Vita

Candidate's name: Margaret Anne Atkinson

Universities Attended:

University of Guelph (2021)
Bachelors of Science Hons.

University of New Brunswick (2024)
Masters of Science
Earth Science

Publications/Conference Presentations:

Broom, L.A., Bennett, R., Normandeau, A., Hayward, S.E., Atkinson, M (2024). CCGS Amundsen 2023804: seabed mapping and marine geohazards in Nunatsiavut, Newfoundland and Labrador and Baffin Bay, Nunavut. Geological Survey of Canada, Open File 9157.

Limoges, A., Normandeau, A., Eamer, J., Van Nieuwenhove, M., Atkinson, M., Sharpe, H., Audet, T., Carson, T., Nochasak, C., Pijogge, L., Winter, J. (2023). 2022William-Kennedy expedition: Nunatsiavut Coastal Interaction Project (NCIP). Geological Survey of Canada, Open File XXXX, 100 p. In progress.

Atkinson M, Limoges A, Normandeau A, Van Nieuwenhove N, Woollett J. 2023 (Poster) Late-Holocene Changes in Oceanographic Conditions offshore Nain (Nunatsiavut) ArcticNet ASM, December 4 to 8. (refereed)

Atkinson M, Normandeau A,, Van Nieuwenhove N, de Vernal A, Saunders M, Woollett J, Limoges A. 2024 (Oral) Late Holocene changes in the Coastal Labrador Current and export primary production offshore Nain, Nunatsiavut. Atlantic Geoscience Society Colloquium, February 2 to 3. (refereed)

Labrador Coastal Current and productivity variations offshore Nain (Nanatsiavut) during the Late Holocene

UNIVERSITY OF NEW BRUNSWICK

THESIS DEFENCE AND EXAMINATION

in Partial Fulfillment

of the Requirement for the Degree of
Master of Science

by

Margaret A. Atkinson

in the Department of Earth Science

U.N.B., Fredericton, N.B.

Thursday, May 16th, 2024
10:00 a.m.

Forestry/Geology Building, Room 23

Examining Committee

Dr. Audrey Limoges	Co-Supervisor
Dr. Alexandre Normandeau	Co-Supervisor
Dr. Karl Butler	Internal Examiner
Dr. Les Cwynar	External Examiner
Dr. Chris McFarlane	Chair of Oral Examination

Abstract

The Labrador Coastal Current (LCC) has a strong influence on the coastal ecosystems and climate along the Labrador coast. With anthropogenic climate warming, it is not well known how changes in the LCC will affect future coastal ecosystems and associated subsistence resources that are crucial to northern communities. We present a high-resolution record of changes in the sea-surface and near-bottom conditions of the LCC during the last 3200 years based on multiple proxies extracted from a sediment core. The data show multi-centennial variations in the LCC, including significant changes in the sedimentary and biogenic proxies that were coeval with regional-scale changes in ocean and/or atmospheric circulation (i.e., North Atlantic Oscillation), and intervals of decreased LCC strength during intervals of inferred weaker Atlantic Meridional Overturning Circulation and polar water influence. This study highlights the complex nature of the LCC and provides baseline data for the calibration of climate models.