

Victoria Scoging, The University of British Columbia, Okanagan, British Columbia, Canada for her project: *Critical metal enrichment by post-deposition deformation in sulphides from northern British Columbia, Canada*



I am a PhD candidate in the Department of Earth and Environmental Sciences at the University of British Columbia Okanagan, working under the supervision of Dr. Renelle Dubosq. My research investigates how sulphide minerals, particularly pyrite, incorporate and mobilize critical metals in its crystal structure.

Pyrite can incorporate trace metals during its primary growth; however, these metals may be redistributed when the mineral is modified by subsequent deformation. My research explores how deformation and fluid-mediated dissolution-reprecipitation may modify primary pyrite growth and can remobilize and enrich economically significant metals. By understanding how metals behave during post-depositional modification, my work aims to improve our understanding of how mineral deposits evolve after their initial formation as well as how such processes influence the distribution and enrichment of metals.

I use high-resolution analytical techniques to examine these processes from the micro-to nanoscale. Specifically, I apply scanning electron microscopy (SEM), including electron backscatter diffraction (EBSD) and electron channelling contrast imaging (ECCI), to characterize areas of deformation and their associated microstructural features in pyrite. These observations are later combined with laser ablation inductively coupled plasma time-of-flight mass spectrometry (LA-ICP-TOF-MS) to map the distribution of trace metals and determine their relationship relative to microstructural features.

The Howard and Jean Lipman Foundation Student Research Grant will support the analytical costs associated with this mineral-chemical and microstructural characterization, helping determine how post-depositional processes influence critical-metal enrichment in sulphide minerals.