# Mineralogical Association of Canada

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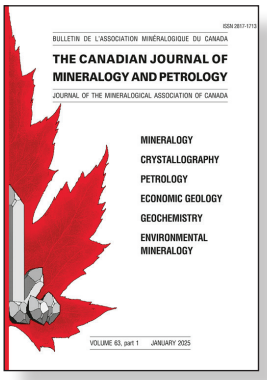
## NEWS FROM *THE CANADIAN JOURNAL OF MINERALOGY AND PETROLOGY* (CJMP)

### *Highlights*

The January 2025 issue of *CJMP*, volume 63 (1), features two brand new minerals for your future collections, including kreiterite, a cesium-lithium mica from Tajikistan, and jimkrieghite, a Ca glycolate mineral from Arizona, brought to us by our friends in, well, Arizona (with some assistance from China). Jim Kriegh, incidentally, was a U.S. Army veteran and then civil engineer, but more pertinently in this context, a meteorite hunter of note, and a founding father of the city of Oro Valley (near Tucson) where his eponymous mineral was found. Kreiterite was named for the Russian exploration geologist Vladimir Mikhailovich Kreiter, who contributed to the first geological explorations of remote parts of central Asia in the 1930s. If these minerals were all as interesting as their namesakes, they'd be featuring in films (or at least made-for-streaming dramas). This mineral has been brought to us by colleagues in Moscow and Manitoba, mainly.




For our readers who have been struggling with the lack of reliable thermodynamic data for copiapite-group minerals, your troubles are over, thanks to colleagues in Germany and Austria. I sound facetious here, but copiapite-group minerals are common weathering products of sulfides, particularly pyrite and pyrrhotite, arguably the two most common ones, and as such, are very important in acid mine drainage and in gossan formation, among other things (including evidence for them from Mars and Venus). We also feature evidence of primary uranyl deposition in uranium deposits from the Athabsaca Basin (Canada), and anomalous Cu peaks induced by secondary fluorescence in sphalerite, as well as Jurassic Be and U mineralization in China.

Our recently most-read publications, according to GeoScienceWorld, show interest in tourmaline back on top:

Still on top, but changing positions as #1 like new Taylor Swift offerings, we have ***Trace Element Characteristics of Tourmaline in Porphyry Cu Systems: Development and Application To Discrimination*** and ***Recognizing Tourmaline in Mineralized Porphyry Cu Systems: Textures and Major-Element Chemistry,*** both by Christopher Beckett-Brown, Andrew McDonald, and Beth McClenaghan. These both appear in volume 61 (1) from 2023 *CJMP*.

In a distant third place is ***Growth and Stability of Stratiform Carrollite ($CuCo_2S_4$) in the Tenke-Fungurume Ore District, Central African Copperbelt*** by Bjorn Von Der Heyden, Jeffrey Dick, Ryan Rosenfels, Luke Carlton, Kristina Lilova, Alexandra Navrotsky, Tamilarasan Subramani, Brian Woodfield, and Alexis Gibson.

The currently most recently cited CJMP papers, according to GeoscienceWorld statistics, is a three-way tie between **On the Attributes of Mineral Paragenetic Modes** by Robert Hazen, Shaunna Morrison, Anirudh Prabhu, Jason Williams, Michael Wong, Sergey Krivovichev, and Marko Bermanec, in volume 61 (4) from 2023, ***New Minerals from the Redmond Mine, North Carolina, USA: I. Redmondite, Hydroredmondite, and Sulfatoredmondite, Three Minerals Containing the Novel $[Pb_8O_2Zn(OH)_6]^{8+}$ Structural Unit*** by Anthony Kampf, Jason Smith, John Hughes, Chi Ma, and Christopher Emproto, and finally once again our most read paper, ***Trace Element Characteristics of Tourmaline in Porphyry Cu Systems: Development and Application To Discrimination***, as listed above. Good to see it's being both read and used!

Future releases will include a strapping new Pegmatites thematic issue devolving (evolving?) from the 2024 Pegmatites meeting held in Brandon, Manitoba, expected probably in September.

## MAC TRAVEL & RESEARCH GRANT WINNERS 2023

We congratulate Serhiy Buryak, Catriona Breasley, and Bianca Currie, each of whom received a 2023 Mineralogical Association of Canada Travel & Research Grant.

### *Serhiy Buryak*

Serhiy Buryak is a PhD candidate in the Department of Earth and Atmospheric Sciences at the University of Alberta (Canada). His PhD research project is entitled "Applications and challenges of zircon geochronology to Pliocene-Pleistocene tephra in Eastern Beringia."

The focus of his research is to refine and re-evaluate the chronological framework of key Quaternary tephra deposits in Yukon and Alaska by utilizing novel geochronological techniques. A significant part of his research includes developing methods for the radiometric dating of zircon crystals and creating statistical models to simulate the eruption ages of young volcanic deposits. Facilitated by the MAC grant, Serhiy presented a talk entitled "Applications and challenges of laser-ablation ICP-MS zircon U-Pb and U-series dating of young Quaternary tephra beds" at the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI) 2023 Scientific Assembly, New Zealand. This experience allowed Serhiy to receive helpful feedback and expand his professional network.

### *Catriona Breasley*

Catriona Breasley is a current PhD fellowship student at the University of British Columbia (Canada) under the supervision of Lee Groat, Tania Martins, and Robert Linnen. She completed her integrated master's degree with first-class honors at the University of St. Andrews in Scotland. Her PhD research focuses on lithium mineralization within the Tanco pegmatite, Manitoba in collaboration with Sinomine Resources Group Ltd. and the Manitoba Geological Survey. She was awarded the MAC travel grant to attend the GAC-MAC-SGA 2023 conference in Sudbury, Ontario, where she presented her research on trace element geochemistry and quantitative analyses of spodumene and quartz intergrowth textural groups at the Tanco pegmatite. She uses multiple techniques including X-ray computed tomography, electron backscatter diffraction, and cathodoluminescence, to understand the origins and formation of spodumene in three dimensions. By presenting her work at a national conference, she was able to have invaluable discussions with other academics, which helped her refine her thesis project.

### *Bianca Currie*

Bianca Currie completed her BSc Honors thesis at the University of Western Ontario (UWO) in 2023 and started her MSc in Earth Sciences at the University of New Brunswick in the Fall. Bianca used her MAC travel grant to attend the 2023 Annual Joint GAC-MAC-SGA meeting in Sudbury, Ontario to present her findings from her thesis. Her BSc thesis "Rare Radionuclide Production in Ancient Hypersaline Brines" presented nuclear physics simulations of the production of long-lived rare radionuclides 236-uranium and 36-chlorine in the ~2-Gy-old brine located in Kidd Creek Mine (KCM), Timmins, Ontario, Canada. FLUKA/FLAIR software was used to simulate the theoretical geochemical conditions deep in the KCM fracture network and brine reservoir to produce rare radionuclides that were detected in the brine via AMS. Simulations and research were conducted at TRIUMF, Vancouver in 2022 and 2023 in addition to her senior year at UWO. Her research is the beginning of many potential studies relating the local geologic/geochemical and nuclear physics conditions to radioisotope production in terrestrial hypersaline brines, and possibly those of other planetary bodies in the Solar System.

## UNDERGRADUATE AWARDS 2024

The Mineralogical Association of Canada Undergraduate Student Awards are given annually to undergraduate students (2nd year of study or higher) at a recognized Canadian university or institute of higher education for excellence in one of the specialties supported by the society: mineralogy, crystallography, geochemistry, petrology, and mineral deposits.

Congratulations to the following students who received this award in 2024:

MILA SZAUTNER, University of Saskatchewan
KIDUS WOLDEMEDEHN, University of Alberta
KAYLA SANDERSON, University of Victoria
CASSANDRA OUELLETTE, Laurentian University
DANA MARINO, McGill University
SARAH KUP, Western University
MATTHEW FRIESEN, University of Manitoba
JOSIAH DELORENZI, UBC Okanagan
JACK COMERFORD, Brock University
RIZZIERI BALESTRA, Carleton University
GEMMA ANDERSEN JONES, Memorial University

## MAC SCHOLARSHIP WINNERS 2024

The Mineralogical Association of Canada funds annual scholarships to graduate students.

$3000 scholarships are available to students enrolled in MSc programs and $5000 scholarships are available to students enrolled in PhD programs.

**Maxwell Porter** (MSc, University of British Columbia)
**Sophie Benaroya** (PhD, University of Alberta)
**Xuefei Fan** (PhD, University of Washington)

## MAC TRAVEL & RESEARCH GRANT WINNERS 2024

We congratulate Angelina Abi Daoud and Delaney Carter each of whom received a 2024 Mineralogical Association of Canada Travel & Research Grant.

### *Angelina Abi Daoud*

Angelina Abi Daoud is a master's student at McMaster University (Canada) under the supervision of Dr. Janok Bhattacharya at the Quantitative Sedimentology Lab. Her research explores the paleoenvironmental conditions of the Sikanni and Sully Formations in the Northwest Territories, Canada. Using geochemical proxies, she aims to identify oceanic anoxic events and investigate the relationship between paleooceanic conditions and biodiversity of micro-, macro-, and trace fossils during the critical Albian-Cenomanian boundary. Angelina received the MAC Research Grant to analyze sediment samples collected from the field at the Ján Veizer Stable Isotope Laboratory, University of Ottawa. These samples were analyzed for key paleoenvironmental proxies, including $\delta^{13}C$, $\delta^{15}N$, %S, %C, and %N. The resulting geochemical data, integrated with sedimentological, paleontological, and ichnological analyses, provide valuable insights into the dynamics of the Western Interior Seaway—a vast epeiric sea that divided North America into two landmasses during the mid-Cretaceous. The support provided by the MAC Research Grant was key to performing the analyses needed to uncover new insights into this historically understudied region.

### *Delaney Carter*

Delaney Carter is an MSc student in the Department of Geology at Saint Mary's University (Canada) under the supervision of Dr. Jacob Hanley. She used the awarded travel grant to attend the Canadian Archaeological Association (CAA) 2023 conference in Saskatoon, SK, where she presented her MSc research "Determining the Provenance of Trade Copper from Early Contact sites in Nova Scotia: A Comprehensive Look into Trace Element and Lead Isotope Systematics." Carter's research bridges disciplines, exploring the relationship of material culture and geological sources. Through attending the CAA 2023 conference, she connected with experts and researchers in Indigenous archaeology—a key component of her research—whom she would not have met otherwise, along with enriching her perspective and fostering collaborations outside of her primary field of study.

### *Kiera Hamel*


Kiera Hamel is an MSc student at Memorial University of Newfoundland under the supervision of Dr. Eric Thiessen. Her research is focused on understanding the structural and temporal history of the Striding Mylonite zone, a portion of the Snowbird Tectonic Zone, in the Northwest Territories. The aim is to help clarify the role of the Striding Mylonite zone during assembly of the Canadian Shield through field mapping, petrographic observation, and geochronology of monazite, biotite, and zircon. The MAC Grant allowed Kiera the opportunity to travel to the University of British Columbia Okanagan to collect isotopic age data in the Fipke Laboratory for Trace Element Research. This experience allowed vital project data to be collected and additionally provided practical experience for operation of laser ablation inductively coupled plasma mass spectrometer equipment and unique networking opportunities with other members of the Canadian geoscience community.