



# Mineralogical Association of Canada

www.mineralogicalassociation.ca

## UPCOMING CIM-GAC-MAC JOINT MEETING

# RFG 2018

## Resources for Future Generations

Vancouver, British Columbia, Canada

16-21 June 2018

## THE CLOCK IS TICKING

REGISTER NOW! With a wealth of sessions to attend – plus short courses, field trips, great social events and a strong early career program – you won't want to miss out on this major event.

Those members of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), the Geological Association of Canada (GAC) and the Mineralogical Association of Canada (MAC) in good standing will be eligible for the reduced member rate.

**END OF EARLY BIRD REGISTRATION RATE: 15 APRIL 2018**

**Register at: [rfg2018.org](http://rfg2018.org)**

### Short Courses

The MAC has sponsored two short courses which will be held 16–17 June 2018, two days prior to the Resources for Future Generations (RFG) 2018 CIM–GAC–MAC Joint Meeting technical sessions.

**Geometallurgy.** Environmental and socio-economic demands in the exploitation of future mineral resources require a comprehensive collection and evaluation of mineralogical, geochemical, lithological, physical and metallurgical attributes about ore bodies, along with their inherent variability. Geometallurgy is the scientific discipline that integrates all of the mineralogical, geological, mining and processing data into an accurate ore-body model that forms the basis for optimizing production and environmental management during the entire life of the project. This course will address: (1) The principles of geometallurgy and the critical evaluation of sampling, mineralogical and geochemical methods; and (2) Selected case studies of applications of geometallurgy involving innovative evaluation of mineral deposits, mineral exploration, resource estimation, applications and implementation of quantitative mineralogical and geochemical data, mining and ore processing, energy use, treatment of tailings and waste rock and their remediation, and the implementation of geometallurgical models in mining and plant operations.

Topics covered in this short course will include, but are not limited to, the following:

- Automated mineralogy and applications to geometallurgy
- Overall review
- Geochemistry in geometallurgy
- Mineral surface science applied to mining
- Linking mineralogy to metallurgy
- Geometallurgy for plant operations
- Grinding
- Stochastic Modelling

The short course will last for two days. Organized by Gema Olivo and Tassos Grammatikopoulos.

**Novel Applications of Isotope Geochemistry.** Isotope geochemistry is an integral part of the Earth sciences, particularly in revealing the fourth dimension of our science: time. Data on the timing of geological events can help reveal the processes behind natural systems, and data on time can be used to trace the flux of elements between the geosphere and biosphere. This course addresses recent applications of isotope geochemistry in the Earth sciences and how integrating this field with other disciplines represents a paradigm shift in our understanding of the processes that operate in natural systems. Course lecturers will include the top isotope geochemists in Canada.

Topics covered in this short course include:

- Processes that result in isotopic variability in natural systems
- Application of transition metal isotopes in ore systems research
- Application of isotopes to exploration for volcanic massive sulfide deposits
- Applied U–Pb geochronology of ore minerals by secondary ion mass spectrometry
- Application of Pb isotopes in exploration and environmental science
- Application of Fe isotopes to the evolution of the geosphere
- Noble gas isotopes applied to geothermal resources
- Application of isotopes to understanding clay minerals
- Isotopes in sequestration strategies for environmental waste
- Geochemistry of heavy metal isotopes: tracers of anthropogenic sources and environmental footprint
- New frontiers: clumped isotopes and applications in geoscience research

The course will last for 1.5 days. Organized by Bruce Eglington.

### Field Trips

The MAC has sponsored two field trips which will be held after the RFG 2018 CIM–GAC–MAC joint meeting.

**Tulameen Alaskan-Type Ultramafic–Mafic Intrusion: Architecture, Emplacement Mechanisms and Cr–PGE vs. Cu–PGE “Reef-Style” Mineralization in a Convergent Margin Setting.** The Tulameen ultramafic–mafic complex (British Columbia, Canada) is a classically zoned Alaskan-type intrusion emplaced in a Late Triassic supra-subduction zone setting. This field trip will examine the lithological zoning and temporal evolution of the complex, and contrasting styles of well-documented chromitite–PGE [platinum group element] mineralization in the dunite core and derivative placers versus newly discovered Cu–PGE sulfide mineralization in the more differentiated ultramafic rocks. Highlights include examination of “magmatic avalanche” deposits exposed in the Rulameen River bed, and a 700m zone of Cu–PGE mineralization similar to occurrences documented from layered intrusions in extensional tectonic settings. We will be based in Princeton (3 nights) and leave directly after the conference on Thursday, 21 June, returning to Vancouver by noon on Sunday, 24 June. This trip complements the conference special session “Advances in the Study of Ultramafic Rocks.” A limited amount of financial support may be available for students wishing to participate in the field trip. However, field trip leaders reserve the right to limit the number of students participating. Dates are the 4 days of Thursday, 21 June to Sunday, 24 June. Organized by Graham Nixon and Dejan Milidragovic.

**Upper Fir Carbonatite-Hosted Nb-Ta Deposit, Blue River Area, East-Central British Columbia.** This field trip will visit the Upper Fir carbonatite-hosted Nb-Ta deposit in the Blue River area, east-central British Columbia. The area is within the Omineca Belt of the Canadian Cordillera, at the northeastern margin of the Shuswap Metamorphic Complex, in the Monashee Mountains. Metacarbonatites and associated ultramafic and alkaline rocks of at least two age groups (~500 Ma and 360–330 Ma), plus their enclosing (semi)pelites and amphibolites of the Mica Creek assemblage (750–550 Ma) in the Blue River area, underwent multiple deformational phases, anatexis at peak metamorphism, and exhumation during the Cordilleran orogeny.

Participants will see representative drill-core sections and outcrops of mineralogically and texturally diverse carbonatites, related alteration and alkaline ultramafic rocks, and the enclosing rocks of the Mica Creek assemblage at Upper Fir. We will discuss the primary igneous features and tectono-metamorphic overprinting of the Upper Fir carbonatites (Late Paleozoic), as recorded by their paragenetic relationships, mineral chemistry, dynamic recrystallization, and retrograde mylonitization. The highways that go from Vancouver to the Blue River transect a number of different Cordilleran terranes. A few stops along the way will show pillowed and massive basalts of the Fennell Formation (Late Paleozoic), Slide Mountain oceanic terrane, and Quaternary volcanic landforms and deposits of the Clearwater Valley. Dates: 22–24 June 2018. Organized by Alexei Rukhlov (BCGS), Thomas Chudy (UBC) and Commerce Resources Corp.

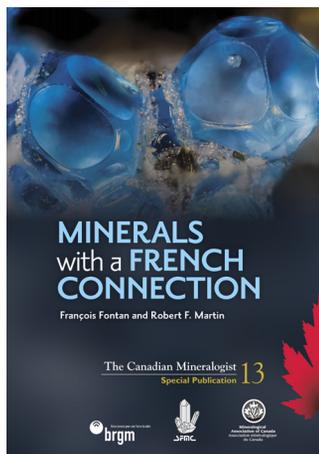
## LATEST RELEASE IN OUR SPECIAL PUBLICATION SERIES

### *Minerals with a French Connection*

Special Publication 13 of  
*The Canadian Mineralogist*

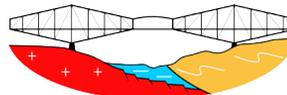
The book *Minerals with a French Connection* is a celebration of the seminal contributions of French scientists to the emerging fields of mineralogy and crystallography during the 16<sup>th</sup>, 17<sup>th</sup> and 18<sup>th</sup> centuries. Nowadays, the discoveries of mineral species in France are left to sophisticated and resourceful amateur mineralogists. The contributions of both professionals and amateurs alike are recorded in this Who's Who of French mineralogy and allied fields. Each mineral that has a type locality in France, including New Caledonia (n = 127), is fully described and illustrated on two facing pages, as is each one discovered elsewhere but named after a French citizen (n = 128). The original contributions of all individuals honoured by an eponymous mineral are recounted in a well-researched biographical sketch; a photo or portrait is provided in almost all cases. Preparations for this encyclopedic book began in 2005 but was interrupted by the sudden death in 2007 of its first author, François Fontan (of fontanite fame). Robert F. Martin then took over and brought the project to completion in mid-2017. This long-awaited volume, a co-production of the Mineralogical Association of Canada and the Société française de Minéralogie et de Cristallographie, has been very well received on both sides of the Atlantic.

Order online at [www.mineralogicalassociation.ca](http://www.mineralogicalassociation.ca) and at [www.sfmc-fr.org](http://www.sfmc-fr.org) (for Europe and Africa).



## UPCOMING GAC-MAC-IAH JOINT MEETING

AGG-AMC-AIH  
QUÉBEC 2019  
Où les géosciences convergent



GAC-MAC-IAH  
QUÉBEC 2019  
Where geosciences converge

## Where Geosciences Converge Québec, QC, Canada 12–15 May 2019

### Call for Session, Symposium, Field Trip and Short Course Proposals

The Geological Association of Canada (GAC®), the Mineralogical Association of Canada (MAC) and the Canadian National Chapter of the International Association of Hydrogeologists (IAH-CNC) are currently preparing the GAC-MAC-IAH/CNC 2019 conference, and invite you to mark these dates in your agenda: 12–15 May 2019. This conference will be held in historic Quebec City, a UNESCO World Heritage site. Participants will have the opportunity to visit and discover the warmth and charms of this beautiful city and to explore its many attractive nearby natural sites.

Under the theme “Where Geosciences Converge”, the organizing committee wishes to promote collaboration and stimulating discussion among geologists, mineralogists and petrologists, hydrogeologists, geophysicists and geochemists. The conference will highlight the following themes:

- Geosystems and hydro-geosystems
- Resources, energy and environment
- Data science for geosciences
- Geosciences and society

We kindly invite you to submit session proposals that are related to these themes or that belong to more general themes in geosciences, which you would be willing to organize and chair. You will find on the conference website a brief description of each of these four themes (<http://gacmac-quebec2019.ca/en/themes/>)

We also encourage you to submit ideas for field trips and short courses that you would like to organize. We are especially looking for proposals that link to specific sessions. Please forward your proposals to <http://gacmac-quebec2019.ca/en/proposition/> by 1 May 2018. See you in Quebec City!

## IN MEMORY OF DR. MICHAEL (MIKE/MICK) FLEET (1938 – 2017)



It is with great sadness that we report the passing of Dr. Michael Fleet on 6 December 2017. Mike attended University of Manchester (UK), graduating with a PhD in geology in 1963. In 1964, he emigrated from England to work at Western University (Canada) in the Earth Sciences (formerly Geology) Department, teaching mineralogy, crystallography and geochemistry. Over 38 years at Western as a professor and 14 as an emeritus, he published two books and hundreds of articles on a wide variety of the Earth's minerals. He had a wonderful and rich academic life, working with many talented students and other academics in Canada and across the globe; he liked nothing better than fierce academic debate. He was honoured to be a Fellow of the Royal Society of Canada and an Honorary Professor at Jilin University (Changchun, China).