



# Mineralogical Association of Canada

www.mineralogicalassociation.ca

## MESSAGE FROM THE PRESIDENT



I became the president of the Mineralogical Association of Canada (MAC) at the annual general meeting. As I see how the Association works, I am impressed by its commitment to education. Each year, MAC distributes \$25,000 in scholarships to help students conduct research or travel to present their work at conferences. This year, in Fredericton, the Association offered a short course on cathodoluminescence (see photo). This was the 45<sup>th</sup> course in the popular series; for most courses,

the course notes live on and can be purchased from the MAC website. I have found these course notes to be an excellent teaching resource. The Association also offers Berry Schools, and a three-day school in optical mineralogy was held recently at the University of Ottawa (see next page).

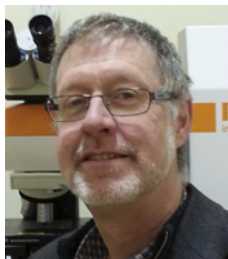
*The Canadian Mineralogist* continues to move forward with several new initiatives. Color figures are now available at no additional cost to authors, and online manuscript submission and tracking is fully established. We are pleased to report that submission-to-publication times have come down substantially, and continue to decline. Over the next months the journal will transition to a digital-first publication model, while retaining our print volumes; we are doing this in order to further improve our ability to disseminate information on advances in our field quickly. Finally, beginning in 2015, the publication schedule of *The Canadian Mineralogist* will move ahead one month, such that the first issue will appear in January.

**Ron Peterson** (Peterson@queensu.ca)  
MAC President

## 2014 MEDALS AND AWARDS

The Mineralogical Association of Canada presented its 2014 awards during its annual luncheon at the GAC-MAC annual meeting in May.

### 2014 Peacock Medal Awarded to Don R. Baker



The Peacock Medal for 2014 was awarded to Dr. Don Baker of McGill University for his outstanding contributions to experimental and igneous petrology. Dr. Baker has made substantial advances in our understanding of the character, origin, and behavior of a diversity of silicate melts and the processes that dictate their evolution.

Don Baker was born in southern Illinois, USA. When he was 11, he learned the story of Volcán de Parícutin and fell in love with geology and the idea of a volcano growing in nearby corn fields. Don received his AB in geophysical sciences in 1979 from the University of Chicago, where he did research with A. T. Anderson Jr. and P. J. Wyllie. At the Pennsylvania State University, he experimentally investigated island arc petrogenesis under David Egger and received his PhD in geochemistry and mineralogy in 1985. After working at the Smithsonian for one year with Bill Melson investigating plagioclase zoning in Mt. St. Helens dacites, Don moved on to a second postdoc, with Bruce Watson at Rensselaer Polytechnic Institute. There he applied kinetics to the study of diffusion in silicate melts and its influence on the rates of igneous processes. He took up a faculty position at McGill in 1990. Since that time he has been using high-temperature geochemistry to study the equilibrium and kinetic



A short course, organised by Ian Coulson and Michael Robertson, on cathodoluminescence (CL) took place prior to the annual meeting in Fredericton, New Brunswick, this past May. The course, attended by 38 students and professionals, included aspects of theory and the causes of CL in minerals and their host rocks, practical demonstrations, applications to the various fields of geology, recent advances in CL instrumentation, and the interpretation of CL imagery/spectroscopy data. The accompanying Short Course Volume 45 (*Cathodoluminescence and Its Application to Geoscience*) will be published in June.

processes responsible for the origin and evolution of igneous rocks and their minerals with his excellent students and collaborators. He has sat on the Mineralogical Association of Canada's council, is an associate editor of *American Mineralogist*, and is currently the secretary of the VGP section of AGU.

### Hawley Medal Awarded to Felix V. Kaminsky, Richard Wirth, and Anja Schreiber

The Hawley Medal is awarded to the best paper published in *The Canadian Mineralogist* in 2013: "CARBONATITIC INCLUSIONS IN DEEP MANTLE DIAMOND FROM JUINA, BRAZIL: NEW MINERALS IN THE CARBONATE-HALIDE ASSOCIATION," *Canadian Mineralogist* 51: 669-688

Recent studies of mineral inclusions in diamond have provided us with unprecedented information about the mineralogy of the lower mantle and the nature and role of fluids in the deep Earth. The study by Kaminsky, Wirth, and Schreiber (2013) represents a significant advance in this field. The authors carefully used transmission electron microscopy, electron diffraction, analytical electron microscopy, and other methods to document the associations, textures, and compositions of micro- and nanomineral inclusions in lower-mantle diamond. Their results demonstrate that the diamond formed in a lower-mantle, carbonatitic, carbonate-halide-phosphate-fluoride medium that was enriched in rare earth elements and volatiles. Future studies will focus further on the origin of this primary, deep-seated carbonatitic magma and its significance in models of the accretion and differentiation of the Earth.



**Felix V. Kaminsky** graduated from the Lomonosov Moscow University in 1959 with an MSc degree in geology and from the Gubkin Moscow Oil Institute in 1966 with an MSc degree in geophysics. He received a PhD degree from the Russian Academy of Sciences in 1969. From 1970 to 1994, he worked at TsNIGRI, Moscow, as a chief research scientist in the diamond department. He found eleven new diamond localities, including nonkimberlitic diamonds in polar Siberia, Mongolia, Koryakia, Kamchatka, and Armenia. On this basis, he obtained a DSc degree in mineralogy and petrology from the Institute of Mineral Resources, Moscow, and published a monograph entitled *Diamond Potential of*

**Non-Kimberlitic Rocks**, In the 1980s he discovered the first diamonds in the Archangelsk area, which subsequently led to the discovery of the world-class Lomonosov diamond deposit. In 1991, he was elected as a member of the Russian Academy of Earth Sciences and established the Institute of Diamonds. In 1994, he left Russia and created KM Diamond Exploration Ltd. in Vancouver, Canada. He has since consulted for numerous Canadian companies and prospected for diamond deposits in Canada, Brazil, Venezuela, Ghana, Mali, Mauritania, Madagascar, and Saudi Arabia. At the same time as exploring for diamond deposits, he continues to work as a research scientist. His main fields of interest are the petrology of kimberlites and the mineralogy of diamond.



**Richard Wirth** is the supervisor of the electron microscopy laboratory at the GFZ German Research Centre for Geosciences, Potsdam, Germany. After receiving his PhD in 1978 at the University of Würzburg, Germany, he spent three years as a postdoctoral fellow at the Institute of Metals Physics at the University of Saarbruecken. Then he held research scientist positions at the University of Cologne and was the head of administration at the Institute of Advanced Materials, Saarbruecken and

Ruhr-University-Bochum. In 1994 he established the TEM laboratory at GFZ Potsdam. His main research areas are micro- and nanoinclusions in minerals, the structure and behavior of grain boundaries, and meteorites. He was awarded the GFZ Research Award in 2003 and was appointed as the W. F. James Chair in Science at St. Francis Xavier University in Antigonish, Nova Scotia, Canada, in 2005. In 2009 he became a fellow of the Mineralogical Society of America and in 2010 a fellow of the Geological Society of America. He was nominated as a distinguished lecturer of the Mineralogical Society of America for 2013–2014.



**Anja Schreiber** is the laboratory manager of the TEM sample preparation laboratory at GFZ Potsdam. She earned a degree as technician in chemistry at Schering AG (now Bayer AG) in Berlin. She began preparing foils for TEM use at GFZ Potsdam using the focused ion beam technique in 2008. Since that time she has produced approximately 3000 foils from different materials, such as silicates, carbonates, sulfides, metals, alloys, ceramics, diamonds, and fossils. In 2011 Anja Schreiber was awarded the GFZ Prize for Technicians.

### 2014 Young Scientist Award to J. Gregory Shellnutt



Dr. J. Gregory Shellnutt of the National Taiwan Normal University was awarded the 2014 Young Scientist Award for his achievements in igneous petrology and the geochemistry of magmatic mineral deposits. Gregory Shellnutt completed his BSc (honors) in geology at Saint Mary's University in 1998 and his MSc degree at the University of Western Ontario in 2000. After a successful internship at the Instituto de Geología, Universidad Nacional Autónoma de México, he obtained his PhD from the

University of Hong Kong in 2007. He then moved to the Institute of Earth Sciences, Academia Sinica, in Taipei, Taiwan, where he received a distinguished postdoctoral fellowship. After three years at Academia Sinica he was hired by the National Taiwan Normal University as an assistant professor in the Department of Earth Sciences, where he

established a new WD-XRF laboratory. Greg has published extensively on the formation of magmatic Fe-Ti oxide deposits and their association with A-type granites, the large igneous provinces of China (Emeishan) and India (Panjal Traps), the mafic dike swarms of the Canadian Shield, granite petrogenesis, silicic rocks on Venus, silicate-liquid immiscibility in volcanic rocks, and the India-Eurasia collision. Greg is an editorial board member of *Lithos* and has edited two special journal issues appearing in *Lithos* and the *American Journal of Science*.

### A BERRY SUMMER SCHOOL ON OPTICAL MINERALOGY



(**Front row, from left**) Nancy Normore, Rhea Mitchell, Susan Kingdon, Heidi Tomes, Annemarie Pickersgill, Arianne Petley-Ragan; (**second row**) Andy McDonald (co-convenor), Sarah Jackson-Brown, Jim Nicholls (co-convenor), Victoria Maneta, Jacques Desmarais, Timothy Mount, John Weirich, Wladyslaw Betkowski; (**back row**) Doug Tinkham (lecturer), David Diekrup, Andrew Olejarz, Claude Gagnier, Fergus Tweedale, Bill Nesse (lecturer), Cole Kingsbury, Chris Pelow, Anna Chanou, Neil Ball. Absent: Tony Fowler (lecturer)

A Berry Summer School (BSS) on optical mineralogy, sponsored by the MAC and the MSA, with gracious financial support from the Goodman School of Mines and Olympus, Inc., along with logistical support from the universities of Calgary, Northern Colorado, Ottawa, and Idaho and Laurentian University, was held on 25–28 May 2014. The BSS was able to make use of the superlative polarized-light microscopy lab at the University of Ottawa. Lectures were presented covering the basics of transmitted-light microscopy (Nesse); the quantitative use of birefringence and crystal orientation, and the optical properties of olivines, pyroxenes, and amphiboles (Nicholls); the role of optical mineralogy in discovering the history of metamorphic rocks (Tinkham); “nonequilibrium” crystallization of minerals in igneous systems (Fowler); and reflected-light microscopy (McDonald). The BSS was completely booked, with 15 senior undergraduate and graduate students from across Canada, along with five professionals. All were provided with a complimentary copy of the text *Mineralogy and Optical Mineralogy* (Dyar and Gunter), graciously provided by the MSA. Initial feedback indicates the BSS was hugely successful, with all involved, from registrants to presenters, garnering novel 21<sup>st</sup>-century ideas and applications for this “vintage” technique.