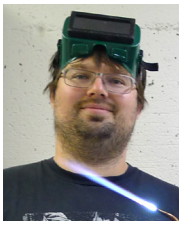
Mineralogical Association of Canada

www.mineralogicalassociation.ca

MAC FOUNDATION SCHOLARSHIP WINNERS

We congratulate Bryan Maciag and Corwin Trottier, recipients of the 2017 Mineralogical Association of Canada (MAC) Foundation Scholarships.



Bryan Maciag completed his BASc (2010) in honours geological engineering at the University of Waterloo (Canada) before proceeding to complete an MSc (2012) at Queens University (Canada). Following his education, Bryan proceeded to toil as an exploration geologist, working at several different deposits that included the Black Thor Chromitite Deposit in the Ring of Fire, Ontario (Canada). Unfortunately, the economic downturn struck, and Bryan was left unemployed, like many other geologists. Jaded with doing nothing and looking for gainful employment, Bryan followed his long-suppressed ambitions and completed a PhD in experimental geochemistry. After talking with many professors at different universities, Bryan decided to attend Dalhousie University (Canada) in the fall of 2016 under the tutelage of Dr. James Brenan. Bryan's PhD research is 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 platinum-group element sequestration in magmatic sulfide deposits and the availability of arsenic and antimony for heavy-metal leaching in igneous rocks. Additionally, Bryan is working to develop a much-needed oxygen barometer for use in felsic systems. 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 melts and a number of analytical techniques to identify the concentration and speciation of arsenic and antimony.

Corwin Trottier received a BSc in geology from Saint Mary's University (SMU) (Canada) in 2016. His major undergraduate research project focused on fluid inclusion micro-thermometry, cathodoluminescence, and stable isotope chemistry of complexly zoned quartz in hydrothermal so-called "five-element" veins in the Slave Province (Northwest Territories, Canada). Growing interest in this project presented an opportunity for Corwin to begin his current MSc project in Dr. Jacob Hanley's research group at SMU. This project focuses on geochemical signatures of a uranium-bearing five-element system at the historic Eldorado Mine in Port Radium (Northwest Territories). Corwin began his research with a detailed paragenetic study of ore minerals from a diverse collection of mine samples. This revealed a rhythmic intergrowth of uranium within the typical five-element mineralization sequence. He then examined trace element and stable isotope data from the chemically zoned uraninite to constrain the role of uranium in the system. He also used cathodoluminescence and micro-thermometry to study associated quartz and carbonate veins, which host accessible fluid inclusions from different mineralization stages. Ongoing research will use fluid inclusion chemistry as a tool to investigate observed mineral parageneses within a geochemical framework. The goal of this project is to develop a model for the five-element mineralization sequence, with particular attention to the sources of the fluids and of the key metals. This will serve as a valuable comparison to similar mineral occurrences in the Northwest Territories, and may improve exploration techniques for other economically viable deposits.

UPCOMING CIM–GAC–MAC JOINT MEETING

THE CLOCK IS TICKING
REGISTER NOW!

We are only four months out from the first joint meeting between the Canadian Institute of Mining, Metallurgy and Petroleum, the Geological Association of Canada, and the Mineralogical Association of Canada: the CIM–GAC–MAC joint meeting. This ground-breaking, first-of-its-kind conference represents a fundamental grass-roots effort by practitioners, professionals and academics to raise important and difficult questions around how to supply resources for future generations. This effort is bringing together 50 technical partners to be part of a defining moment in shaping the conversation about resources and sustainability.

Geoscientists, members of civil society, and the public … we all have different ways of relating to what lies beneath our feet, to what we think when we pump water from a well, and to how we connect our lifestyle to the Earth. This conference provides an opportunity to share your science, tell your story, add your perspective and be part of seeking solutions to human sustainability.

REGISTER NOW! There will be a wealth of sessions to attend, as well as short courses, field trips, great social events and a strong Early Career Program - you won't want to miss out on this event!

Members of the CIM, GAC and MAC who are in good standing will be eligible for the reduced member rate.

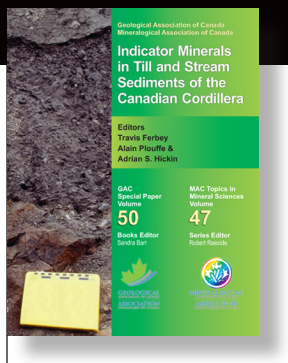
End of early-bird registration rate – 15 April 2018
Register at: rfg2018.org

NOW AVAILABLE

Indicator Minerals in Till and Stream Sediments of the Canadian Cordillera

Edited by T. Ferbey, A. Plouffe, and A.S. Hickin

Volume 47 of the MAC's Topics in Mineral Sciences, formerly Short Course, series



This is the first joint publication of the GAC and the MAC. It is a GAC Special Paper and the inaugural contribution to the MAC's new Topics in Mineral Sciences series, which replaces the MAC Short Course series.

This volume stems from a workshop given in 2016 at the annual Geological Association of Canada-Mineralogical Association of Canada (GAC–MAC) meeting in Whitehorse, Yukon. The workshop was led by the British Columbia Geological Survey with support from the Yukon Geological Survey and the Geological Survey of Canada.

This volume consists of a series of papers of importance to indicator minerals in the Canadian Cordillera. Topics include the glacial history of the Cordilleran Ice Sheet, drift prospecting methods, the evolution of survey sampling strategies, new analytical methods, and recent advances in applying indicators minerals to mineral exploration. Hickin et al. review the geology and glacial history of the Canadian Cordillera in British Columbia. Lian and Hickin describe the origin and character of till deposits and how to distinguish subglacial till (the most effective sample medium for till geochemical and mineralogical surveys) from other glacial and non-glacial deposits. Lett and Rukhlov examine the historical evolution of regional geochemical surveys in the Cordillera and discuss the growing diversity of sample media used. Hickin and Plouffe provide an overview of sampling strategies and interpretive concepts, including recent developments in using indicator minerals to identify specific deposit and alteration types and sources of geochemical anomalies. Plouffe and Ferbey consider the use of indicator minerals to explore for buried porphyry copper mineralization. The paper by Canil et al. demonstrates the potential of hydrothermal magnetite to identify porphyry copper-goldmolybdenite deposits, and Simandl et al. establish that several carbonatite indicator minerals contain elevated concentrations of high field strength elements. In the final paper, Mao et al. use detrital apatite compositions and till geochemistry to test new step-wise discrimination diagrams in 10 study areas from the Nechako Plateau of central British Columbia.

This volume fills a notable knowledge gap on the use of indicator minerals in the Canadian Cordillera. We hope that the volume serves as a user guide, encouraging the wider application of indicator minerals by the exploration community.

ORDER ONLINE AT: WWW.MINERALOGICALASSOCIATION.CA

IN MEMORY OF DR. PETE J. DUNN (1942–2017)

Pete J. Dunn at the Smithsonian in 2002. Photo by Herb Yeates

It is with great sadness that I report the passing of Dr. Pete J. Dunn on 8 November 2017, two days short of his 75th birthday. Pete was a museum specialist and mineralogist in the Department of Mineral Sciences Smithsonian Institution, National Museum of Natural History (Washington, DC, USA) from 1972 until he retired in January 2008. Prior to his arrival at the National Museum of Natural History, he was a curator in the Geology Department at Boston University (USA) and he served in the United States Air Force. He completed his Master's degree in mineralogy at Boston University and his PhD in mineralogy/geology from the University of Delaware (USA). During his time at the Smithsonian, Pete was internationally recognized for his research on the mineral collection that resulted in descriptions of 134 new minerals. He had a particular passion for the complicated and fascinating geology and mineralogy of the Franklin–Sterling Hill mining district in New Jersey (USA), publishing more than 70 scientific papers and a nine-volume monograph that are among the definitive scientific works for that locality for researchers, collectors, and the public. In addition to his prolific research activities, Pete was the United States representative to the International Commission on New Minerals and Mineral Names for over two decades, and was an associate editor for the *American Mineralogist*, the *Mineralogical Record* and *Neues Jahrbuch für Mineralogie*. Pete retired in January 2008 and immediately returned to the museum as an Information Desk volunteer. He will be greatly missed.

Jeffrey E. Post, PhD, Smithsonian Institution