Postdoc Position:

Analytical Method Development for Phycotoxin Detection in Animal Tissues

University of New Brunswick and National Research Council of Canada, based in Halifax, Canada

Application Deadline: 1 September 2025
Start Date: January 2026
Type of employment: temporary (one year)
Salary: $70,000 per year, plus fringe benefits

Project description:

The University of New Brunswick (UNB) is seeking a Postdoctoral Fellow (PDF) to join our interdisciplinary team focused on developing and validating protocols for phycotoxin detection and quantification in animal tissues. This research contributes to a larger interdisciplinary and international program called *Phycotoxins in the Arctic marine ecosystem: an emerging climate change risk*, which aims to investigate the presence, transfer, and potential impacts of phycotoxins in Arctic food webs.

The PDF will be based at the National Research Council of Canada (Halifax, NS) and will be responsible for developing and implementing effective multi-class protocols for the analysis of hydrophilic marine algal toxins including saxitoxins and domoic acid, and various classes of lipophilic toxins. This will include research on sample preparation methods, as well as analytical detection methods including liquid chromatography coupled to tandem mass spectrometry (low- and high-resolution).

Qualification requirements:

- PhD in Analytical Chemistry, Environmental Chemistry, Toxicology, or a related field (completed within the last 5 years).
- Extensive experience with analytical instrumentation, especially LC-UV, LC-FLD, MS; LC-MS/MS and LC-HRMS
- Demonstrated expertise in method development and biological sample preparation.
- Strong problem-solving skills, attention to detail, and the ability to work independently and as part of a team.
- Excellent communication skills, both written and oral.
- The candidate must be fluent in English; bilingualism (English and French) is considered a strong asset.

Candidates will be assessed based on their academic background, relevant research experience, the quality and impact of previous research, and the clarity and ambition demonstrated in the cover letter. Shortlisted applicants may be invited to participate in an interview. Emphasis will be placed on demonstrated research skills and potential for scientific contribution.

About the employment
This is a full-time, one-year position. The preferred start date is January 2026 as the latest possible start time. The successful candidate will join a dynamic and collaborative research environment within two Canadian research institutions, benefiting from access to state-of-the-art facilities and instrumentation. The successful candidate will work under the supervision of Dr. Pearse McCarron (NRC) and Dr. Audrey Limoges (UNB). The laboratory work will be conducted at NRC in Halifax, located in eastern Canada.
This position offers the opportunity to contribute to high-impact research addressing emerging environmental and public health challenges, with direct application to coastal northern communities.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: pearse.mccarron@nrc-cnrc.gc.ca and alimoges@unb.ca

Applications will be accepted until the position is filled.

Postdoctoral Position:
Phycotoxin exposure pathways via transfer in the food web
Memorial University, based in St. John's, Canada

Application Deadline: 1 September 2025
Start Date: 1 April 2026
Type of employment: temporary
Salary: $70,000 per year, plus fringe benefits

Project description:
Rapid warming of the Canadian subarctic and Arctic seas has led to increased sea surface temperatures and declining sea ice coverage and duration. These habitat shifts have resulted in dynamic changes to the marine ecosystems of these regions, including the increased occurrence and abundance of more boreal and temperate species. This includes a recent increase in observations of harmful algal bloom (HAB) phytoplankton species in Canadian subarctic and Arctic marine ecosystems. HAB species can produce neurotoxins that pose a significant risk to both ecosystem functioning and human health. These toxins can bioaccumulate in the food web transferring from lower trophic levels like zooplankton up to higher trophic levels like birds and marine mammals. Thus, HABs represent a growing concern for marine Arctic ecosystem health and the food security and safety of local Indigenous communities.

Understanding how phytotoxins accumulate and transfer through the food web is critical for predicting the effects of HABs on Canadian subarctic and Arctic marine ecosystems and Indigenous communities. We are seeking a postdoc fellow (PDF) to assess phycotoxin exposure pathways via transfer in the food web. The PDF will be responsible for identifying key trophic pathways of phytotoxin transfer by characterizing trophic interactions from primary producers to fish across marine ecosystems of the Nunatsiavut and Nunavik regions in the Canadian subarctic and Arctic. The project will prioritize forage fish that play a central role in the transfer of energy across the food web, as well as fish species of importance to local Indigenous communities. The PDF will also evaluate whether trophic interactions vary seasonally or regionally, potentially altering phytotoxin transfer pathways.

Qualification requirements

- PhD in marine ecology, marine biology, or fisheries sciences
- Demonstrated expertise in protocol development and biological sampling in Labrador and/or the eastern Canadian Arctic
- Strong problem-solving skills, attention to detail, and the ability to work independently and in teams.
- Demonstrated interest in interdisciplinary collaboration and community engagement.
- Excellent communication skills, both written and oral.
- The candidate must be fluent in English

About the employment

This is a full-time, two-year position. The preferred start date is 1 April 2026.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: maxime.geoffroy@mi.mun.ca

Applications will be accepted until the deadline.

Postdoctoral Position:

Coupling Remote Sensing and Phytoplankton Imaging Systems in an Operational Perspective for Preventing HABs in Local Communities

Université Laval and University of New Brunswick, based in Québec city, Canada

Application Deadline: 1 September 2025
Start Date: November 2025
Type of employment: temporary
Salary: $70,000 per year, plus fringe benefits

Project description:

We are seeking a motivated and interdisciplinary postdoctoral researcher to join an innovative project that aims to integrate satellite remote sensing, *in situ* phytoplankton imaging, and omics technologies to improve the monitoring and forecasting of marine ecosystems. The project places a strong emphasis on applications relevant to local and Indigenous communities in Arctic and coastal regions, particularly in the context of harmful algal bloom (HAB) prevention and early warning.

This position is part of a broader effort to co-develop operational tools and decision-support systems that combine large-scale satellite observations with high-resolution biological data to better understand HAB dynamics, biodiversity patterns, and ecosystem health in a rapidly changing ocean. The successful candidate will contribute to the co-development of actionable knowledge and tools that are both scientifically sound and operationally trusted by communities. The ultimate goal is to provide tools to local actors; to anticipate, respond to, and adapt to the increasing risk of HABs in their environment.

The work will span the interface between observational oceanography, ecological modeling, and community engagement, with a focus on making complex environmental data both usable and impactful at the local level.

Requirements

- Integrate ocean color remote sensing products (e.g., chlorophyll-a, phytoplankton functional types) with high-resolution phytoplankton imaging data (e.g., PlanktoScope, IFCB) and genomic data (e.g., Nanopore sequencing) for HAB detection and characterization.
- Co-develop dashboards, visualization tools, or alert systems in collaboration with community stakeholders to support timely decision-making and preparedness.
- Contribute to the design and implementation of pilot observatories or monitoring frameworks in targeted areas (e.g., Arctic coastal zones, estuaries, aquaculture sites).
- Develop and refine early warning indicators and detection algorithms tailored to regional HAB species and environmental drivers.
- Validate detection approaches using field campaign data, historical records, and/or citizen science networks.

Required Qualifications
- PhD in oceanography, marine ecology, environmental remote sensing, or a related discipline.
- Proven experience with ocean color data analysis and/or plankton imaging systems.
- Strong programming and data analysis skills (e.g., Python, R, machine learning, image processing).
- Solid understanding of HAB ecology and familiarity with relevant detection methods.
- Demonstrated interest in interdisciplinary collaboration and community engagement.

Candidates will be assessed based on their academic background, relevant research experience, the quality and impact of previous research, and the clarity and ambition demonstrated in the cover letter. Shortlisted applicants may be invited to participate in an interview. Particular emphasis will be placed on demonstrated research skills and potential for scientific contribution.

About the employment

This is a full-time, three-year position. The preferred start date is November 2025, with April 2026 as the latest possible start time. The successful candidate will join a dynamic and collaborative research environment within two Canadian research institutions, benefiting from access to state-of-the-art facilities and instrumentation. The successful candidate will work under the supervision of Dr. Mathieu Ardyna (ULaval) and Dr. Audrey Limoges (UNB).

This position offers the opportunity to contribute to high-impact research addressing emerging environmental and public health challenges, with direct application to coastal Inuit communities.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: mathieu.ardyna@takuvik.ulaval.ca and alimoges@unb.ca

Applications will be accepted until the position is filled.

PhD Position:
Ecological patterns and life cycle stages of toxigenic algae in the Arctic
University of New Brunswick and Université Laval, based in Fredericton, Canada

Application Deadline: 1 September 2025
Start Date: January 2026
Salary: $30,000 per year for three years

Project description:
The University of New Brunswick and Université Laval are seeking a PhD candidate to join our interdisciplinary team focused on improving our understanding of the ecology and export dynamics of potentially toxigenic algae in the Arctic. This research contributes to a larger interdisciplinary and international program called *Phycotoxins in the Arctic marine ecosystem: an emerging climate change risk*, which aims to investigate the presence, transfer, and potential impacts of phycotoxins in Arctic food webs.

The PhD candidate will identify and quantify phytoplankton and their resting stages in both water column and sediment samples, with a particular focus on potentially toxigenic taxa, their life-cycle transitions and associated toxicity. The project will integrate several complementary approaches, including automated imaging systems, classical microscopy, and molecular techniques.

Qualification requirements

- MSc in Earth Sciences, Biology, Oceanography or other relevant field.
- Experience with microscopy, phytoplankton taxonomy and/or genomic.
- Strong problem-solving skills, attention to detail, and the ability to work independently and in teams.
- Demonstrated interest in interdisciplinary collaboration and community engagement.
- Excellent communication skills, both written and oral.
- The candidate must be fluent in English.

Candidates will be assessed based on their academic background, relevant research experience, the quality and impact of previous research, and the clarity and ambition demonstrated in the cover letter. Shortlisted applicants may be invited to participate in an interview. Particular emphasis will be placed on demonstrated research skills and potential for scientific contribution.

About the employment

The preferred start date is January 2026, with April 2026 as the latest possible start time. The successful candidate will join a dynamic and collaborative research environment within two Canadian research institutions. The successful candidate will work under the supervision of Dr. Audrey Limoges (UNB) and Dr. Ardyna (ULaval) in collaboration with a consortium of several other universities, organizations and

federal departments. The candidate will be primarily based at UNB, with visits to Université Laval and northern communities expected.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: alimoges@unb.ca and mathieu.ardyna@takuvik.ulaval.ca

Applications will be accepted until the position is filled.

Acknowledgements and Commitment to Diversity
UNB recognizes and respectfully acknowledges that all UNB interactions in Fredericton take place on traditional lands of Wolastoqiyik. The University of New Brunswick is committed to employment equity, fostering diversity within our community, and developing an inclusive workplace that reflects the richness of the broader community that we serve. We welcome and encourage applications from all qualified individuals, including women, visible minorities, Indigenous persons, persons with disabilities, and persons of any sexual orientation, gender identity, or gender expression. Preference will be given to Canadian citizens and permanent residents of Canada.

PhD position:

Ecogenomic signatures and ecological patterns of toxigenic phytoplankton in the Arctic
Université Laval and University of New Brunswick, based in Québec city, Canada

Application Deadline: 1 September 2025
Start Date: January 2026
Salary: $30,000 per year for three years

Project description:
Université Laval and University of New Brunswick are seeking a PhD candidate to join our interdisciplinary team investigating the molecular signature and ecological dynamics of toxigenic phytoplankton in Arctic water samples and surface sediments. The project focuses on identifying potentially toxigenic species and toxin genes using advanced molecular tools. This research contributes to a larger interdisciplinary and international program called *Phycotoxins in the Arctic marine ecosystem: an emerging climate change risk*, which aims to investigate the presence, transfer, and potential impacts of phycotoxins in Arctic food webs.

The PhD candidate will be trained and apply high-throughput Oxford Nanopore genome sequencing, direct RNASeq, amplification technologies and bioinformatics to detect potentially toxigenic marine algal species and associated toxin-producing genes in water and surface sediment samples. The project will also involve testing and validating technologies for real-time, on-site monitoring of these algae in the Arctic.

Qualification requirements

- MSc in Oceanography, Earth Sciences, Biology, Molecular Biology, Bioinformatics or other relevant fields.
- Experience with microscopy, phytoplankton taxonomy, molecular biology and/or bioinformatics
- Strong problem-solving skills, attention to detail, and the ability to work independently and in teams.
- Excellent communication skills, both written and oral.
- Bilingualism (English and French) is considered a strong asset.

Candidates will be assessed based on their academic background, relevant research experience, the quality and impact of previous research, and the clarity and ambition demonstrated in the cover letter. Shortlisted applicants may be invited to participate in an interview. Particular emphasis will be placed on demonstrated research skills and potential for scientific contribution.

About the employment

The preferred start date is Fall 2025, with Winter 2026 as the latest possible start time. The successful candidate will join a dynamic and collaborative research environment within two Canadian research

institutions, benefiting from access to state-of-the-art facilities and instrumentation. The successful candidate will work under the supervision of Dr. Ardyna (ULaval – Takuvik), Dr. Roger Levesque (ULaval) and Dr. Audrey Limoges (UNB) in collaboration with a consortium of several other universities, organizations and federal departments. The candidate will be primarily based at ULaval, with visits to UNB expected.

This position offers the opportunity to contribute to high-impact research addressing emerging environmental and public health challenges, with direct application to coastal Inuit communities.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: mathieu.ardyna@takuvik.ulaval.ca , rclevesq@ibis.ulaval.ca and alimoges@unb.ca

Applications will be accepted until the position is filled.

MSc position:
Phycotoxin exposure pathways via transfer in the food web
Memorial University, based in St. John's, Canada

Application Deadline: 1 September 2026
Start Date: 1 April 2027
Type of employment: MSc student
Salary: $24,000 per year

Project description:
Rapid warming of the Canadian subarctic and Arctic seas has led to increased sea surface temperatures and declining sea ice coverage and duration. These habitat shifts have resulted in dynamic changes to the marine ecosystems of these regions, including the increased occurrence and abundance of more boreal and temperate species. This includes a recent increase in observations of harmful algal bloom (HAB) phytoplankton species in Canadian subarctic and Arctic marine ecosystems. HAB species can produce neurotoxins that pose a significant risk to both ecosystem functioning and human health. These toxins can bioaccumulate in the food web transferring from lower trophic levels like zooplankton up to higher trophic levels like birds and marine mammals. Thus, HABs represent a growing concern for marine Arctic ecosystem health and the food security and safety of local Indigenous communities.

To understand how phytotoxins accumulate and transfer through the food web, we are seeking a master's student to conduct a complimentary project to analyze trophic interactions and possible phytotoxin pathways of higher trophic levels including seabirds, filterers (i.e., bivalves) and marine mammals. This project will focus on locally harvested species thus providing critical information on the risk HABs will pose to the food security of Indigenous communities.

Qualification requirements

- BSc in biology, marine biology or equivalent
- Demonstrated expertise in marine ecology
- Strong problem-solving skills, attention to detail, and the ability to work independently and in teams.
- Excellent communication skills, both written and oral.
- The candidate must be fluent in English

About the employment

This is a full-time, two-year MSC position. The preferred start date is 1 April 2027.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: maxime.geoffroy@mi.mun.ca

Applications will be accepted until the deadline.

MSc position:
Proteomic indicators of Domoic Acid production in the Arctic
Dalhousie University, Halifax, Canada

Application Deadline: 1 September 2025
Start Date: January 2026
Salary: $24,000 per year

Project description:
Dalhousie University is seeking a candidate to join an interdisciplinary team investigating the molecular signatures of phycotoxin production by phytoplankton in Arctic water samples using targeted proteomics, with a particular focus on the diatom-derived toxin domoic acid. The project focuses on developing sensitive protein-based tools to quantify domoic acid production potential. Proteins are the molecular machinery that produce toxins directly and can be sensitive indicators of toxin production potential. This research contributes to a larger interdisciplinary and international program called *Phycotoxins in the Arctic marine ecosystem: an emerging climate change risk*, which aims to investigate the presence, transfer, and potential impacts of phycotoxins in Arctic food webs.

The MSc candidate will be trained in and apply targeted liquid chromatography mass spectrometry to detect domoic acid production proteins in water samples from across the Arctic. The candidate may also collaborate with others to test and validate technologies for real-time, on-site monitoring of these algae in the Arctic.

Qualification requirements

- BSc in Chemistry, Oceanography, Biology, Molecular Biology, or other relevant fields.
- Research experience as demonstrated through a successful independent research project, e.g. honours thesis.
- Strong problem-solving skills, attention to detail, and the ability to work independently and in teams.
- Excellent communication skills, both written and oral.
- Successful applicant must be fluent in English, bilingualism (English and French) is considered a strong asset.

Candidates will be assessed based on their academic background, relevant research experience, the quality and impact of previous research, and the clarity and ambition demonstrated in the cover letter. Shortlisted applicants may be invited to participate in an interview. Particular emphasis will be placed on demonstrated research skills and potential for scientific contribution.

About the employment

The preferred start date is Winter 2026. The successful candidate will join a dynamic and collaborative research environment, benefiting from access to state-of-the-art facilities and instrumentation. The successful candidate will work under the supervision of Dr. Erin Bertrand and collaborations and research visits with Dr. Ardyna (ULaval – Takuvik), Dr. Roger Levesque (ULaval) and Dr. Audrey Limoges (UNB) are possible.

This position offers the opportunity to contribute to high-impact research addressing emerging environmental and public health challenges, with direct application to coastal Inuit communities.

How to apply?

Please submit the following materials in a single PDF:

- Cover letter detailing your interest and fit for the position
- *Curriculum vitae*
- Names and contact information of three references

Submit your application to: erin.bertrand@dal.ca

Applications will be accepted until the position is filled.