



Postdoctoral opportunity

University of New Brunswick,
Mount Allison University

We are seeking a postdoctoral fellow for a collaborative research program (funded by Net Zero Atlantic, MITACS, and Horizon Europe) on **carbon sequestration potential of mudflats in the Bay of Fundy**. Mudflats are biologically productive, can be extensive, and accrete with sea level rise, and so bury much carbon. The program focuses on New Brunswick, but will be in collaboration with a team of European researchers. Topics to be studied include:

- **Quantification of buried carbon in mudflats:** Multiple mudflats will be sampled using 1-m long sediment cores (representing decades to centuries of burial) to assess and quantify profiles for buried organic carbon components. This component sets the context for the rest of the project below.
- **Satellite remote sensing of primary producers (microalgal biomass) in mudflats:** Methods using Sentinel-2 imagery, ground-truthed with field sampling, will be developed to map microalgal biomass (the main driver of CO₂ uptake) on mudflats.
- **CO₂ exchange with the mudflat surface, and mapping gross primary production on mudflats:** Eddy-covariance technology will be used to monitor gas fluxes on mudflat footprints, and methods will be developed to determine the relationship between CO₂ gas exchange and microalgal biomass. These results will ultimately be used to map gross primary production (i.e., CO₂ uptake) at the scale of mudflats
- **Detailed study of gas exchange at the mudflat-air interface, photophysiology, and identification of microbial taxa involved in carbon dynamics:** Focused studies will be conducted to understand and properly model relationships among the microalgal biofilm biomass, its detection, and the uptake in CO₂, as well as to start to identify potential relationships with other carbon dynamics, such as storage in mudflat sediments.

Co-principal investigators: Drs. Myriam Barbeau & Adrian Reyes-Prieto (UNB), Diana Hamilton, Jeff Ollerhead & Doug Campbell (MTA), Graham Clark (StFX), Vona Méléder and Bruno Jesus (University of Nantes), Koen Sabbe (Ghent University), Amanda Loder (ECCC), and Nic McLellan (DUC).

Postdoctoral position:

We are seeking a postdoctoral fellow with expertise and interest in the above-described research. The individual hired for this position will oversee the research conducted in New Brunswick, and we anticipate that they will select one or two of the focused studies for their personal research. We are also open to additional related topics if applicants have ideas that will complement the overall project. This position is for a **minimum of 18-months in duration** with a per annum salary of **\$55,000 plus benefits** (including health, dental, and annual vacation). The position could be based at either University of New Brunswick (Fredericton, NB campus) or Mount Allison University (Sackville, NB).

Application process: This program will start on 1 April 2024. Applications will be considered ASAP until suitable candidates are found (though we have a deadline of 31 January 2024). If interested, please apply ASAP.

Please provide a cover letter describing your background, interests, and qualifications for the position, a resumé, and names and contact information for 3 referees to:

<p>Dr. Myriam Barbeau Dept. of Biology, University of New Brunswick PO Box 4400, Fredericton, N.B., E3B 5A3, Canada. <i>Email:</i> mbarbeau@unb.ca</p>	<p>Dr. Diana Hamilton Dept. of Biology, Mount Allison University 63B York St. Sackville, N.B., E4L 1G7, Canada. <i>Email:</i> dhamilto@mta.ca</p>
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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.