

## **Geological Mapping of the stratabound V rich mineralization at the Van Property, Yukon Territory**

**DANIELLE MCGILL AND DANIEL DAVID GREGORY**

University of Toronto

Presenting Author: [danielle.mcgill@mail.utoronto.ca](mailto:danielle.mcgill@mail.utoronto.ca)

Vanadium is an increasingly important critical element, in part due to its potential as a component in batteries - something needed as we transition towards a green economy. To provide for this need the discovery and development of new deposits is essential. A potential new deposit type is stratabound metalliferous shales. Different kinds of this deposit type have been identified at several different times in Earth's history [1] but only in southern China and northwest Canada have they been found to be strongly (~0.5%) enriched in V. Currently, it is poorly understood how these deposits form. One of the key initial steps needed to understand the formation of metal deposits is detailed mapping so future chemical analyses can be put into the correct 3-D geological context. That is the objective of this study. We will present detailed geological mapping of the highly V enriched shale in the Selwyn Basin, on the border of the Yukon Territory and the Northwest Territories (NWT) known as the Van property. These data will provide the initial understanding of the sedimentary and structural environment of the shale that will allow us to choose which geochemical analyses should be conducted to develop an up-to-date predictive model for this type of mineralization.

[1] Johnson, S. C., Large, R. R., Coveney, R. M., Kelley, K. D., Slack, J. F., Steadman, J. A., Gregory, D. D., Sack, P. J., and Meffre, S., 2017, Secular distribution of highly metalliferous black shales corresponds with peaks in past atmosphere oxygenation: *Mineralium Deposita*, p. 1-8.