Mineralogical Association of Canada

www.mineralogicalassociation.ca

MAC FOUNDATION SCHOLARSHIP WINNERS

We congratulate Christopher Beckett-Brown and Derek Leung, recipients of the 2019 Mineralogical Association of Canada (MAC) Foundation Scholarships.

Christopher Beckett-Brown completed his BSc (2016) at the Harquail School of Earth Sciences, Laurentian University (Canada). His BSc research was supervised by Dr. Andrew McDonald and was on the incorporation of nickel in spinel-group minerals. This resulted in the publication, "The Crystal-Chemistry of Ni-bearing Spinel-Group Minerals: Chemical, Geological, and Exploration Implications" (*The Canadian Mineralogist*, 2018, v56 pp 77-94). Chris then began an MSc at Laurentian which he later upgraded to a PhD in 2018. His current research is on testing tourmaline's potential as an indicator mineral for detecting porphyry Cu–Mo–Au systems. This research is in collaboration with the Geological Survey of Canada's Targeted Geoscience Initiative 5 project, along with numerous exploration companies. The project will focus not only on tourmaline occurring in known deposits but also when found surrounding known deposits in the surficial environment (i.e., till and stream sediments). This research will develop physical criteria (e.g., morphology, color, inclusions, internal textures), and chemical criteria (e.g., major, minor, trace, isotopic) characteristics that will, hopefully, be useful in distinguishing porphyry-related tourmaline from other ore and non-ore environments.

Derek Leung is a Masters by Research (MScR) candidate at the University of Edinburgh (UK) under the supervision of Drs. Florian Fusseis and Ian Butler. His research project, titled "Microscale Characterisation of Damage Evolution in Curling Stones used in International Competition" aims to understand the mineralogical and textural controls on damage to curling stones by using synchrotron microtomography, image analysis, and petrophysical testing of pristine and damaged curling stone samples. Curling stones only come from two locations in the world: the island of Ailsa Craig (Scotland) and Trefor Quarry (North Wales). Popular media suggest that the rocks from Ailsa Craig and Trefor are one-of-a-kind. But what makes these rocks so special? Laying the groundwork for his MScR project, Derek developed an integrated mineralogical and textural baseline of curling stones used in international-level competition for his undergraduate thesis at Laurentian University (Canada) supervised by Prof. Andrew McDonald and Rémy Poulin. As an aspiring mineralogist and international-level curler, combining his passions of mineralogy, geology, and curling is an immense privilege. Derek has also worked on a new mineral species of the palygorskite supergroup (supervised by Prof. Andrew McDonald) and is broadly interested in the modulated structures of the palysepiole polysomatic series. Outside of academia and sport, Derek divides his time on creative projects such as 3-D printing of crystallographic models, pop-up book design, and creative necktie knotting.

STUDENT TRAVEL/RESEARCH GRANTS

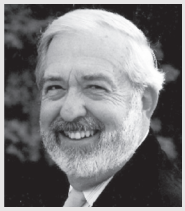
The MAC awards travel and research grants to assist honors undergraduate and graduate students in the mineral sciences. For more information, see www.mineralogicalassociation.ca/. Deadline to apply: 15 January 2020.

UNDERGRADUATE AWARDS 2018–2019

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 2018–2019:

- Peter Baldazzi (Simon Fraser University)
- Alexandre Bénard-Gaudet (Université du Québec à Chicoutimi)
- Johnathan Clarke (University of Waterloo)
- Jayce D. Eadie (University of Alberta)
- Daniel Peter Ferguson (University of Regina)
- Blue Hunter-Moffatt (Carleton University)
- Mélanie King (McGill University)
- Joshua Labrie (Brock University)
- Megan K. Landman (Lakehead University)
- Benjamin A. Myrer (Dalhousie University)
- Deidre Renée Nelson Smith (UBC Okanagan)
- William Pagé (Université Laval)
- Iliajah A. Pidskalny (University of Saskatchewan)
- Taylor M. Robinson (University of Victoria)
- Hannah Sharpe (University of New Brunswick)
- Kayla Soini (Laurentian University)
- Alexis L. Trevors (St Francis Xavier University)
- Miguel M. Vaccaro (Acadia University)

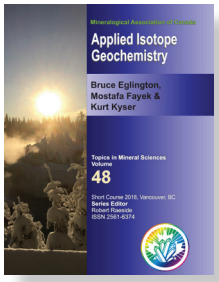
IN MEMORY OF DONALD F. SANGSTER (1935–2018)



It is with great sadness that we report the passing of Dr. Donald F. Sangster on 28 December 2018, age 83. Don was a research scientist with the Geological Survey of Canada for 33 years whose career focused on the geology and genesis of lead-zinc deposits. He was president of the Society of Economic Geologists (SEG) in 1994–1995 and was a long-time MAC member. He was awarded the Duncan R. Derry Medal of the Geological Association of Canada (GAC) (1981), the Silver Medal of the SEG (1984), the Past-Presidents' Medal of the MAC (1986), and the Logan Medal of the GAC (1998).

LATEST RELEASE IN OUR TOPICS IN MINERAL SCIENCES (Formerly Short Course Series)

Applied Isotope Geochemistry, Topics in Mineral Sciences, Volume 48



Short course delivered at the Research for Future Generations, June 2018, Vancouver (British Columbia, Canada)

EDITORS: Bruce Eglington, Mostafa Fayek and Kurt Kyser

SERIES EDITOR: Robert Raeside

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Isotope geochemistry is an integral part of the Earth sciences. This subdiscipline reveals the fourth dimension of our science (time), as well as revealing the processes involved in natural systems and the means by which to trace the flux of elements through the geosphere–hydrosphere–biosphere. As such, isotope geochemistry is built on a platform

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International Association of GeoChemistry

www.iagc-society.org

INTRODUCING THE NEW IAGC COUNCIL MEMBERS

We are happy to announce six new council members for terms beginning in January 2020. The voting council for the International Association of GeoChemistry (IAGC) consists of six regular members and the four chairs of our active working groups. We are grateful for the service of our outgoing regular council members **Patrice de Caritat** (Geoscience Australia), **Stephen Grasby** (Geological Survey of Canada), **Sophie Opfergelt** (Université Catholique de Louvain, France), and **Avner Vengosh** (Duke University, USA). Finally, we give a sincere thanks to our departing working group chairs of **Richard Wanty** (US Geological Survey), who chaired the Applied Isotope Geochemistry Group and **Thomas Kretzschmar** (CICESE, Mexico), who chaired the Water–Rock Interaction Group. Everyone in the IAGC is grateful for your services to the geochemical community.

Working Group Chairs

Romain Millot holds a PhD in isotope geochemistry, awarded 2002, from the Institut de Physique du Globe de Paris (University of Paris, France) and is currently a researcher at the Bureau de recherches géologiques et minières (BRGM), French Geological Survey in Orléans (France). He is a senior project manager in the field of multi-isotope tracing in the environment. He has published more than 60 papers in peer-reviewed journals (14 as lead author) concerning river weathering mass budgets, thermo-mineral and geothermal water characterization, metal pollution source investigation, mineral resources characterization, and the development of analytical tools in isotope geochemistry. Since joining the BRGM in 2003, he has worked on the development and utilization of isotopic tracers in water–rock interactions. He is also involved in projects at the national scale (ANR, ADEME, ANDRA, Water Agency funding) and at the European level (FP6/7 projects: AquaTERRA, Hiti, AquaTRAIN; EIT RawMaterials project: EuGeLi). In 2013, Romain obtained his habilitated doctoral degree from the University of Orléans. Romain is the new IAGC Chair of the Applied Isotope Geochemistry Working Group.

Pierpaolo Zuddas is a professor of geochemistry at Sorbonne University (France). Italian by upbringing and education, he lived and worked in Italy, Canada and France. His career in geochemistry took him from a position with the Marine Salt Agency (Italian Ministry of Finance) to the Non-Nuclear Energy Division of the European Union and then to academic university positions in Italy, Canada and France. He applies thermodynamics, kinetics and surface chemistry to study mineral–solution interactions in aquatic environments and carbonate geochemistry. He has used expertise in the field of water–rock interaction to develop theoretical, experimental and field studies on fluid migration and reactivity in several natural and artificial conditions. He taught at the universities of Cagliari and Palermo (both Italy), McGill (Canada), Lyon (France), where he also served as Chair of the Institute of Environmental Engineering Eco-development. He supervised 18 PhD dissertations of students from different backgrounds and origins. Pierpaolo coordinated, managed or co-managed international programmes on water quality in mining basins, urban and rural areas and media-hosting CO_2 geological sequestration. He also served for agencies and energy companies as a technical expert in supranational and national scientific grants to assess risk in water resources. He served as Secretary General for the Fourteenth International Symposium on Water–Rock Interaction. Pierpaolo is the new IAGC Chair of the Water–Rock Interaction Working Group.

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of pure and theoretical science, but is primarily an applied science that adds value to mineral exploration, environmental stewardship, whole Earth ecology, the timing and causes of evolution, paleoclimate and even food authentication. This short course introduced to the greater geoscience community the utility of using isotopes to understand the processes that govern mass transport in the geosphere. This short course volume is dedicated to both radiogenic and stable isotope applications for the geosciences.

The concept of this book was envisioned by Professor Kurt Kyser (1951–2017), formerly of Queen's University (Ontario, Canada). The volume begins with the application of isotopes to the exploration of volcanic massive sulfide deposits. The next three chapters focus on the application of radiogenic isotopes to mineral and fluid systems, and Chapter 5 introduces current approaches to data assessment, primarily for detrital zircon samples, and introduces some new approaches which aid in the simultaneous treatment of large sets of data. Chapter 6 applies noble gas isotopes to geothermal systems, and in Chapter 7 heavy metal isotopes are used to trace anthropogenic contaminants in the environment. The final chapter is about the application of clumped isotopes and their utility in obtaining information about paleo-environments. This volume does have some glaring omissions, however: there are no discussions on transition-metal isotopes or on the application of isotopes to understanding clay minerals and the hydrosphere. It is our hope that other researchers will be inspired by this work and that, as techniques continue to evolve, a complementary volume will be organized in the future.