UQÀM | Université du Québec à Montréal

Université de Montréal

PhD position in Aquatic Ecotoxicology

Title:
Subcellular handling strategies of trace metals (Hg, As, Se, Pb, Cd, La, Ce) in aquatic fish near Rouyn-Noranda (Québec, Canada) and Indian River Lagoon (Florida, US).

Summary
Knowledge of the subcellular behaviour of trace metals in targeted organs is crucial to better understand and predict metal toxicity in aquatic organisms. In this regard, information on the subcellular metal-handling strategies used to cope with these contaminants can help to identify metals of potential concern for risk assessments. In addition to the intracellular fate of metals, characterization of the biomolecules targeted by trace metal are essential to reveal potential metal biomarkers. For that reason, the objective of this PhD project is to determine the subcellular handling strategies of several elements (Hg, As, Se, Pb, Cd, La, Ce) in vertebrates inhabiting two metal-impacted ecosystems. Fish species from lakes located in the mining region of Rouyn-Noranda (Québec) as well as others organisms collected near the Indian River Lagoon system (Florida), which receives urban, industrial and agricultural effluents will be investigated in this project. To address our research questions, approaches related to environmental metallomics such as subcellular metal partitioning and hyphenated techniques will be applied. This research will reveal information about the molecular and subcellular mechanisms by which trace metals interact and the biomolecules harmfully targeted by these contaminants with a potential use as biomarkers in monitoring programs. All these results will greatly improve our knowledge to understand the risk that trace metals may pose in aquatic environments.

Requirements
- ✓ To meet the eligibility requirements for the PhD in Biology research program offered by UQAM.
- ✓ Background and skills in environmental chemistry, biochemistry, biology, toxicology, analytical chemistry or other related fields
- ✓ Good skills in the field and laboratory work
- ✓ Strong interest in scientific research and environmental toxicity
- ✓ Knowledge of spoken and written French or/and English

Start date
September 2021

Supervisors
Maikel Rosabal (Département des sciences biologiques, UQAM)
http://rosabal-laboratory.com/

Marc Amyot (Département de sciences biologiques, Université de Montréal)
https://labomarcamyot.weebly.com/

PhD program
PhD in Biology, Département des sciences biologiques, UQAM

Funding
PhD scholarship offer for 3 years.
Possibility to apply to other scholarship support (GRIL; Faculty of Sciences, UQAM)

Applicants must send:
-An updated CV (pdf format), including project and academic works in preparation
-A statement of research interests
-Academic transcripts (BSc, MSc)
-Recommendation letters or contact information from 2 potential references

Closing date for applications: 15 June 2021

Once all applications have been received, the selection process will begin and will continue until the position is filled.

Contact:
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environmental METALLOMICS LABORATORY