NRPOP LAB

Northern Region Persistent Organic Pollution Control Laboratory

Master of Engineering/PhD Positions

Northern Region Persistent Organic Pollution Control (NRPOP) Laboratory

Memorial University, Canada

The NRPOP Lab is recruiting fully funded Master's and PhD students for Spring/Fall 2026 (rolling admission). Our research focuses on environmental engineering, marine/coastal pollution, emerging contaminants, and AI-driven environmental intelligence, especially in cold and harsh regions.

Research Areas:

1. Oil Spill Response Technologies & Intelligent Decision Support

Develop advanced methodologies, risk assessment frameworks, and decision-making tools for effective spill mitigation, especially in cold regions and harsh marine environments.

2. Emerging Pollutants in the Arctic & Marine Pollution Prevention and Control

Investigate the fate, transport, impact and mitigation of emerging contaminants (e.g., microplastics, PFAS, PBDEs, PPCPs) and devise innovative monitoring and remediation technologies for northern and coastal regions.

3. AI-Aided Environmental Data Analysis & Modeling

Apply artificial intelligence and machine learning to process complex environmental datasets, model contaminant behaviors, and support predictive simulations in environmental risk management.

About the Principal Investigator

Dr. Bing Chen is the UArctic Research Chair in Marine and Coastal Environmental Engineering, a Fellow of the Canadian Academy of Engineering, and Director of the NRPOP Lab and the Network on the Persistent, Emerging, and Organic PoLlution in the Environment (PEOPLE Network). He serves as Professor and Interim Dean in the Faculty of Engineering and Applied Science at Memorial University.

Dr. Chen's research expertise spans environmental engineering and management, emergency response, marine and coastal protection, environmental nanotechnology and biotechnology, and climate change adaptation. He has led over 60 research projects, authored more than 600 publications (including 200+ refereed journal papers), and mentored over 100 research-based graduate students and postdoctoral fellows. His work is internationally recognized for its impact on the management of persistent and emerging organic pollutants, particularly in cold regions and harsh environments.

Minimum Qualifications

- Background in Environmental Engineering/Science, Earth/Environmental Science, Chemistry/Chemical Engineering, Computer/Data Engineering, Applied Mathematics, or related quantitative fields
- Strong analytical, teamwork, and scientific communication skills
- Experience working on projects in the Arctic or other polar/cold regions is an asset.

About Memorial University

Located in St. John's, the capital and largest city of Newfoundland and Labrador, a city renowned for its rich history and vibrant culture, Memorial University (MUN) is Atlantic Canada's largest university and the province's only comprehensive institution. Celebrating 100 years of academic excellence, MUN is a research-intensive, globally recognized university known for innovation, teaching, and community impact.

The Faculty of Engineering and Applied Science is ranked among Canada's top 10 engineering programs and is the #1 engineering school in Atlantic Canada, offering unique programs such as Ocean & Naval Architectural Engineering and Process Engineering. MUN is also a global leader in marine and ocean research, leveraging its coastal location to drive innovation in ocean engineering, offshore safety, sustainable fisheries, and environmental studies.

About NRPOP Lab

The Northern Region Persistent Organic Pollution Control (NRPOP) Laboratory was founded in 2007 by the Canada Foundation for Innovation (CFI) at Memorial University in Canada. This world-class lab is dedicated to innovative research on persistent and emerging

contaminants in northern regions and marine environments and their mitigation methodologies and technologies. By integrating with advanced nano-/biotech and AI techniques, coupled experimental and modeling approaches are used to study the transport, fate, and effect of these contaminants and develop monitoring, analysis, simulation, control, and remediation technologies. The lab hosts first-class analytical and simulation facilities especially including the in-door pilot-scale systems, a first of its kind in Canada, for simulating pollutant transport and mitigation process in subsurface and ocean environments.

What We Offer

- Competitive funding to support your research and academic growth
- High-performance computing resources, including institutional HPC and access to the Digital Research Alliance of Canada (formerly Compute Canada) for large-scale simulations and training
- World-class research facilities, including indoor pilot-scale simulation systems, quantum communication labs, the Centre for Artificial Intelligence, and the Harsh Environment Research Facility (HERF)
- Opportunities for interdisciplinary and international collaborations through our extensive global partner network
- Professional development support, including conference travel, leadership training, and skill-building programs

How to Apply

Candidates are encouraged to email NRPOP Lab (nrpopmun@gmail.com) with the subject line “NRPOP Master/PhD Application – Your Name”. Please include:

- CV
- Transcripts (unofficial accepted)
- Example publications (if any)