

PhD position at the Geo-and Thermochronology Lab at the University of Calgary

The objective of this project is to determine the thermal history and differential uplift in British Columbia's (BC) copper porphyry deposits. The project includes a large laboratory component including the acquisition of new U-Pb, fission track and (U-Th)/He thermochronology data on zircon, apatite and titanite. Samples will be collected at four porphyry deposits in BC at varying depths and distances around the deposits. The goals of this project are to develop a new tectonic model for understanding the timing of mineralization, post-mineralization exhumation, and structural modification

This project is part of the NSERC Alliance grant on "Porphyry fertility and vectoring at the belt to deposit scale in British Columbia" lead by the Mineral Deposit Research Unit ([MDRU](#)) at the University of BC. This project includes 5 academic partners and 15 industry partners and will involve a total of 11 graduate students, 6 undergraduate, and 3 postdoctoral researchers. The candidate thus will conduct research in a large and diverse team that provides not only academic but also practical training from the mineral exploration companies.

Why copper porphyry deposits? Copper is one of the most important metals needed to transition to a low-carbon energy economy, and is a key component in electric cars, solar panels, wind turbines and associated electrical infrastructure. Over the next 30 years, copper demand is expected to more than double. To supply the required copper, the world will need to identify significant new copper deposits. Porphyry copper deposits are one of the world's most important types of copper deposits with several significant deposits currently mined in BC. However, porphyry copper deposits are becoming increasingly difficult to find, as the deposits at or near-surface have mostly been discovered. This NSERC Alliance project aims to improve the efficiency and pace of porphyry copper discovery in British Columbia by providing mineral exploration companies with new tools and knowledge to identify the most fertile deposits, and "vector" their efforts towards those deposits.

We are looking for a highly motivated student with a deep interest and background in laboratory analysis. The project will include a significant number of analyses conducted mostly in-house at the [Geo-and Thermochronology Laboratory](#). These analyses will not only include standard dating procedures but will require the development of new methods and lab protocols for multi-method dating, as well as thermal history modeling. The PhD student will work closely with the Dr. Eva Enkelmann and all group members at the [Geo-and Thermochronology Group at the University of Calgary](#). Collaboration with the project partners based in Vancouver will be accomplished through regular meetings and joint field work.

This PhD position is fully funded (salary and analytical costs). Those interested are asked to send a full CV and a brief research interest statement via email to eva.enkelmann@ucalgary.ca

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