
**Provenance of sedimentary rocks of the
Seal Lake Group, central Labrador**

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[Poster]

The Seal Lake Group is located in central Labrador and is Mesoproterozoic (ca. 1.25 Ga) in age, and lies close the Grenville Front in the Grenville Province, Labrador. It is comprised of argillaceous and arenaceous sedimentary rocks, basalt flows and intruded by gabbro sills folded into an east-trending syncline. The group is the youngest volcanic-sedimentary succession in the Central Mineral Belt (CMB), which is known to host significant uranium occurrences. Understanding basement cover relationships in the CMB is important to understanding the tectonic history of the belt and the geological setting for uranium mineralization.

This thesis project involves the study of provenance of the sedimentary rocks in a number of the formations of the Seal Lake Group. The study will focus on the Wuchusk Lake Formation that is characterized by arenaceous sedimentary rocks with shale, slate and gabbro sills, and is thought to be in the lower part of the stratigraphy. The main purpose of this study is to determine the source of sediments based on the age distribution of detrital zircons and constrain age of deposition based on the age of the youngest detrital zircon. Most models propose that the Seal Lake Group has been thrust over rocks of the 1.65 Ga Trans Labrador Batholith (TLB), during the Grenville collision. If this were the case, we would expect a significant population of detrital zircons with ages of 1.65 Ga. If instead the Seal Lake Group overlies basement significantly older or younger than the TLB, we would expect most detrital zircons to have ages other than 1.65 Ga.

During the months of July and August 2009 ten samples of the Wuchusk Lake Formation were collected. The field study concentrated on the area covered by the NTS map areas 13K/5 and 6. Thin sections from the samples will be prepared for petrographic study. Detrital zircons will be separated from three to four samples for dating purposes. These samples will be dis-

aggregated and put through heavy liquid separation to concentrate the zircons. The zircons will then be picked out and mounted, followed by imaging them on the SEM and dating by LA-ICPMS using the U-Pb method.