

Bryan Maciag, Dalhousie University, Halifax, NS for his project: *Speciation of Arsenic and Antimony in Felsic Magmas and Apatite*

Bryan Maciag completed his B.A.Sc. (2010) in honours geological engineering at the University of Waterloo before proceeding to complete a M.Sc (2012) at Queens University. Following his education, Bryan proceeded to toil as an exploration geologist working at several different deposits, including the Black Thor Chromitite Deposit in the Ring of Fire, Ontario. Unfortunately, the economic downturn struck and Bryan was left unemployed like many other geologists. Jaded with doing nothing and looking for gainful employment, Bryan decided to follow his long-suppressed ambitions and complete a Ph.D. in Experimental geochemistry. After talking with many professors at different universities, Bryan decided to attend Dalhousie University, in the fall of 2016 under the tutelage of Dr. James Brennan.

Bryan's Ph.D. research focuses on the geochemistry of arsenic and antimony in magmatic systems. In particular, Bryan is interested in understanding how the speciation of these toxic elements varies in the melt phase as a function of oxygen fugacity. This research has implications for both PGE sequestration in magmatic sulphide deposits and the availability of arsenic and antimony for heavy metal leaching in igneous rocks. Additionally, Bryan is also working to develop an oxygen barometer for use in felsic systems, of which there is a current

need. This oxygen barometer will be based on the partitioning of arsenic between apatite and melt. To complete his research Bryan will use a number of different experimental techniques to synthesize his melts, and a number of analytical techniques to identify the concentration and speciation of arsenic and antimony.

