

PhD research in Analytical Nanogeochemistry

The ICAN program (Interlaboratory Collaboration for Analytical Nanogeochemistry) is seeking an enthusiastic PhD student with an explorer's mindset, to undertake foundational studies in the emerging research areas of environmental and analytical nanogeochemistry.

Analytical methods such as field-flow fractionation coupled to ICP-MS and single-particle ICP-TOFMS are capable of separating and simultaneously measuring the size and concentration of dozens of elements in individual particles with sizes between 1 nm and 5 μm . These and other new methods provide unprecedented potential for measuring and understanding the origins, transport, transformations, and bioaccessibility of the smallest particles and macromolecules; however, challenges remain for the optimization of sample analysis, data collection and interpretation. The need to develop and optimize algorithms and computing capacity to analyze the large amount of data produced by spICP-TOFMS also limits progress. Connecting these results to natural conditions requires the development and testing of sampling and storage methods. Connecting the integrated properties of nanoscale particle systems to their environmental roles and impacts requires innovative conceptual and experimental approaches.

This position provides an exciting opportunity to undertake research in the nascent interdisciplinary field of environmental nanogeochemistry, by learning and applying knowledge from analytical chemistry, data science & statistics, geochemistry, and nanoscience. The position will be grounded at the Grenfell Campus of the Memorial University of Newfoundland in beautiful Corner Brook, NL, but travel to undertake research at other universities in Canada will be part of the program and international travel is probable. A background in analytical chemistry and statistics or data science is necessary. A start date of Jan. 2023 is preferred, but the spring semester is possible in exceptional circumstances.

To apply, please send your cover letter with statement of interest, CV and transcripts to Dr. Chad W. Cuss at chadcuss@grenfell.mun.ca with the subject line "APPLICATION: PhD in Analytical Nanogeochemistry". Applications will be accepted until end of day on July 31, 2022.

The ICAN program and Memorial University are committed to employment equity and diversity. While all qualified individuals are encouraged to apply, applications are especially welcome from qualified individuals identifying as members of one or more of the following underrepresented groups: first-generation university students; Indigenous peoples; people with disabilities; people of any sexual orientation, gender identity, or gender expression; visible minorities and racialized people; and women. Applicants are invited to identify themselves as a member of any or several of these designated group(s) in their cover letter as appropriate. This information will be treated as strictly confidential, and will be destroyed after the recruitment process is complete. Applicants from a designated group who choose not to specify the group may instead identify themselves as "a member of a nonspecific designated group".