



# Mineralogical Association of Canada

[www.mineralogicalassociation.ca](http://www.mineralogicalassociation.ca)



## GAC-MAC FREDERICTON 2014

We invite you to attend the next joint annual meeting of the Mineralogical Association of Canada and the Geological Association of Canada, which will be held on May 21–23, 2014, on the Fredericton campus of the University of New Brunswick.

Fredericton, the provincial capital of New Brunswick, is within easy reach of major centres in eastern Canada and the north-eastern United States and a short hop from Halifax, Nova Scotia. The region has a long history of Earth science education and exploration, beginning with Abraham Gesner, who was appointed government geologist for New Brunswick from 1838 to 1842, the first such position in Canada. The 2014 GAC-MAC slogan reflects in part the 175 years of geoscience in the region, inspired by Gesner and his discoveries.

Fredericton is located a short distance from the world's richest Pb–Zn–Ag deposits in the Bathurst mining camp, rare-metal intrusion-related deposits such as Sisson Brook and Mt. Pleasant, and spectacular exposures of hydrocarbon-bearing Carboniferous Maritime basin sediments, and several field trips will take advantage of this proximity.

The local organizing committee has developed an outstanding scientific program. Here are some of the symposia and special sessions that will be of special interest to *Elements* readers. Check the website for the full list: [www.unb.ca/conferences/gacmac2014/](http://www.unb.ca/conferences/gacmac2014/)

### Symposia

#### Applied aspects of mineralogy: A tribute to John Leslie Jambor

*Bob Martin, David Blowes, Tom Al*

#### Shock processes in natural and synthetic materials: A key to understanding planetary evolution

*John Spray, Neil Bourne, Falko Langenhorst*

#### Gold deposits: A holistic review

*Dan Kontak, Richard Goldfarb, Gema Olivo, Bruno Lafrance, Benoit Dubé, Craig Hart, Bob Linnen, Robert Creaser*

#### Precambrian supercontinent cycles: Geodynamics and its influence on mineralization

*Luke Ootes, Bruce Eglington, Kevin Ansdell, Toby Rivers, Sally Perrson*

### Special Sessions

**Mineralogy of plutonic rocks: From magmas to ores – A special session in honor of André E. Lalonde** *Keiko Hattori, Robert Linnen*

**Metalliferous black shales: Resolving among various metal sources**

*Andrey Bekker, Clint Scott, Dave Lentz*

**Discovering the next generation of porphyry deposits: Advancements in locating and understanding hidden intrusion-related mineralization**

*Neil Rogers, Bob Anderson, John Chapman, Dawn Kellett, Beth McClenaghan, Alain Plouffe*

**Granites and crustal evolution: Acadian–Caledonian connections**

*Dave Gibson, Mike Dorais, Martin Feely*

**Uranium ore genesis and exploration at depth**

*Eric Potter, Dave Quirt, Kurt Kyser*

**Conventional and unconventional petroleum systems of eastern North America**

*Grant Wach, Denis Lavoie, Robert Milici*

**Ancient and modern base metal sulfide deposits, environments, and formational controls**

*Patrick Sack, Jan Peter, Bruce Gemmill*

**Environmental aspects of resource development**

*Heather Jamieson, Michael Parsons*

**The age of the Earth revisited: High-precision U–Th–Pb geochronology of igneous, metamorphic, and sedimentary processes**

*Sandra Kamo, Mike Hamilton, Larry Heaman, Paul Sylvester*

**Linking metamorphic processes with large-scale geodynamics**

*Dave Pattison, Fred Gaidies, Doug Tinkham*

**High-temperature metasomatic processes recorded by trace element and isotopic systematics in major and accessory minerals**

*Chris McFarlane, Richard Cox*

**Alkaline magmatism and associated mineralizations**

*Anne Sylvie André-Mayer, Michel Jébrak, Daniel Ohnenstetter, Anthony Williams-Jones*

**Environmental and economic significance of gossans associated with mineralization in rifts and LIPs**

*Marie-Claude Williamson, Jeff Harris, Cole Kingsbury*

## Cathodoluminescence and Its Application to Geoscience

Mineralogical Association of Canada Short Course  
Fredericton, May 18–20

**ORGANIZERS:** Ian M. Coulson (University of Regina; [ian.coulson@uregina.ca](mailto:ian.coulson@uregina.ca)) and Michael Robertson (Acadia University; [michael.rob-ertson@acadiau.ca](mailto:michael.rob-ertson@acadiau.ca))

This short course, which will be held just before GAC-MAC2014, will address both the theory behind the phenomenon of cathodoluminescence (CL) and the application of this microscopic technique to all fields of geoscience investigation. Aimed at the graduate student, researcher, and practicing professional, the short course modules will cover the basics of theory, the causes of cathodoluminescence in minerals and materials, instrumentation, recent advances in cathodoluminescence imaging and spectroscopy data collection, and the interpretation of spectral responses. Case studies relating to sedimentological, petrological, mineralogical, petroleum geology, and economic geology fields will be included. The University of New Brunswick has excellent analytical facilities in house, and we have been offered access to this instrumentation (i.e. cold CL and Chroma SEM/CL) for demonstrations during the short course. Confirmed topics and speakers include:

**Theory and methodology of CL; spectroscopy of CL** (also hands-on demonstrations using a portable optical CL) – Michael Robertson (Acadia University)

**CL as a petrological tool applied to the study of zoning phenomena in minerals, especially apatite** – Ian M. Coulson (University of Regina)

**CL as a tool in exploration geology** – Anthony N. Mariano and Anthony Mariano, Jr. (consultants)

**Physics background to CL and the effects of heating on luminescence signals** – Roger Mason (Memorial University of Newfoundland)

**CL in sodalite and alkaline rocks; fluid interaction** – Melanie Kaliwoda (University of Munich, Germany)

**Hyperspectral CL data collection** – Martin Lee (University of Glasgow, Scotland)

**The application of cathodoluminescence to chemical sedimentary rocks** – Peir Pufahl (Acadia University)

**Applications of CL in sedimentary geology** – Melody Bechberger (Industry, USA)

**CL in apatite and feldspar** – Roger Mitchell (Lakehead University)

**The acquisition and analysis of cathodoluminescence hyperspectral image data** – Paul Edwards (University of Strathclyde, Scotland)

**Cathodoluminescence and trace elements in quartz: Insights into geologic processes** – Brian Rusk (Western Washington University, USA)