

# Now Hiring Postdoctoral Fellow Position

## Northern Region Persistent Organic Pollution Control (NRPOP) Laboratory Memorial University, Canada

### 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.

### POSITION DESCRIPTION

The NRPOP Laboratory, led by Dr. Chen, invites applications for fully funded postdoctoral fellow (PDF) position, with preferred start dates in Spring (May) or Fall (September), though later enrollment is possible. Research will focus on conducting data-driven research in various environmental engineering and science fields, such as the fate and transport of emerging contaminants and advanced nano-/biotech techniques.



**NRPOP LAB**  
Northern Region Persistent Organic Pollution Control Laboratory

## ► CORE RESPONSIBILITIES

- Build robust data pipelines (ingest/clean/label), and run reproducible ML experiments with clear baselines & benchmarks
- Design/evaluate models for time series, spatiotemporal, Bayesian/UQ, graph, and causal tasks
- Integrate mechanistic insight (mass balance, kinetics, hydrodynamics) with ML (hybrid/PINN/gray-box)
- Collaborate with experimentalists on active/closed-loop experiments guided by model uncertainty
- Communicate results via papers, open datasets/code, and stakeholder-ready dashboards/visuals

## ► MINIMUM QUALIFICATIONS

- At the time of appointment, candidates must hold a PhD in a quantitative field such as Environmental Engineering/Science, Chemistry/Chemical Engineering, Earth/Environmental Sciences, Biology, Computer/Data Science, Software Engineering, Statistics/Applied Mathematics, or a closely related field, with a strong research record.
- Experience working on projects in the Arctic or other polar/cold regions is an asset.
- Proven ability to work independently and in teams; strong scientific writing & communication
- Experience with data-driven research involving complex, heterogeneous datasets (e.g., and model-based reasoning (statistical/Bayesian, causal, or hybrid ML-mechanistic)
- Data/Software:
  - Python (NumPy, pandas), machine learning, deep learning (PyTorch/JAX/TF)
  - Geospatial & arrays: xarray, rasterio (or equivalent), ArcGIS/QGIS

## ► PREFERRED (NICE-TO-HAVE) SKILLS

- ML/Stats: spatiotemporal modeling, Bayesian inference, causal inference, geospatial/remote sensing, graph ML, physics-informed neural networks
- Databases & APIs: SQL, workflow tools/schedulers as needed
- MLOps/Reproducibility: Git; containers (e.g., Docker); experiment tracking (MLflow, Weights & Biases, or Optuna)
- Domain Knowledge: contaminants & fate/transport, quantum chemistry, environmental nanotech/biotech, risk assessment & emergency response, marine science, climate change (more focus AI)

## ▶ 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](mailto:nrpopmun@gmail.com)) with the subject line "NRPOP PDF application- Your Name". Please include:
  - CV
  - Transcripts (unofficial accepted)
  - Two example publications