PFAS, and nutrients—using a multiscale experimental and modeling platform. She currently serves as Director of the Western-Greenway Advanced Wastewater Technology Test Bay and the Biofilm Engineering and Wastewater Resource Recovery Lab, and is the incoming Director of the Western Water Centre at Western University (London, Ontario, Canada).

Day 3, July 23, 2025, Session 13, 16:00 NDT, Garrison Room

Professor and Canada Research Chair (Tier 1) in Biological Oceanographic Processes
Ocean Sciences, Faculty of Science
Memorial University, Canada

Title: The Formation of Marine Oil Snow and the Consequences for Marine Ecosystems

Abstract: The Deepwater Horizon oil spill in the Gulf of Mexico (GoM) in 2010, triggered a ten-year intense research effort with the goal "to improve societies ability to understand, respond to and mitigate the impacts of petroleum pollution". The ongoing Canadian Multi-Partner Research Initiative builds on this acquired expertise "to advance science-based decision making in oil spill response operations by improving our knowledge of oil spill response and remediation strategies". One of the key insights gained was that even oils less dense than seawater may sink to the deep ocean in association with marine snow. Finding a significant amount of the spilled oil at the deep ocean floor was unexpected and changed oil spill response planning. Transport of oil to the deep ocean has multiple consequences for deep ecosystems and the respective organisms. In the GoM for example, deep sea corals were heavily impacted by the deposition or marine oil snow.

Short bio: Dr. Passow has made significant contributions to our understanding of the ocean's role in carbon sequestration, which influences our climate, and to insights on the distribution of oil spilled into our waters. Her discovery that marine snow efficiently transports oil to the deep seafloor was unexpected and has changed oil spill response planning worldwide. In 2022, she received the prestigious A.G. Huntsman Award for Excellence in the Marine Sciences, and in 2024 was admitted to the Royal Society Canada.

Dr. Passow trained as a field-going Biological Oceanographer in Kiel, Germany, spend a couple of decades at the University of California, Santa Barbara (UCSB, USA), interrupted by seven years at the Alfred Wegener Institute, Germany, and came to join the Ocean Sciences Centre at Memorial University as a Canada Research Chair about 7 years ago. Passow's lab, the AEON lab (Anthropogenic Effects on Oceans around Newfoundland) investigates the distribution and fate of spilled oil and microplastic, as well as the ability of the changing ocean to continue to sequester carbon.

Day 4, July 24, 2025, Session 15, 09:00 NDT, Garrison Room

Dr. Vijaya Raghavan

James McGill Professor, Department of Bioresource Engineering, McGill University, Canada

TITLE: Integrated Hydroponic-Plant Microbial Fuel Cell for Exudate Treatment and Sustainable Lettuce Cultivation

ABSTRACT: This study tested whether microbial fuel cell (MFC) treatment has influence on closed-loop hydroponic system for lettuce cultivation. To assess the effectiveness of water treatment for exudate removal, a deep-water hydroponic system for lettuce cultivation was integrated with an H-PMFC (hydroponic-plant microbial fuel cell). The hydroponic solution was continuously circulated through the cultivation system and MFC in a closed-loop operation, without water changes during the entire experimental period, to treat organic compounds. The performance of H-PMFC was compared with a Positive Control (PC), where the hydroponic solution was replaced every two weeks; a Negative Control (NC), where the solution remained unchanged and untreated; and an MFC group, which has no plants. The results indicated that in the H-PMFC setup, leaf and root production was comparable to the PC setup, whereas the NC setup yielded less biomass. Lettuce plants in both the H-PMFC and PC groups exhibited significantly larger growth dimensions compared to those in the NC group. Additionally, electricity generation in the H-PMFC setup was substantially higher than in the MFC group. Therefore, the H-PMFC system demonstrates significant potential for effectively treating exudates from hydroponic plants.

SHORT BIO: Dr. Vijaya Raghavan obtained his PhD. (Agricultural Engineering) from Colorado State University, his MSc (Agricultural Engineering) from the University of Guelph, and his BEng (Mechanical Engineering) from Bangalore University. Presently, Dr. Raghavan is a Distinguished James McGill Professor and Graduate Program Director, Department of Bioresource Engineering, McGill University, Montreal, Canada. He was Departmental Chair from 1993 to 2004. He is a Fellow of the International Academy of Drying Science and Technology, 2024; Engineering Institute of Canada, 2017; Indian Society of Agricultural Engineers, 2015; Royal Society of Canada (RSC), 2012; Foreign Fellow of the National Academy of Agricultural Sciences, India, 2012; Institution of Engineers India, 2009; American Society of Mechanical Engineers 2000; American Society of Agricultural and Biological Engineers, 2000; Canadian Society for Bioengineering, 2000. Dr. Raghavan was President of Canadian Society for Bioengineering and past President of the Academy of Science of the RSC (2017-2019). He served as the Director of the Royal Society of Canada, 2021-2023. He was a member of the Food Expert Advisory Committee to the Minister of Health, Canada. Dr. Raghavan was appointed as Director of the Academic Committee of International Joint Research Center for Food Safety and Precision Nutrition of Southeast University, China, 2024-2029. He was elected as a Vice President of the International Research Association for Drying Science and Technology (Macao) (IRADSTM), from 2024 to 2027.

DAY 4, JULY 24, 2025, SESSION 16, 09:00 NDT, SIGNAL ROOM

Dr. Arja Rautio

Professor and UArctic Emerita Chair
Thule Institute; Faculty of Medicine
University of Oulu, Finland

TITLE: Sustainable Solutions for Community Health in the Arctic

ABSTRACT: There are around seven million inhabitants in the Arctic, and about one million of these are Indigenous. Most of the Arctic populations live in settlements of more than 5000 people (Jungsberg et al., 2019). Arctic environment is in big change due to climate warming, and permafrost thaw, which have big impacts on the everyday life of 5 million inhabitants living in permafrost regions. Understanding and estimating those effects are vital for policymaking and adaptation actions. The other challenges for health of human and wild-life populations are food and water safety and security, biological invasive species, worldwide circulation of anthropogenic contaminants and existing and new infectious diseases. The most vulnerable are Indigenous peoples, whose diets comprise a large proportion of traditional terrestrial and marine foodstuffs (AMAP, 2021). The growing awareness of the usefulness of the One Health paradigm to improve the ability of Arctic residents, public health agencies, and wildlife resource managers to address existing environmental threats and recognize emerging ones at an early stage. Warming climate and permafrost thaw may influence both contaminant exposure and the spread of zoonotic infectious diseases. Migration from smaller to larger communities and urban centres, is a growing trend in the circumpolar North, and may be accompanied by changes in exposure to pollution. Populations living in the Arctic are exposed to both long-ranged pollution from the southern part of the globe, but also pollution from local sources. In the recent research projects, such as Nunataryuk (https://nunataryuk.org) and ILLUQ (https://illuq.eu), have focused on local contaminated sites and solid waste in the regions of thawing permafrost in the Arctic Canada and Greenland. The ArcSolution project (https://arcsolution.no) focuses on finding solutions in waste management and sewage. Heavy metals, persistent organic pollutants (POPs) and radioactive substances have long ecological half-lives in the Arctic. Local and Indigenous communities are searching for solutions, and transdisciplinary work with combining different knowledges could be useful in this work (Gartler et al, 2025). Concentrations of most POPs and metals are declining in Arctic regions where time trend data exist (AMAP, 2021). However, climate change and new chemicals may change the exposure situation of Arctic populations and wildlife. Epidemiological human disease models are needed, as well as new approaches to integrate existing and future monitoring data. All this needs multi- and transdisciplinary research, including lifetime contaminant accumulation, lifetime exposure to

zoonotic pathogens, and health consequences for wildlife and human consumers.

Short bio: Dr. Arja Rautio is Professor in Arctic Research in the Faculty of Medicine at the University of Oulu (UOULU). Her research focuses on health and wellbeing in the Arctic, climate change and interdisciplinary research ethics. She uses community based participatory research and One Health approaches in the projects funded mainly by Horizon Europe. She has field experience from Northern Canada, Svalbard, Greenland, Russia, and Nordic countries. Dr. Arja is a leader of community health and wellbeing in the on-going research projects of Nunataryuk, ILLUQ, EDCMET, ArcSolution, and Sámi reindeer herders' health and wellbeing. As a medical doctor and toxicologist, she is acting in the human health expert groups (AHHEG and HHAG) under the working groups of Arctic Monitoring and Assessment Programme (AMAP) and Sustainable Development (SDWG) in the Arctic Council. During the Finnish Chairmanship of Arctic Council, she was acting a Chair of the AHHEG. Arja has been the VP Research UArctic and former leader of TN Health and wellbeing in the Arctic. The main educational activities are PhD education and international masters' program on Health and wellbeing in the circumpolar region (leader, 2008-16). She has been a member of the Social and Human Working Group in the International Arctic Science Committee (IASC). Dr. Arja was appointed the director of Thule Institute (2017-23), and Rector in Scientific Affairs of Summer University Central Bothnia (2001-09). She has been an organizer of several international conferences, workshops, and PhD courses. Dr. Arja is the head of Nordic Society of Circumpolar Health, and board member of International Union of Circumpolar Health.

Day 4, July 24, 2025, Session 17, 11:00 NDT, Garrison Room

Dr. Dongxiao Wang

Professor and Dean
School of Marine Sciences
Sun Yat-Sen University, China

Title: Integrating High-Precision Monitoring for Marine Conservation in the Pearl River Estuary

Abstract: Human activities and natural dynamic processes play a crucial role in shaping the ecological environment of estuarine and coastal zones. The Pearl River Estuary Marine Ecological Environment Field Observation and Research Station, from the School of Marine Sciences at Sun Yat-sen University, has been conducting systematic marine ecological monitoring and conservation research, yielding a series of significant scientific achievements. First, the station has leveraged high-precision instruments, including underwater gliders, large-scale mooring observation systems, ocean environmental buoys, and drifting buoys, to conduct long-term observations in the Pearl River Estuary and northern South China Sea. In the waters of Qiao Island, an acoustic monitoring buoy has been newly deployed, successfully recording the acoustic signals of Chinese white dolphins, providing crucial data for studies on their ecological behavior. Additionally, a self-contained hydrophone and CTD device have been

installed on the Hong Kong-Zhuhai-Macao Bridge observation platform to monitor the activity patterns of Chinese white dolphins in freshwater plume front regions. Furthermore, shore-based sea temperature sensors and CTD devices have been deployed at Wailingding Island and Wanshan Island to assess the impact of extreme weather events, such as typhoons, on ocean temperature structures.In terms of ecological monitoring, a coral reef survey in the Gabonese Archipelago has revealed the impacts of marine heatwaves and typhoons on coral bleaching, quantifying coral coverage, bleaching rates, and mortality rates across different regions. The bleaching phenomenon induced by elevated temperatures was particularly pronounced, with bleaching rates reaching up to 37.9% in some areas. Additionally, the station has conducted multiple comprehensive observations in the frontal region of the Pearl River Estuary using the FerryBox system, unmanned surface vehicles, and moored devices, elucidating the impact of freshwater transport on coastal ecosystems and addressing research gaps in estuarine dynamic processes and material transport mechanisms.

Short bio: Dr. Dongxiao Wang is the Dean and a Professor at the School of Marine Sciences, Sun Yat-sen University. He is a physical oceanographer who has long been engaged in research on the variability of the South China Sea–Indian Ocean circulation and its climate impact on adjacent seas. He has made systematic innovations in understanding the South China Sea throughflow, the monsoon-driven Indian Ocean circulation, the long-term variability of the "Eastern Indian Ocean–South China Sea–Western Pacific" circulation, and remote air-sea forcing mechanisms. He has published over 200 SCI papers with more than 7,000 citations.

He previously served as the Director of the State Key Laboratory of Tropical Oceanography and the Director of the China-Sri Lanka Joint Center for Education and Research at the Chinese Academy of Sciences. Currently, he is a member of the CLIVAR/IOC-GOOS Indian Ocean Panel, a member of the Scientific Steering Committee of the International Science Council's SIMSEA program, the Chair of the Marine Scientific Expedition Committee of the China Association for Scientific Exploration, and a board member of several SCI journals.

Day 4, July 24, 2025, Session 18, 11:00 NDT, Signal Room

Dr. Haseen Khan

Director
Water Resources Management Division
Department of Environment and Climate Change
Government of Newfoundland and Labrador, Canada

Title: *Climate Change and Its Impact in Coastal Areas of Newfoundland and Labrador*

Abstract: Newfoundland and Labrador is often called the "Rock", but that does not mean it is invulnerable to hazards such as coastal flooding, erosion, sea level rise, hurricanes and even tsunamis. The historical pattern of settlement in this province was largely driven by the fishing

industry with small settlements spread out along the coastline turning into permanent communities. Newfoundland and Labrador has over 500 coastal communities, over 24,000 structures (houses, businesses, sheds, fishing stages, etc.), over 300 small craft harbours, over 700 municipal wastewater outfalls, hundreds of kilometers of roads, and thousands of power poles, just to name some of the property and infrastructure all located within 60 m of the coastline of the province. Approximately 35,500 people in the province also reside within 60 m of the coastline. Coastal flooding in the province can be due to a combination of high tide, storm surge and waves. Approximately twenty percent of flood events in the province's flood event inventory are classified as coastal flooding. Hurricane Fiona, which struck the province in September 2022, demonstrated the vulnerability of coastal communities in Newfoundland and Labrador to coastal flooding hazards where one person died and over 100 homes were either destroyed or torn down after being deemed unsafe for habitation. With respect to climate change impacts by 2100 in parts of the province, sea level is expected to increase by 100 cm, projected future 1:100 storm surge is expected to exceed 4 m, and the projected future 1:100 storm wave heights are expected to exceed 10 m. This level of coastal flood risk poses a significant danger to many coastal communities in the province particularly to low lying areas and will require both mitigation and adaptation approaches. Parts of the province's coastline are also particularly sensitive to coastal erosion, with erosion rates at some beaches and cliffs higher than 45 cm per year. To combat the risk posed by such coastal hazards, more and more communities are having to build coastal protection infrastructure such as seawalls, sea dykes, jetties, breakwaters and revetments. Combating coastal hazards and establishing better management of coastal areas in Newfoundland and Labrador will not be easy and will require a combination of monitoring, land use planning, funding, physical and natural infrastructure, and policy decisions.

SHORT BIO: Dr. Haseen U. Khan has served as the Director of the Water Resources Management Division with the Department of Environment and Climate Change, Government of Newfoundland and Labrador, Canada, since June 2009.

He represents the Province of Newfoundland and Labrador on numerous national committees focused on drinking water safety, water quality management, dam safety, groundwater management, flood forecasting and mitigation, capacity building, water resources monitoring and management, climate change and environmental protection. Dr. Haseen has held several prominent leadership roles, including Chair of the Canadian Council of Ministers of the Environment (CCME) Water Quality Task Group (2001–2009), Chair of the Municipal Wastewater Effluent Economics and Funding Task Group (2008–2009), and Chair of the CCME Water Management Committee (2017–2019). He also contributed to multiple InfraGuide Project committees (2003–2008). From 2017 to 2023, he represented Newfoundland and Labrador on the CCME Environmental Planning and Protection Committee. Currently, he serves as Vice-Chair of the Canadian Committee on Drinking Water and is a member of the FCM Green Municipal Fund Peer Review Committee for Local Leadership in Climate Change Adaptation (LLCA). In September 2024, he joined the board of the Centre for Affordable Water and Sanitation Technology (CAWST).

Dr. Haseen is also the Guest Editor of a special thematic issue of the Water Quality Research Journal published by the International Water Association (IWA), titled Water Quality Indices: Their Uses in Water Resources, Benefits, and Limitations—A Three-Decade Analysis.

Since 2009, Dr. Haseen has volunteered as an Advisor with Catalyst+ and has lead projects in strategic planning, water governance and environmental protection in Honduras, Columbia, Bolivia, and Grenada, funded by Global Affairs Canada. He served as Project Director for two NATO-funded projects in Egypt and Jordan under its Science for Peace program and was the technical lead for a European Space Agency-funded project in Egypt.

Dr. Haseen is the recipient of several prestigious honors, including the inaugural Public Service Award for Excellence (2001) from the Government of Newfoundland and Labrador, and the Canada Senate 150 Medal (2018) for his contributions to community volunteerism and interfaith bridge-building. He is a member of the Professional Engineers and Geoscientists of Newfoundland and Labrador.

DAY 4, JULY 24, 2025, SESSION 19, 13:30 NDT, GARRISON ROOM

Andrew Niblock

Director
Environmental Services
City of St. John's, NL, Canada

TITLE: *Adapting Water Supply Infrastructure to Climate Change*

ABSTRACT: Climate change poses significant risks to water supply infrastructure through increased variability in precipitation, rising temperatures, and more frequent extreme weather events. Drawing on the City of St. John's recent experience, this presentation examines how our utility is incorporating climate projections into asset management and upgrading aging infrastructure. Emphasis is placed on the approach used when analyzing the effects of climate change and the recommended results to ensure long-term water security.

DAY 4, JULY 24, 2025, SESSION 20, 13:30 NDT, SIGNAL ROOM

Dr. Jan Borm

Full Professor
English Literature
UVSQ/University Paris-Saclay, France
Director
Malaurie Institute of Arctic Research Monaco-UVSQ

TITLE: *The Territory as Source of First Nations' Identities - Linking Nature, Culture and The Climate*

ABSTRACT: Indigenous territories are at the core of numerous contemporary issues, be they political, judicial or environmental, Daniel Chartier and Jan

Borm note in the introduction to a forthcoming collective volume about comparative Indigeneity in the Americas (Presses de l'université du Québec à Montréal): Inuit, Innu, Atikamekw and Mapuche. These first nations have a vision of their territory that transcends conventional notions of ownership or stewardship of natural resources, conceiving of the links of culture, language and the environment as inseparable. As the Atikamekw playwright and academic Véronique Basile Hébert points out in the same volume, "Atikamekw culture and language are constructed by the territory and express the cosmogony of my people by its experience with the territory considered like the source of our cultural specificity, the source of our indigeneity, of our atikamekwicity". This holistic view entails that any deteriorated environment is a cause of suffering and a threat to the indigeneity attached to it. Deterioration of environmental conditions means a lower quality of life, thereby threatening cultural continuity, a key-factor for Indigenous societies to affirm their identity, to continue to recover from the many dramatics impacts of colonialism, and to develop new perspectives of personal and collective satisfaction as well as prosperity. This contribution will look at some recent Indigenous texts published both in French and English to illustrate the congenial link between nature and culture in Indigenous societies of the North, an absolutely essential aspect of their identity that law courts are slowly taking into consideration when it comes to territorial conflicts and Indigenous rights, as one notable example from Argentina goes to show.

Short bio: Dr. Jan Borm is Full Professor in English Literature at UVSQ/University Paris-Saclay, France, where he directs the Malaurie Institute of Arctic Research Monaco-UVSQ. A well-known specialist of travel writing, he has co-edited fifteen collective volumes and published numerous articles on the representation of the Arctic in travel accounts and missionary writing. He is the UArctic Chair in Arctic Humanities and editor-in-chief of the online journal Inter-Nord.

Committee

Organizing Committee

** Alphabetical order by last name below*

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Dr. Faisal Khan, Professor and Department Head, Chemical Engineering, Texas A&M University, USA

Dr. Pu Li, Associate Professor, School of Marine Sciences, Sun Yat-sen University, China

Dr. Manuel Rodriguez, Professor and NSERC Industrial Research Chair, Faculty of Planning, Architecture, Art and Design, Université Laval, Canada

Dr. Peter Ross, Senior Scientist and Director of the New Raincoast Healthy Waters program, Canada

Dr. Atanu Sarkar, Associate Professor, Faculty of Medicine, Memorial University, Canada

Dr. Paul Snelgrove, Professor, Ocean Sciences Centre, Memorial University, Canada

Dr. Feiyue Wang, Professor and Canada Research Chair (Tier 1), Department of Environment and Geography and Centre for Earth Observation Science, University of Manitoba, Canada

Dr. Viviane Yargeau, Professor and Dean, Department of Chemical Engineering, McGill University, Canada

Dr. Xudong Ye, Associate Professor, College of Ecology and Environment, Hainan Tropic Ocean University, China

Dr. Baiyu (Helen) Zhang, Professor and Canada Research Chair, Faculty of Engineering and Applied Science, Memorial University, Canada

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Dr. Zhen (Jason) He, Professor, Department of Energy, Environmental and Chemical Engineering, Washington University in St. Louis, USA

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Dr. Olívia Maria Cordeiro de Oliveira, Professor, Pro Rectory of Research and Postgraduate Studies, Department of Geophysics, Federal University of Bahia, Brazil

Dr. Vijaya Raghavan, James McGill Professor, Department of Bioresource Engineering, McGill University, Canada

Dr. Rehan Sadiq, Professor, Faculty of Applied Science and Engineering; Provost and Vice-President Academic, University of British Columbia (Okanagan), Canada

Dr. Rune Storesund, Executive Director, Center for Catastrophic Risk Management, University of Califronia, Berkeley, USA

Dr. Stanislav Stoyanov, Research Scientist, CanmetENERGY-Devon, Natural Resources Canada, Canada

Dr. Shuguang Wang, Professor, College of Environmental Science and Engineering, Shandong University, China

Dr. Qin Xin, Research Scientist, CanmetENERGY Devon, Natural Resources Canada, Canada

Dr. Xiaying Xin, Assistant Professor, Faculty of Civil Engineering,
Smith Engineering, Queen's University, Canada

Conference Secretariats

Yuanmei Zhang, Program Coordinator, PEOPLE Network, Memorial University, Canada

Hemeihui Zhao, M.Eng Student, Memorial University, Canada

Jiayi Chen, M.Eng Student, Memorial University, Canada

Guihua Dong, Postdoctoral Fellow, Former Coordinator, PEOPLE Network

Workshops

Indigenous Engagement in Research

Led by:

Dale Booth

President & Founder

Innovation 7

SCHEDULE: JULY 21, 10:00 – 12:00 NDT, GARRISON ROOM

Since 2015, Indigenous communities have become increasingly involved in major infrastructure projects, policy development, and research initiatives. This shift has been driven by the Federal and provincial governments' commitment to reconciliation, new inclusion policies, and the Truth and Reconciliation Commission's Calls to Action, which provide clear guidelines on fostering long-term, respectful relationships with Indigenous peoples.

As a result, Indigenous communities have developed engagement protocols and consultation processes to ensure their voices are heard in projects that take place in their traditional territories—including research initiatives. However, with a growing number of engagement requests, researchers must approach communities with cultural awareness, clear communication, and a well-structured methodology.

By the end of this workshop, participants will have a deeper understanding of culturally appropriate engagement strategies, practical tools for structuring their research approach, and insights into how universities and research institutions can build stronger, mutually beneficial relationships with Indigenous communities.

This session is ideal for researchers, academics, policymakers, and professionals looking to enhance their engagement strategies and ensure their projects contribute to positive, long-term partnerships.

innovationseven
INNOVATION FOR SEVEN GENERATIONS

Workshops

Life Cycle Assessment for Supply Chain Decarbonization: From Insight to Action

SCHEDULE: JULY 21, 10:00 – 12:00 & 13:00 – 14:30 NDT, SIGNAL ROOM

Led by:

Dr. Iman Nosoohi

Assistant Professor of Operations Management

Faculty of Business Administration

Memorial University of Newfoundland

In today's business environment, supply chains are under increasing pressure to reduce their carbon footprint and improve environmental performance. Life Cycle Assessment (LCA) helps businesses identify carbon hotspots and implement effective strategies to reduce emissions. In this interactive workshop, participants will learn how to apply LCA to analyze supply chains' environmental footprints and develop decarbonization strategies.

By the end of this workshop, participants will be able to:

- Explain the foundations of LCA and its applications.
- Identify databases, standards, and software for implementing LCA.
- Understand the connection between LCA and supply chain decarbonization.
- Develop decarbonization strategies based on LCA results.

No prior knowledge of LCA or supply chain decarbonization is required. The workshop is designed to ensure that participants—including researchers and professionals from diverse backgrounds—can follow and engage.

MEMORIAL UNIVERSITY

Workshops

X-ray Absorption Spectroscopy (XAS): A Molecular Scale Element-Specific Approach in Environmental Sustainability

Led by:

Dr. Ning Chen

Senior Scientist and Beamline Responsible

Canadian Light Source (CLS)

SCHEDULE: JULY 21, 13:00 – 16:00 NDT, GARRISON ROOM

One of the greatest challenges in environmental sustainability research is achieving an element-specific molecular-scale understanding of complex systems. X-ray Absorption Spectroscopy (XAS), one of the most widely applied synchrotron techniques, offers a unique capability to probe local structural environments at the nano to sub-nano scale with an exceptional resolution of ~0.02 Å.

This workshop will introduce XAS to the environmental sustainability research community, covering its principles, unique resolution and capabilities, and diverse applications in studying crystalline and amorphous systems. Participants will gain insights into the synchrotron-based XAS facilities available in Canada, particularly at the Canadian Light Source, and explore a roadmap for XAS-driven research.

The session will be structured into two parts:

Introduction to XAS: Principles, capabilities, and case studies highlighting its role in environmental sustainability research.

Advanced Applications: In-depth case studies demonstrating XAS's ability to detect structural variations at the nano scale, including single-atom surface interactions, element coexisting mechanisms, polymorphism effects, and speciation in complex systems.

This workshop is designed for researchers in environmental sustainability seeking to expand their analytical toolbox with synchrotron-based XAS techniques. No prior experience in XAS is required, and all are welcome to participate.

Canadian Light Source | Centre canadien de rayonnement synchrotron

Special Session 1:

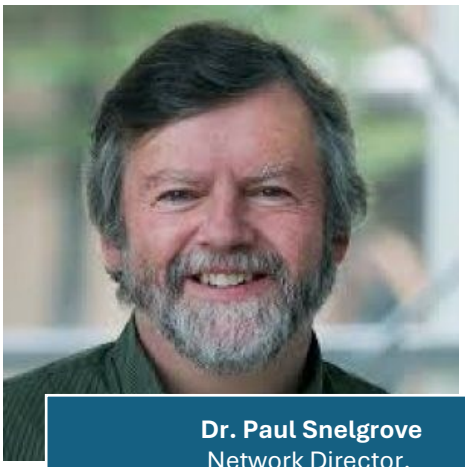
Ocean Frontier Institute: Safety, Sustainability, and Climate Action in Oceans Environments

SCHEDULE: DAY 2, JULY 22, SESSION 2, 11:00 – 12:30 NDT, GARRISON ROOM

SESSION OVERVIEW: This session explores the critical role of oceans in climate change, focusing on the latest research and innovations in oceanography and climate science. Join us to discuss how oceans influence global climate systems and what actions we can take to mitigate climate impacts.

Organized and chaired by:

Dr. Kristin M. Poduska
Professor, Physics and Physical Oceanography, Faculty of Science, Memorial University
Associate Scientific Director
Transforming Climate Action, Ocean Frontier Institute



Dr. Paul Snelgrove
Network Director,
NSERC Canadian Healthy Oceans, Network (CHONe II) Associate
Associate Scientific Director,
Ocean Frontier Institute
Departmental Science Advisor, Fisheries and Oceans Canada
Research Professor, Department of Ocean Sciences and Biology Department, Memorial University

Dr. Kris Poduska is an experimental materials physicist/chemist based at Memorial University of Newfoundland & Labrador (Canada), where she has won research and teaching awards. She has degrees from Carleton College (BA, Physics) and Cornell University (PhD physics). Her research is a blend between physics and chemistry, focusing on understanding structural and physical property relations in solid

materials that are in contact with water, focusing how they change as they are produced, used, and stored. Not only can this improve the performance and lifetime of technological materials, but it is also an essential part of improving sustainability and developing effective strategies to mitigate the impacts of climate change. Recent work focuses on solid forms of carbon-rich materials, with research methods relevant for biominerals, geogenic minerals, lab-produced materials, and ancient archaeological materials. She is particularly interested in research problems related to improving environmental sustainability, including their science and social justice aspects. Since 2024, she has been Memorial University's Associate Scientific Director for the Transforming Climate Action research program, (administered under the umbrella of the Ocean Frontier Institute), funded by the Canada First Research Excellence Fund.

Dr. Snelgrove is a Professor of Ocean Sciences and Biology at Memorial University of Newfoundland in Canada. From 2008-2021 he led the Natural Sciences and Engineering Research Council of Canada (NSERC) Canadian Healthy Oceans Network, a national research network that has developed new tools and approaches to support sustainable oceans. He also currently plays the role of Associate Scientific Director of The Ocean Frontier Institute, which gathers researchers in Atlantic Canada and beyond to advance safe and sustainable ocean objectives. From 2003-2013, Dr. Snelgrove held a Canada Research Chair in Boreal and Cold Ocean Systems, and prior to that an NSERC Industrial Chair in Fisheries Conservation. He led the synthesis of the International Census of Marine Life research program, where he was a member of the program's Scientific Steering Committee. Over 350,000 people have viewed his TED Global talk on that program. He frequently participates in workshops and conferences around the world as an invited speaker. In 2013, he was awarded the Timothy Parsons Medal for Excellence in Marine Sciences in Canada, and in 2020 he was appointed Departmental Science Advisor to Fisheries and Oceans Canada. His research focuses on sustainability of biodiversity and functioning of seafloor ecosystems.

Special Session 2:

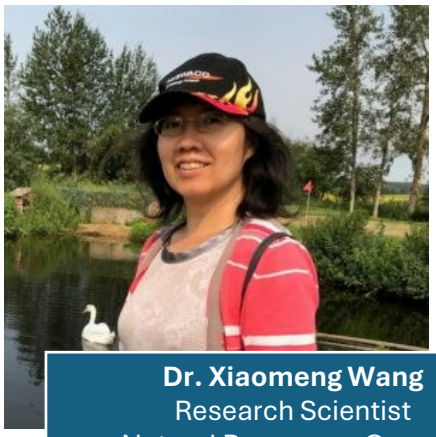
Oilfield Water and Wastewater Treatment – Focusing on Emerging Contaminants and Resource Development

SCHEDULE: DAY 3, JULY 23, SESSION 7, 9:45 – 11:00 NDT, GARRISON ROOM

SESSION OVERVIEW: Unconventional oil and gas development consumes a significant amount of water. After use, highly contaminated water is either stored onsite or disposed in deep wells. Understanding the environmental fate and behavior of emerging contaminants in the various streams of oilfield wastewater from unconventional oil and gas industry is essential to serve the needs of environmental stewardship for resources development. In this special session, we invite presentations that will advance our understanding of the fate and effects of hydrocarbon production (including surface mining and in situ oil sands development as well as hydraulic fracturing operations) and oil transport on aquatic ecosystems.

Advanced data analytics, combining with field sampling and instrumental analysis are highly recommended. Case studies of accidental oil and oilfield wastewater spills in natural water bodies and experimental spills in model ecosystems are of particular interest to this session. We also welcome presentations that will discuss mitigation strategies to reduce potential environmental impacts of the petroleum industry, or propose effective monitoring approaches and techniques appropriate for aquatic ecosystems.

Organized and chaired by:



Dr. Xiaomeng Wang
Research Scientist
Natural Resources Canada

Dr. Xiaomeng Wang received her PhD degree in Analytical Chemistry from University of Toronto, MEng degree in Environmental Engineering from University of Alberta and BSc degree in Chemistry from Jilin University in China. Since 2008, Dr. Wang has worked as a Research scientist at CanmetENERY Devon, Natural Resources Canada. She has extensive experience in leading research programs on wastewater treatment, contaminant analysis, and environmental impact studies. Her expertise spans chemistry, environmental engineering, and natural resource/environmental management. Over the years, Dr. Wang has collaborated with colleagues and partners both in academia and industry, and authored numerous peer-reviewed journal papers, book chapters, scientific reports, and conference presentations.

Special Session 3:

Strengthening Emergency Response Measures for Hazardous and Noxious Substance Spills in Aquatic Ecosystems

SCHEDULE: DAY 3, JULY 23, SESSION 9, 11:30 – 13:00 NDT, GARRISON ROOM

SESSION OVERVIEW: The global demand and transportation of goods classified as Hazardous and Noxious Substances (HNS), which includes alternative and emerging fuels, chemicals, plastics and other petroleum products, is steadily increasing. However, knowledge gaps remain regarding the spill behaviour, potential short term ecological impacts and longer-term fate of these substances when accidentally released into aquatic environments. Environments of interest include marine waters (temperate and Arctic) and freshwaters systems such as rivers, lakes, and wetlands.

This technical session will include presentations that deepen our understanding of HNS spills as a function of their physical, chemical and microbiological properties, supporting the development of novel emergency response measures in aquatic ecosystems. We will focus on presentations that showcase: (*i*) modeling efforts aimed at improving strategies for HNS response, monitoring, and remediation; (*ii*) case studies detailing accidental HNS spills in natural water bodies and spill response approaches taken; and (*iii*) innovative monitoring approaches and advanced analytical techniques for detecting HNS in aquatic ecosystems. These topics will provide valuable information as well as drawing attention to research gaps and opportunities across the PEOPLE network.

Organized and chaired by:

Dr. James Brydie
Research Director
Natural Resources Canada

Dr. Qin Xin
Research Scientist
Natural Resources Canada

Dr. James Brydie is an environmental scientist and Director with CanmetENERGY Devon (Natural Resources Canada), leading a team of research scientists and engineers to address environmental issues related to natural resource development.

Dr. Brydie has over 30 years of experience in academia, the nuclear industry, Alberta Provincial and Canadian federal government research roles related to characterizing, monitoring and remediating contaminants in the natural environment; including gases, liquid petroleum products, trace metals and radionuclides. He has developed and used physical and numerical models to simulate and remediate contaminant migration in surface and groundwater ecosystems from bench- to field-scale. Examples

include the detection and migration of oil and diluted bitumen leakage from pipelines, ship-sourced oil spill studies, Hazardous and Noxious Substances (HNS), decontamination of groundwater plumes, the remediation of CO_2 leakage in the subsurface from pilot and commercial-scale Carbon Capture Utilization and Storage (CCUS) sites in Alberta. Developing research areas include underground hydrogen storage and critical mineral studies.

Dr. Qin Xin joined the CanmetENERGY Devon (CED) Institute under Natural Resources Canada as a research scientist in 2013. She is a Registered Professional Engineer in Alberta, Canada. During her career, she has worked on multiple projects, which cover oil spill research projects and unconventional crude oil processing and upgrading technology development. Gained information is used to inform federal policies and regulations to improve the safety and effectiveness of crude oils, hazardous and noxious substances transportation and spill response in Canada. Currently Dr. Xin is leading the hazardous noxious substances (HNS) research at CED under Oceans Protection Plan 2.0 program to fill identified knowledge gaps to support and strengthen HNS incident response and remediation in Canadian waters.

Special Session 4:

Plastics in the Environment: Sources, Transport, Fate, and Effects

SCHEDULE: DAY 3, JULY 23, SESSION 13, 16:00 – 17:30 NDT, GARRISON ROOM

SESSION OVERVIEW: Plastic pollution is adversely impacting the Earth's ecosystems, wildlife, and even humans. Their negative effects are expected to worsen over time as plastic production increases. In order to assess the state of contamination of our environment by plastics and suggest solutions, we need a thorough understanding of how plastic pollution is generated, how it travels in soil, freshwater, and marine environments, and what types of effects it poses. This special session invites submissions pertaining to the sources, transport, fate, and effects of plastics and micro/nano plastics, including but not limited to field sampling, laboratory experimentation, modelling, and remote sensing studies. Our hope is to encourage dialogue surrounding this issue so that we can advance the state of knowledge of the field, and work together towards possible solutions.

Organized and chaired by:

Dr. Min Yang
Banting Postdoctoral Fellow

Dr. Xia (Alice) Zhu
Banting Postdoctoral Fellow

Dr. Min Yang is a Banting Postdoctoral Fellow at Memorial University, where she obtained her PhD. in Environmental Engineering. Her research focuses on the transport and fate of microplastics in marine environments and their interactions with organic contaminants, including oil, antibiotics, and plastic additives. She has passion for exploring the role of marine bacteria in degrading microplastic-related co-contaminants and assessing their effects on marine organisms. She developed a comprehensive framework to evaluate the formation, transport, and fate of microplastic-oil-dispersant agglomerate (MODA), a newly identified oil-related agglomerate, in marine environments. Her work provides valuable insights for oil spill response strategies and advances scientific understanding of microplastic and oil interactions—an area previously overlooked.

Dr. Xia (Alice) Zhu is an environmental scientist and Banting Postdoctoral Fellow studying plastic pollution at Memorial Univeristy in the Department of Ocean Sciences. She uses a combination of field sampling, experimentation, and modelling approaches to answer questions pertaining to the transport, fate, and effects of plastic pollution in the global ocean. Alice is heavily involved in environmental advocacy at the local, national, and international levels and was named a Top 30 Under 30 Sustainability Leader by Corporate Knights in 2023.

Special Topic Discussion:

Future-ready Biological Water Resource Recovery Technologies in the Context of Climate Change

SCHEDULE: DAY 3, JULY 23, SESSION 12, 14:00 – 15:30 NDT, SIGNAL ROOM

SESSION OVERVIEW: As climate change intensifies, innovative approaches to wastewater management and water resource recovery are urgently needed. This session will convene professors, students, and emerging researchers to explore cutting-edge developments in biological treatment processes aimed at fostering resilience and sustainability. Key topics include but not limited to:

- Novel biological treatment reactors (biofilms, granular sludge systems, algal reactors, etc.)
- AI and machine learning for performance optimization
- Degradation mechanisms for specific pollutants
- Enhancing system resilience under shock loads or adverse climate conditions
- Off-grid and remote community solutions
- Lifecycle assessment (LCA) of emerging technologies
- Real-world case studies demonstrating success in diverse conditions

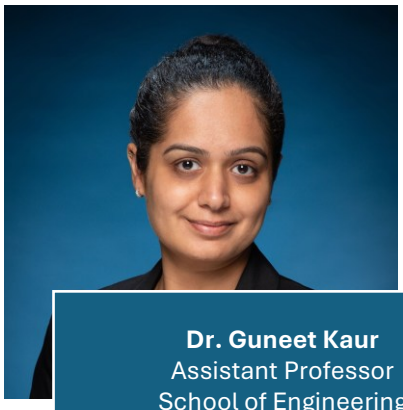
Organized and chaired by:

Dr. Jinkai Xue
Associate Professor
University of Regina

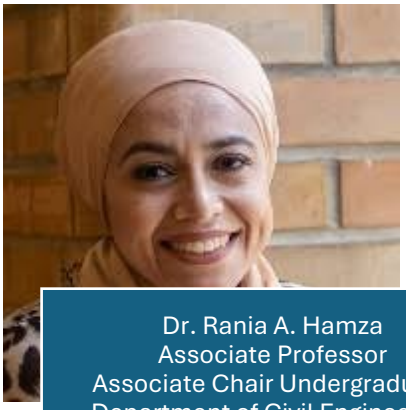
Dr. Oliver Iorhemen
Assistant Professor
University of Northern British Columbia

Dr. Zoe Li
Associate Professor
Faculty of Civil Engineering
McMaster University

Dr. Martha Dagnew
Associate Professor
Department of Civil and Environmental Engineering
Western University



Dr. Guneet Kaur
Assistant Professor
School of Engineering
University of Guelph



Dr. Rania A. Hamza
Associate Professor
Associate Chair Undergraduate
Department of Civil Engineering
Toronto Metropolitan University

Special Training Session:

Science & Engineering Entrepreneurship

SCHEDULE: DAY 4, JULY 24, 15:30 – 17:30 NDT, FORT WILLIAM SALON A&B

SESSION OVERVIEW: Translating the university's scientific and technological advances into value-creating products and services is increasingly becoming a priority for both academic institutions and funding agencies. However, turning these innovations into market-ready solutions and successful businesses is a challenging and complex process. This workshop will provide participants with a systematic framework for initiating, planning, executing, and closing a translational research and development project aimed at commercializing research outcomes. Additionally, the workshop will delve into the essential aspects of the entrepreneurial process, including venture creation and the lean start-up approach. This iterative process begins with identifying a business opportunity (problem), moves on to conceiving a business idea (solution), assessing the idea, developing a business model, and culminates in launching and growing a sustainable business.

Organized and chaired by:

Dr. Carlos Bazan
Associate Professor
Faculty of Engineering and Applied Science
Memorial University, Canada

Dr. Carlos Bazan is an Associate Professor of Technology Entrepreneurship at Memorial University, cross-appointed to the Faculty of Engineering and Applied Science. His research focuses on entrepreneurship, small business, technology transfer and commercialization, new product development, and innovation ecosystems. With a background in civil engineering, business administration, and computational science, Dr. Bazan brings a unique interdisciplinary perspective to his work. He is particularly interested in translating academic research into successful commercial ventures through translational research and development. Outside academia, he has extensive C-level management experience in both for-profit and not-for-profit sectors

Agenda

Please visit our conference website on Fourwaves for the most up-to-date program schedule: https://event.fourwaves.com/people2025/pages

Note: The program is updated daily. We encourage all participants to check the website regularly for the latest information on sessions, speakers, and other important announcements.

Conference Highlights	
Day 1, July 21, 2025	**Workshops**
Day 2, July 22, 2025	**Opening Ceremony, Plenary Keynote, Special/ Technical Sessions, Special Panel Discussion, HQP Social Night**
Day 3, July 23, 2025	**Plenary Keynote, Special/ Technical Sessions, Poster Onsite Q&A Session**
Day 4, July 24, 2025	**Technical Sessions, Special Training Session, Reception, Banquet (Award Ceremony and Closing)**
Day 5, July 25, 2025	**Field Trip**

🎓 Student Presenter
Time Zone: Newfoundland Daylight Time (NDT)

Day 1 Monday, July 21, 2025		
09:00 – 10:00	**Conference Registration** [Pre – function Area]	
10:00 – 12:00	[Garrison Room] **10:00 – 12:00 Workshop 1**	[Signal Room] **10: 00 – 12:00 Workshop 2**
	Indigenous Engagement in Research **Dale Booth** Innovation 7, Canada	*Life Cycle Assessment for Supply Chain Decarbonization: From Insight to Action* **Iman Nosoohi** Memorial University, Canada
12:00 – 13:00	**Lunch** [Fort William Salon A&B]	
13:00 – 16:00	**13:00 – 16:00 Workshop 3**	**13: 00 – 14:30 Workshop 2 (Continue)**
	X-Ray Absorption Spectroscopy (XAS): A Molecular Scale Element-Specific Approach in Environmental Sustainability **Ning Chen** Canadian Light Source (CLS), Canada	*Life Cycle Assessment for Supply Chain Decarbonization: From Insight to Action* **Iman Nosoohi** Memorial University, Canada

Day 2 Tuesday, July 22, 2025

08:00 – 09:00	**Conference Registration** [Pre – function Area]	
09:00 – 09:45	**Opening Ceremony** [Fort William Salon A&B]	
09:45 – 10:30	**Plenary Keynote** [Fort William Salon A&B] *Research Strategy and Planning – Manipulating Fine Particles for Better Environmental Applications* **Jingxu (Jesse) Zhu** Western University, Canada	
10:30 – 11:00	**Refreshment Break** [Fort William Salon A&B]	
11:00 – 12:30	[Garrison Room] **Session 1** **Emerging Contaminants (1)**	[Signal Room] **Session 2 (Special Session)** **Ocean Frontier Institute: Safety, Sustainability, and Climate Action in Ocean Environments**
	/Keynote/ *PFAS as A Global Problem – Findings from the Arctic and from Europe* **Katrin Vorkamp** Aarhus University, Denmark	***/Keynote/*** *The Ocean Frontier Institute at Memorial University, Canada: A Proposed Centre to Unite Ocean Research on Safety, Sustainability, and Climate Action in Oceans Environments* **Kris Poduska and Paul Snelgrove** Memorial University, Canada
	Incorporation and Distribution of Polycyclic Aromatic Hydrocarbons in Sea-Ice: An Outdoor Microcosm Study **Katarzyna Polcwiartek** University of Manitoba, Canada	*The IceShark – An Innovative Method of Capturing Plankton under the Ice* **Eleanor Barry** Memorial University, Canada
	Inhibitory Mechanism of Microplastics on Carbon Fixation in Microalgae in the Lake Environment **Xixi Li** Chinese Research Academy of Environmental Sciences, China	*Assessing Structural Differences in A Key Marine Calcifier in the Northwest Atlantic* **Jake J. Breen** Memorial University, Canada
	Atmospheric Deposition of PFAS in Lyon Soil: Mapping the Influence of Industrial Activities and Background Contamination **Toyin Dunsin Saliu** University of Montreal, Canada	*Wave Climate Change Assessment over Newfoundland's East Coast: Methodology and Projections* **Sanaz Mosayebi** Memorial University, Canada
	Key Findings on the Spatial Distribution of A Diverse Range of PFAS in the St. Lawrence River and Major Tributaries **Termeh Teymoorian** University of Montreal, Canada	*Sinking vs. Suspended: How Phaeocystis Blooms Shape Particle Composition in the Labrador Sea* **Carolina Cisternas-Novoa** Memorial University, Canada
12:30 – 13:30	**Lunch** [Fort William Salon A&B]	

Day 2 Tuesday, July 22, 2025

13:30 – 14:30	**Special Panel Discussion** [Fort William Salon A&B] Emerging Environmental Challenges and Global Collaborations under Climate Change **Gordon McBean** *Western University, Canada*	
14:30 – 15:45	[Garrison Room] **Session 3** **Emerging Contaminants (2)**	[Signal Room] **Session 4** **Water Resources & Quality Management (1)**
	/Keynote/ *Cryospheric Chemistry: Biogeochemical Processes in the Earth's Cryosphere* **Feiyue Wang** University of Manitoba, Canada	***/Keynote/*** *Teaching and Research on Water Resources Protection in Vulnerable Communities: The Field Learning Experience in Colombia with Canadian Graduate Students* **Manuel J. Rodriguez** Université Laval, Canada
	Microplastics in Ice: Transformation and Environmental Implications in Cold Regions **Zhikun Chen** Concordia University, Canada	*Implementing Wastewater Surveillance for COVID-19: Insights from Newfoundland and Labrador's Integrated Public Health Approach* **Hongjing Wu** Government of Newfoundland and Labrador
	Impact of Plastic Additives on Microplastic Aging During Ozonation **Anran Wang** 🎓 Memorial University, Canada	*From Threats to Solutions: A Decision-Making Methodology for Protecting Drinking Water Sources in Québec, Canada* **Rosalie Dumas** 🎓 Université Laval, Canada
	Evaluating Microplastic Contamination in Wastewater and River Systems **Katarzyna Jaszczyszyn** European Regional Centre for Ecohydrology PAS, Poland	*Quantifying Uncertainty in Urban Hydrological Models and Exploring AI-Based Prediction: A Case Study in the Saanich Area* **Zhonghao Zhang** 🎓 University of Victoria, Canada
15:45 – 16:30	**Refreshment Break** [Fort William Salon A&B]	

Day 2 Tuesday, July 22, 2025

16:30 – 18:00	[Garrison Room] **Session 5** **Emerging Contaminants (3)**	[Signal Room] **Session 6** **Water Resources & Quality Management (2)**
	/Keynote/ *Remediation of Heavy Metals, Microplastics and Other Emerging Contaminants from Nature-Based Infrastructure* **Caterina Valeo** University of Victoria, Canada	*/Keynote/* *Challenges and Solutions for Monitoring Nano-Plastics in Complex Environmental Media* **Xiangliang Pan** Zhejiang University of Technology, China
	Machine Learning-Enhanced SR-FTIR Imaging Reveals Molecular Disruptions from Face Mask and PBDE Co-Contamination in Marine Ecosystems **Xing Song** Memorial University, Canada	*How Drinking Water Systems Can Adapt to Climate Change from Source to Tap?* **Cynthia Compaoré** Université Laval, Canada
	To Explore Distribution, Diffusion Regularity and Influencing Factors of Antibiotic Resistance Genes in the Water Transfer Chain from Luanhe River to Tianjin based on Metagenomics **Sheng Chang** Chinese Research Academy of Environmental Sciences, China	*Degradation Mechanism of Typical Non-Steroidal Anti-Inflammatory Drugs in Water by A Novel UV/Monochloramine Advanced Oxidation Process* **Xiang Tu** Chinese Research Academy of Environmental Sciences, China
	Transport of Microplastic and Antibiotic Co-Contaminants in Tidal Zones **Hemeihui Zhao** Memorial University, Canada	*Decision Support Tools for Drinking Water Production from Source to Treatment* **Christian Ortiz Lopez** Université Laval, Canada
	What Drives High Concentrations, Low Diversity and Patchy Distribution of Microplastic in a Marine Bay **Uta Passow** Memorial University, Canada	*Improving Access to Safe Water in Palafitic Communities in Colombia* **Cristian Ruben Garcia Sanchez** Université Laval, Canada
18:30 – 21:00	**HQP Social Night**	

Day 3 Wednesday, July 23, 2025

08:00 – 09:00	**Conference Registration** [Pre – function Area]	
09:00 – 09:45	**Plenary Keynote** [Fort William Salon A&B] *Disruption of Sustainability of Water Resources in the Climate Changing World* **Edward A. McBean** University of Guelph, Canada	
09:45 – 11:00	[Garrison Room] **Session 7 (Special Session)** **Oilfield Water and Wastewater Treatment – Focusing on Emerging Contaminants and Resource Development**	[Signal Room] **Session 8** **Water and Wastewater Treatment (1)**
	Utilizing Petroleum Coke for the Treatment of Hydraulic Fracturing Flowback and Produced Water **Xiaomeng Wang** Natural Resources Canada	***/Keynote/*** *Functional-Modified Cellulose as Environmentally Friendly Materials to Address Environmental Concerns* **Huining Xiao** University of New Brunswick, Canada
	Efficiency of Solar-Driven Tin Oxide for Treatment of Real Oil Sands Process Water **Hadi Mokarizadeh** University of Alberta, Canada	*Application of Biocarbon Materials in Wastewater Treatment* **Sophia Quan He** Dalhousie University, Canada
	Physicochemical and Behavioral Changes of Oil during Weathering Processes in Freshwater Wetland Mesocosms **Bo Liu** Lake Superior State University, U.S.	*A Systematic Review of Ammonia Removal via Simultaneous Nitrification and Denitrification in Membrane Aerated Biofilm Reactor Systems* **Rebecca Vesuwe** University of Northern British Columbia, Canada
	Remediation Technologies and Case Studies for Refined Oil Contaminated Sites **Zhansheng Wang** CNPC Research Institute of Safety & Environment Technology, China	*Aerobic Granular Sludge: A Resilient Solution for Extreme Ethylene Glycol Shock in Wastewater Treatment* **Parnian Mojahednia** University of Regina, Canada
	High-Efficiency Eugenol-Polysiloxane-Graphene Oxide Nanocomposite for Marine Epoxy Coating Protection **Nadia Khan** Memorial University, Canada	
11:00 – 11:30	**Refreshment Break** [Fort William Salon A&B]	

Day 3 Wednesday, July 23, 2025

11:30 – 13:00	[Garrison Room] **Session 9 (Special Session)** **Strengthening Emergency Response Measures for Hazardous and Noxious Substance Spills in Aquatic Ecosystems**	[Signal Room] **Session 10** **Water and Wastewater Treatment (2)**
	/Keynote/ *Hazardous and Noxious Substances (HNS): Evolving Research Trends, Priorities, and Opportunities* **James Brydie** Natural Resources Canada, CanmetENERGY Devon	*Optimizing Pressure-Retarded Osmosis for Energy Generation Using High-Salinity Mine Water* **Catherine Mulligan** Concordia University, Canada
	Fate and Biodegradation of Wood Oil in Cold Marine Environments: Mechanistic Insights and Ecotoxicity Evaluation **Hongyi Li** Memorial University, Canada	*Crab Shell-Based Adsorbent for Phosphorous Removal from Wastewater* **Masoumeh Rostami** Memorial University, Canada
	Assessing the Fragmentation Processes of Microplastic Nurdles in Water under UV-Irradiation and Simulated Solar Spectrum **Md Hosnay Mobarok** Natural Resources Canada, CanmetENERGY Devon	*Reactivation of Preserved Fungal Biomass: Unlocking Its Potential for Wastewater Treatment Under Low-Temperature Conditions* **Parnian Mojahednia** University of Regina, Canada
	Biodegradation of Pyrolysis Oils in Canadian Ocean Waters is Driven by Temperature **Nayereh Saborimanesh** Natural Resources Canada, CanmetENERGY Devon	*A Comprehensive Review of Switchable Biomaterials for Wastewater Treatment: Innovations and Progress* **Hongjie Wang** Memorial University, Canada
	Fate and Ecotoxicity of Bio-Derived Oils after One-Week of Weathering in Salt Water: A Mesoscale Study **Qin Xin** Natural Resources Canada, CanmetENERGY Devon	*Chemical Inhibition of Methane Emissions from Oil Sands Tailings Ponds* **Xiaomeng Wang** Natural Resources Canada
		Natural Flocculant-Enhanced Electrocoagulation for Efficient Pretreatment in Brackish Water Membrane Desalination **Oumaima Lasry** Université de Sherbrooke, Canada
13:00 – 14:00	**Lunch** [Fort William Salon A&B]	

Day 3 Wednesday, July 23, 2025

14:00 – 15:30	[Garrison Room] **Session 11** **Oil Spill Response**	[Signal Room] **Session 12 (Special Topic Discussion)** **Future-Ready Biological Water Resource Recovery Technologies in the Context of Climate Change**
	/Keynote/ *Canada's Multi-Partner Research Initiative (MPRI): Advancing the Development and Application of Oil Spill Mitigation Technologies* **Kenneth Lee** Kenneth Lee Research Inc., Canada	***/Keynote/*** *Strategies to Achieve Dynamic Resilience in Wastewater Treatment* **Martha Dagnew** Western University, Canada
	Development and Evaluation of Bio-Based Dispersants for Oil Spill Response Across Different Salinity Conditions **Masoumeh Bavadi** Memorial University, Canada	*Harnessing the Power of Machine Learning for Water and Wastewater Treatment Modeling* **Zoe Li** McMaster University, Canada
	Pilot-Scale Test of A Foam-Based Filtration System for Treatment of Decanted Water in Oil Spill Responses **Calvin Rieder** University of Toronto, Canada	*Coupling Bioengineering with Water Valorization: Towards Creating Closed-Loop Water Systems* **Guneet Kaur** University of Guelph, Canada
	Onboard Decanted Water Treatment in Oil Spill Response Using Polyurethane Foam as Filtration Media **Puwaner Guo** University of Toronto, Canada	*Reimagining Biosolids Management Through the Lens of the Circular Economy* **Jinkai Xue** University of Regina, Canada
	Advancing Porous Materials with High Efficiency and Reusability Towards Practical Decanted Water Treatment **Wendy Tian** Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia	*Wastewater Biorefinery: Transitioning Wastewater Treatment Plants to Water Resource Recovery Facilities* **Oliver Iorhemen** University of Northern British Columbia, Canada
		Decoding Granule Dynamics: Does Granule Size Hold the Key for Low-Strength Municipal Wastewater Treatment? **Rania A. Hamza** Toronto Metropolitan University
15:30 – 16:00	**Refreshment Break** [Fort William Salon A&B]	
16:00 – 17:30	[Garrison Room] **Session 13 (Special Session)** **Plastics in the Environment: Sources, Transport, Fate, and Effects**	[Signal Room] **Session 14** **Water and Wastewater Treatment (3)**

Day 3 Wednesday, July 23, 2025

	/Keynote/ *The Formation of Marine Oil Snow and the Consequences for Marine Ecosystems* **Uta Passow** Memorial University, Canada	*Nanobubble-Inspired Emerging Technologies and Emerging Contaminant Removal for Sustainable Environmental Remediation* **Xiaying Xin** Queen's University, Canada
	Microplastic and Oil Interactions: What We Know and What Remains Unknown **Min Yang** Memorial University, Canada	*Microfluidic Confinement Technology for Enhanced Tetracycline Degradation* **Runbo Yuan** Memorial University, Canada
	The Impact of Plastic Pollution on the Functioning of the Biological Carbon Pump **Xia (Alice) Zhu** Memorial University, Canada	*The Recovery of Xanthan from Aerobic Granular Sludge Wastewater Treatment Systems* **Rebecca Vesuwe** University of Northern British Columbia, Canada
	Raman-Based Detection of Microplastics: the need for More Accessible and Reproducible Protocols **Nikki Renee Arsenault** Memorial University, Canada	*Retrofitting A CAS to An MBR in Municipal WWTPs to Address Water Reuse, Resource Recovery and Climate-Change Induced Shock-Loads: A Simulation-Based Resilience & Sustainability Assessment Using Actual Plant Data* **Mohammad Tauhidul Islam Bhuiyan** Western University, Canada
	Why Biofouling Cannot Contribute to the Vertical Transport of Small Microplastics **Ina Benner** Memorial University, Canada	
17:30 – 18:30	**Poster Onsite Q&A Session** [Fort William Salon C]	

Day 4 Thursday, July 24, 2025

08:00 – 09:00	**Conference Registration** [Pre – function Area]	
09:00 – 10:30	[Garrison Room] **Session 15** **Waste Management and Environmental Remediation**	[Signal Room] **Session 16** **Environmental Sustainability, Human Health and Ecotoxicology**
	/Keynote/ *Integrated Hydroponic-Plant Microbial Fuel Cell for Exudate Treatment and Sustainable Lettuce Cultivation* **Vijaya Raghavan** McGill University, Canada	***/Keynote/*** *Sustainable Solutions for Community Health in the Arctic* **Arja Rautio** University of Oulu, Finland
	Evaluation of the Use of an Air Bubble Curtain as A Supplemental Environmental Control During Remediation **Jonathon Bruce** C-CORE, Canada	*Oil Uptake via Marine Snow: Effects on Blue Mussels (Mytilus Sp.)* **Verena Kalter** Memorial University, Canada
	Kinetic Analysis and Process Optimization of Oily Sludge and Sawdust Co-Pyrolysis for Waste Reduction and Energy Recovery **Cheng Lu** University of Northern British Columbia, Canada	*An Integrated Model for Wastewater-Based Epidemiological Surveillance Utilizing Deep Learning Techniques* **Tingyi Wei** Memorial University, Canada
	Scaling Up CO_2 Capture: Adsorption Performance of Wood Based Biochar from Pyrolysis for Flue Gas Applications **Atefe Rahbar** Memorial University, Canada	*Time-Tension Line Cutters: A Possible Tool to Mitigate Whale Entanglements in Deep Water Fisheries* **Freya Snow** Dalhousie University, Canada
	Precision Fermentation Platform for Upcycling of Agri-Food Bioresources to Valuable Bioproducts **Guneet Kaur** University of Guelph, Canada	*Occupational Health and Safety Challenges among Community Search and Rescue Responders in Nunavik and Nunavut* **Amin Amini** Memorial University, Canada
10:30 – 11:00	**Refreshment Break [Fort William Salon A&B]**	
11:00 – 12:30	[Garrison Room] **Session 17** **Environmental Monitoring, Modeling and Decision Making**	[Signal Room] **Session 18** **Climate Change Modeling and Impact Assessment**
	/Keynote/ *Integrating High-Precision Monitoring for Marine Conservation in the Pearl River Estuary* **Dongxiao Wang** Sun Yat-sen University, China	***/Keynote/*** *Climate Change and Its Impact in Coastal Areas of Newfoundland and Labrador* **Haseen Khan** Government of Newfoundland and Labrador, Canada

Day 4 Thursday, July 24, 2025

	Coupled OpenFOAM-Yade Modeling of Near-Bed Turbulence and Sediment Transport over Roughness Elements in A 2D Flume **Bowen Xu** Concordia University, Canada	*Assessing the Risks of Climate Change on Food Security on Prince Edward Island, Canada* **Levannia Lildhar** University of Prince Edward Island, Canada
	Smart Waste Operation and Management for the Food Waste Management in NL Industrial-Commercial-Institutional Sectors **Jiayi Chen** Memorial University, Canada	*Microalgal Carbon Fixation under Contaminant Stress: Wastewater- and Natural Water-Based Photobioreactor Systems* **Xueyan Xu** Memorial University, Canada
	Floating Photobioreactors Facilitated Microalgae Biomass Generation for Marine Carbon Dioxide Reduction: A Literature Review **Zheng Wang** Memorial University, Canada	*Rea/- World Performance of Battery Electric Buses in Cold Climates: Energy Consumption and Regenerative Braking Efficiency* **Xuelin Tian** Concordia University, Canada
	Prediction of Membrane Cleaning Performance using Data Analytics **Zoe Li** McMaster University, Canada	*Calculation of Dimethyl Sulfide (DMS) Air-Sea Flux and Analysis of Its Contribution to the Regional Atmospheric Sulfur Cycle in the Northern South China Sea* **Pu Li** Sun Yat-sen University, China
12:30 – 13:30	**Lunch** [Fort William Salon A&B]	
13:30 – 15:00	[Garrison Room] **Session 19** **Climate Change Mitigation, Adaptation and Planning (1)**	[Signal Room] **Session 20** **Climate Change Mitigation, Adaptation and Planning (2)**
	/Keynote/ *Integrating Climate Change Projections into A Municipal Water System Master Plan* **Andrew Niblock** City of St. John's, NL, Canada	***/Keynote/*** *The Territory as Source of First Nations' Identities – Linking Nature, Culture and the Climate* **Jan Borm** Université Paris-Saclay, France
	Enabling Resiliency in the Face of Climate Change **Carolann Harding** SmartICE Monitoring & Information Inc., Canada	*Mineral Carbonation in Metalliferous Waste with High Alkalinity* **Catherine Mulligan** Concordia University, Canada
	Raft Foundation Feasibility for Cold Region Road in Northern Canada **Di Wang** University of Ottawa, Canada	*Harnessing Marine Microalgae for Carbon Capture and Biomass Production under Naphthalene and Bicarbonate Stress* **Hao Wu** Memorial University, Canada

Day 4 Thursday, July 24, 2025

	A Critical Review of Carbon Emissions Trading in Ground Transportation: Policy, Research, and Future **He Peng** 🎓 Concordia University, Canada	*A Laboratory Investigation into Oil and Shoreline Sediment Interactions Under the Influence of Temperature* **Lee Britton** 🎓 Memorial University, Canada
	Reconstructing High-Temporal Wildfire Incidents from GOES Satellite Data **Qiao Kang** Stanford University, U.S.	*The Influence of Climate Change on North Atlantic Tropical Cyclone Genesis Regions* **Gleniese Eulamae McKenzie** 🎓 University of Prince Edward Island, Canada
	The Use of Nature-Based Infrastructure for Mitigating Coastal Erosion in Newfoundland **Joe Daraio** Memorial University, Canada	
15:00 – 15:30	**Refreshment Break** [Fort William Salon A&B]	
15:30 – 17:30	**Special Training Session** [Fort William Salon A&B] *Science & Engineering Entrepreneurship* **Carlos Bazan** Memorial University, Canada	
18:00 – 19:00	**Reception** [Court Garden]	
19:00 – 22:00	**Banquet (Award Ceremony and Closing)** [Court Garden]	

Day 5 Friday, July 25, 2025

Morning Field Trip Itinerary

Time	Location	Activity
08:45	Sheraton Hotel Lobby	Gathering
09:00	Sheraton Hotel	Departure
09:20 – 10:20	Windsor Lake Water Treatment Plant	Visit
10:30 – 11:15	Memorial University, Canada (Main Campus)	Visit
11:15 – 12:00	St. John's Downtown	Bus tour
12:00	Optional Stop: St. John's Harbour	Participants may disembark to explore independently. Bus will return to Sheraton Hotel.

Afternoon Field Trip Itinerary

Time	Location	Activity
13:15	Sheraton Hotel Lobby	Gathering
13:30	Sheraton Hotel	Departure
13:40 – 14:40	Riverhead Wastewater Treatment Facility	Visit
15:00 – 16:00	Johnson GEO Centre	Visit
16:00 – 17:00	Signal Hill National Historic Site	Visit
17:00	Optional Stop: Signal Hill	Participants may disembark to explore independently. Bus will return to Sheraton Hotel.

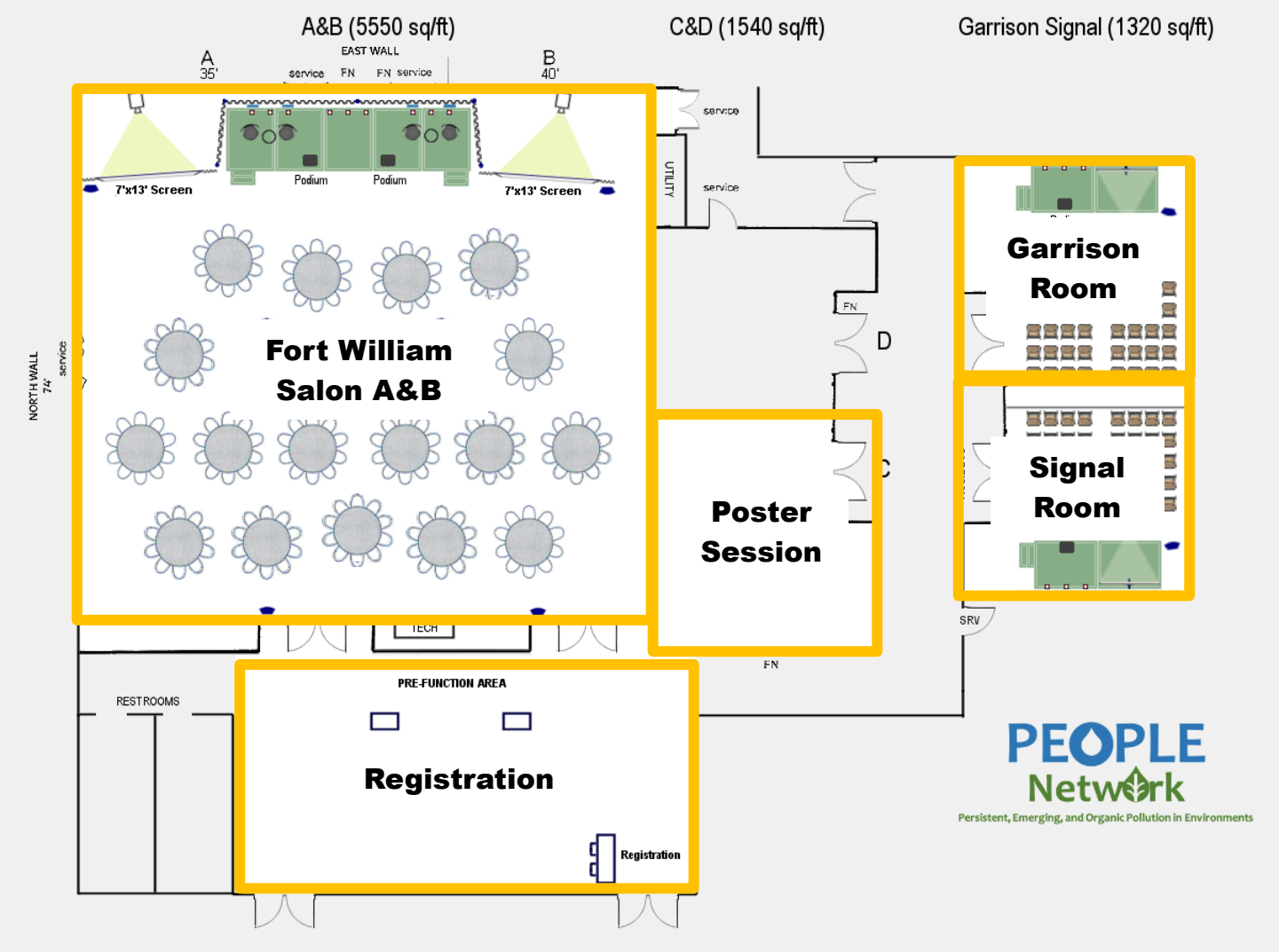
Poster Presentation

Group 1

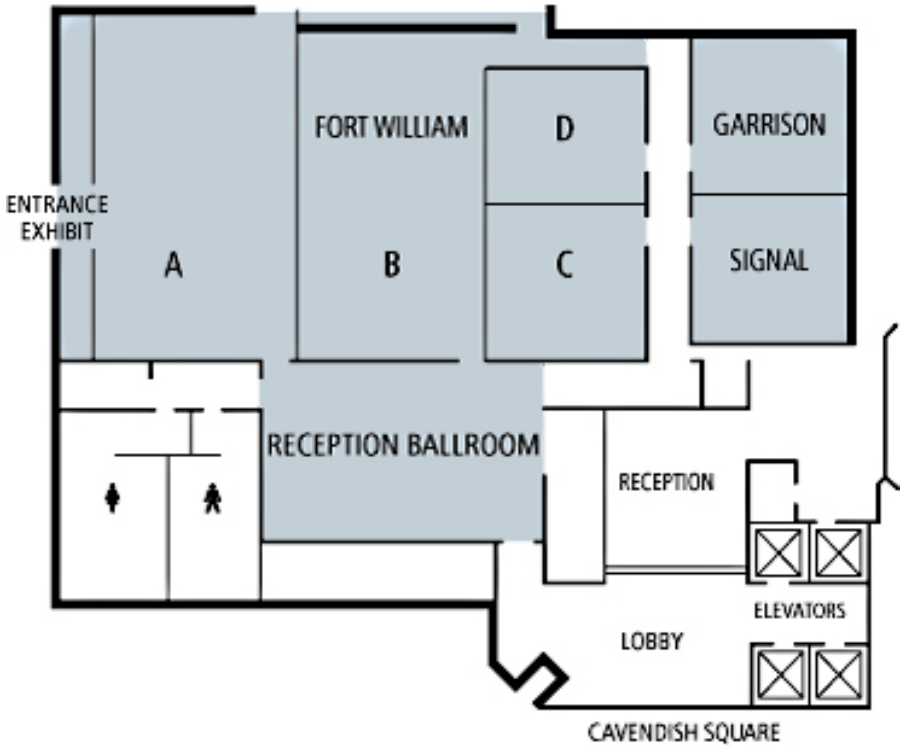
1	*Arsenic Distribution and Speciation in Multiphase Media in A Large Shallow Lake: The Influence of Eutrophication on Arsenic Cycling in Freshwater* **Feifei Che** Chinese Research Academy of Environmental Sciences, China
2	*A Novel Spectral Index for Detecting Large Plastic Accumulations Using Sentinel-2 Imagery* **Chudi Wu** Concordia University, Canada
3	*Detection of Microplastics in Seawater via AUV Sampling at Variable Flow Rates* **Qian Zhong** Memorial University, Canada
4	*Pharmaceuticals, Microplastics, and Biogenic Compounds in River and Wastewater: Ecohydrological Catchment Monitoring and Photonic Sensor Technology* **Katarzyna Jaszczyszyn** European Regional Centre for Ecohydrology PAS, Poland
5	*Study on Soil-Groundwater Contamination Remediation and Risk Control in Operating Petrochemical Plant* **Xiaodan Liu** CNPC Research Institute of Safety & Environment Technology, China
6	*Antidiabetic Drug Pollution in Water: An Urgent Emerging Threat and a Pathway Toward Biochar-Based Removal and Degradation* **Husne-Al Jabeen** Memorial University, Canada
7	*Spatial and Temporal Variations of Heavy Metals and Probabilistic Health Risks in Underground Drinking Water Source in the Yellow River Basin* **Sheng Chang** Chinese Research Academy of Environmental Sciences, China
8	*The Role of Wastewater Treatment Plants in Heavy Metal Pollution of Surface Waters: Evidence from the Pilica River, Poland* **Katarzyna Jaszczyszyn** European Regional Centre for Ecohydrology PAS, Poland
9	*A Numerical Modeling Approach to Simulate Pollutant Transport in Estuaries under Multi-Factor Influences* **Ende Lin** Memorial University, Canada

	Group 2
10	*Forecasting and Management of Potato Late Blight* **Christine Parsons** University of Prince Edward Island, Canada
11	*Exploring the Role of Regenerative Agriculture in Promoting the Sustainability of Local Food Systems: A Qualitative study in Newfoundland and Labrador.* **Chinenye Onyenwe** Memorial University, Canada
12	*Restaurant Food Waste Reduction Using Nudge at Customer Level: An Interventional Study* **Yasaman Alidadi** Memorial University, Canada
13	*New Analytical Methods in Water Quality Monitoring: From Microextraction to In-Situ Sensors* **Katarzyna Jaszczyszyn** European Regional Centre for Ecohydrology PAS, Poland
14	*A Review of QSAR Applications in Terpene Toxicity Analysis* **Hongyang Ye** Memorial University, Canada
15	*Carbon Dioxide Capture in Canada: Technologies, Policies, and Global Standing* **Negar Ahmadi** Memorial University, Canada
16	*Lifecycle-Based Strategies for Environmental Management in Petroleum and Petrochemical Industries* **Qian Wu** CNPC Research Institute of Safety & Environment Technology, China
17	*Exploring eDNA Metabarcoding as a Non-Invasive Monitoring Tool in Cold Oceans* **Letitia Chen** Memorial University, Canada
18	*Unlocking the Value of Slaughterhouse Waste through Sustainable Hydrolysis for By-Products Recovery* **Mojtaba Zarea** Memorial University, Canada

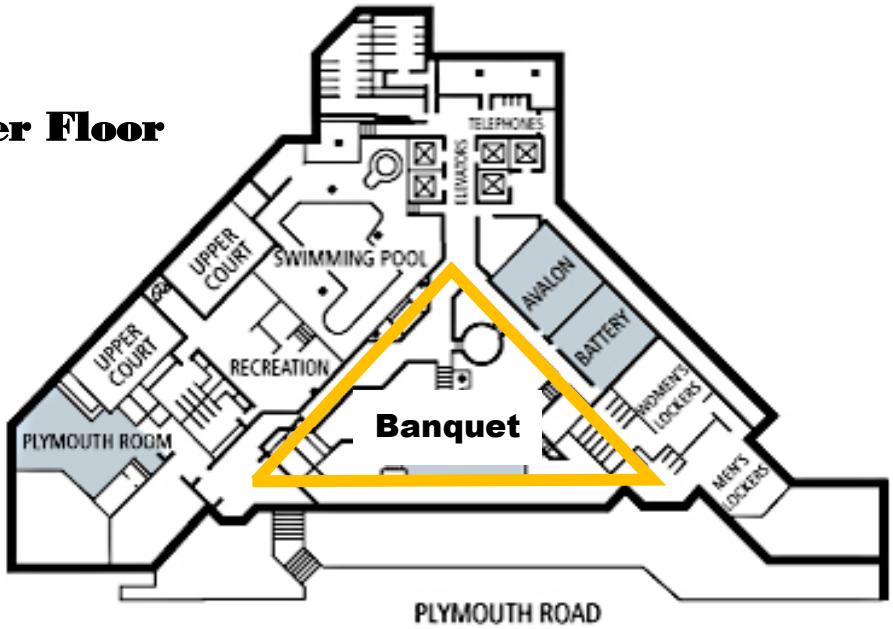
Conference Venue Floorplans



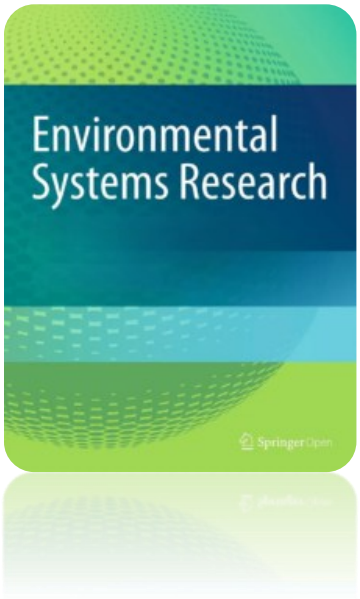
Sheraton Hotel Main Floor



Lower Floor



Supporting Journal



Environmental Systems Research (Springer Nature)

Environmental Systems Research (ISSN: 2193-2697) publishes high-quality, interdisciplinary and refereed research papers, review and comment articles, and topical collections on all aspects of environmental systems from water (terrestrial and marine), air, soil and biota. The journal aims to advance and apply scientific knowledge and practical methods to improve our understanding of environmental and sustainability issues and support evidence-based policy making and eco-friendly practice at regional or global scales. The journal particularly encourages innovative, original and cross-disciplinary research on the development and use of new or improved methodologies and technologies for scientific studies and practical work in environmental fields.

ESR has officially received its first Impact Factor (IF) of 3.4, as announced in the 2024 Journal Citation Reports. ESR is now indexed in the Emerging Sources Citation Index (ESCI) and ranked in Q2 in its category. It has also received the first CiteScore of 7.4 and ranked 37/271 in Environmental Science (miscellaneous) by Scopus.

The selected abstracts presented at the PEOPLE 2025 International Conference will be invited for submission to a special issue (Topic Collection) in the Environmental Systems Research after the event.

Student Awards

Philip H. Jones Awards: A cash prize ($300 for first place, $200 for second place) and a one-year membership of the Canadian Association on Water Quality (CAWQ)

The Royal Society of Chemistry (RSC) Award: $500 CAD worth of RSC books

The PEOPLE Network Awards: Best Oral Presentation ($300 for first place, $200 for second place, $100 for third place), Best Poster Presentation ($100)

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