

## Seasonal and spatial changes in the origins of export productivity in the submarine canyons systems of the Lower St. Lawrence Estuary (Quebec, eastern Canada)

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Mooring coming back at the surface. Photo: Audrey Limoges

The northern shore of the Lower St. Lawrence Estuary (LSLE) has a rugged topography with incisions cutting across the shelf and connecting the coast to the Laurentian Channel. The presence of these submarine canyons is hypothesized to influence hydrodynamic processes, which channel and concentrate suspended sediment and nutrients, thereby possibly playing a role in local marine productivity dynamics. However, despite the presence of regional biological hotspots, the relation between canyon activity and surface primary production has never been investigated.

The objective of this M.Sc. project is to document seasonal successions and spatial changes in primary production in the Pointe-des-Monts canyon system (eastern Canada). This work will be based on microscope analysis of algal cells and microfossils, and geochemical analyses (e.g., compound specific isotopes) applied on sequential sediment traps, surface sediment samples, and a selection of short cores from inside and outside the canyon.

The student recruited as part of this M.Sc. project will have the opportunity to participate at least one sampling campaigns in the LSLE aboard the R/V Coriolis II, as well as attending national and international scientific meetings.

## **EXPECTED STARTING DATE**

Fall 2020 (September) or winter 2021 (January) at the latest.

## **STUDY PROGRAM**

M.Sc. in Earth Sciences from University of New Brunswick (UNB), Fredericton, New Brunswick, Canada.

For more information on the master program in Earth Sciences at UNB:

<https://www.unb.ca/gradstudies/programs/earth-sciences.html>

A short internship at the Dalhousie University (Halifax) is planned during the development of the master project.

For more information on UNB (<https://www.unb.ca/fredericton/science/depts/earth-sciences/index.html>) and Dalhousie U. (<https://www.dal.ca/faculty/science/earth-environmental-sciences.html>)

## **SCHOLARSHIP**

For this project, a scholarship of 21 000 \$CAN/year is available for 2 years. This salary can be topped-up by teaching assistantship. The student will be encouraged to apply for national and provincial scholarships and grants.

## **DESIRED QUALIFICATIONS**

Candidates should hold a B.Sc. degree in Earth Sciences, Oceanography, Biology or any relevant domain. The candidate should be well-organized, and have a background in geochemistry and microscopy. The student should demonstrate excellent communication skills (English and/or French, oral and written) and be willing to travel to Halifax (Nova-Scotia) for meetings and research internships.

The candidate should also satisfy the basic admission requirements of UNB for the master program in Earth Sciences. Applicants must be proficient in written and oral English.

## **HOW TO APPLY**

Please send all the documents listed below in one PDF file to Audrey Limoges ([alimoges@unb.ca](mailto:alimoges@unb.ca)):

- 1) Cover letter;
- 2) CV;
- 3) All university transcripts;
- 4) A list of practical and technical skills;
- 5) Names and contact information of two potential referees.

Review of applications will begin now and continue until the position is filled.

We welcome applications from all qualified students. We encourage women, First Nations, Métis, Inuit, members of visible or cultural minorities, LGBTQ and all who may contribute to further diversification of research approaches, ideas and group dynamics.