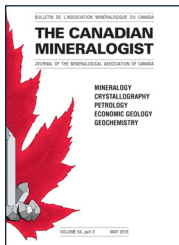




# Mineralogical Association of Canada

www.mineralogicalassociation.ca

## THE CANADIAN MINERALOGIST (IS NOT DEAD)



With apologies to Mark Twain, but reports of our demise are greatly exaggerated. As I am sure you, the reader, know, the business collapse of our typesetter and their attempts to hide the extent of their troubles resulted in the journal being more than a year behind. However, at the time of writing – 1 June 2017 – the September 2016 issue was online, the November 2016 issue was due to go online in mid-June, and our new typesetter (Allen Press) was confident that all remaining issues,

including the July 2017 issue, will be online by the time you read this at the end of July.

Our revival is largely due to the superhuman efforts of our editorial team: Managing Editor Mackenzie Parker, who didn't take a day off at Christmas (but is threatening to go to Disneyland in September), and Editorial Assistants Jordan Roberts and Donald ("DJ") Lake, who put their Masters theses on hold to help save the journal. I will profile in a future article those who comprise what has to be the youngest, most enthusiastic, and perhaps unusual, editorial team anywhere. I also thank our authors for their patience and understanding, our associate editors for standing by us, and the team at Allen Press, who until recently had to contend with damaged files from the previous typesetter but who went well beyond the normal to help us catch up. A special thanks goes to the MAC Council for their unwavering support during a very difficult time.

The great news for authors is that our average submission-to-publication time has fallen to under four months. So ... send us your manuscripts, especially if you want them published quickly.

To celebrate our rebirth and to communicate with authors our exciting ideas for the future we are planning some special events at the upcoming 2017 Geological Society of America Annual Meeting, to be held 22–25 October in Seattle (Washington, USA); at the 2018 Resources for Future Generations (RFG) conference to be held 16–21 June in Vancouver (Canada); and at the 2018 International Mineralogical Association conference to be held 13–17 August in Melbourne (Australia). There is also talk of a barbeque at the Vancouver meeting. See you there!

Sincerely yours, **Lee A. Groat**  
Editor, *The Canadian Mineralogist*

## 2017 MAC AWARDS

The Mineralogical Association of Canada (MAC) is pleased to announce its award winners for 2017.

### Hawley Medal Winners

The Hawley Medal is awarded to the best paper published in the *Canadian Mineralogist*. The 2017 award went to Albert Chan, David M. Jenkins, and M. Darby Dyar for their paper, "Partitioning of Chlorine between NaCl Brines and Ferro-Pargasite: Implications for the Formation of Chlorine-rich Amphiboles in Mafic Rocks", which appeared in the January 2016 issue of *Canadian Mineralogist* (v54, pp 337–351).

Chan, Jenkins and Dyar conducted hydrothermal experiments to measure the partitioning of chlorine between brine and amphibole. The careful characterisation of the reactants and products and the development of a thermodynamic model to relate amphibole chemistry and brine chemistry allowed the results to be applied to high-grade metamorphic rocks and to seawater–ocean floor alteration. The work provides an excellent example of the application of mineralogy to understanding Earth processes.



**Albert Chan** received a BS in mechanical engineering from the Massachusetts Institute of Technology (USA) and an MS in geophysics from the California Institute of Technology (USA). His research interests include studying Earth's interior structure and chemical composition by using seismic data and relating this to geodynamics models and high-pressure mineral physics experiments. He worked with David Jenkins at Binghamton University (New York, USA) on experimental chlorine partitioning in amphibole, which contributed to the award-winning paper above.



**David Jenkins** received his doctorate at the University of Chicago (Illinois, USA) in 1980 for the experimental investigation of several reactions relevant to the mineralogy of the upper mantle. He was supervised by Robert Newton. He worked for a year as a post-doctoral researcher with John Holloway at Arizona State University (USA) on a radioactive waste contaminant project. He then returned to the University of Chicago to work as a post-doctoral researcher for Julian Goldsmith, investigating the stability of the brittle mica margarite, the relative stabilities of clinozoisite and zoisite, and the high-pressure hydrothermal melting and order-disorder structures of albite. In 1984, he joined Binghamton University (USA) where he augmented the existing experimental petrology facilities to expand the range of pressures and temperatures that could be attained. His research has focused primarily on various aspects of amphibole crystal-chemistry, stability, and changes in amphibole composition in response to changes in pressure, temperature, and coexisting mineral assemblage. In 2001, he was named a Fellow of the Mineralogical Society of America, and in 2004 received the SUNY [State University of New York] Chancellor's Award for Excellence in Scholarship and Creative Activities. While at Binghamton University, he has had the privilege of working with many talented graduate and undergraduate students, such as the lead author of this award.



**Darby Dyar** is a mineral spectroscopist in the Department of Astronomy at Mount Holyoke College (Massachusetts, USA), and also Senior Scientist at the Planetary Science Institute (Arizona, USA). She studies the distribution of hydrogen and oxygen throughout the Solar System, focusing on terrestrial, lunar, meteoritic, and returned samples. She collaborates with many scientists in the international community by using the resources in her Mineral Spectroscopy Laboratory, founded in 1986, to enable Mössbauer, Raman, laser-induced breakdown spectroscopy, and other types of analyses of mineral and geological samples, and to provide rock and mineral standards for many other types of analyses. Darby received her BA from Wellesley College (Massachusetts, USA) and her PhD from the Massachusetts Institute of Technology (USA), followed by a post-doc at California Institute of Technology (USA) and faculty positions at the University of Oregon (USA), West Chester University (Pennsylvania, USA), and Mount Holyoke College. She is a long-time Associate Editor for the *American Mineralogist*, and belongs to the Association for Women Geoscientists, the North American Society for Laser-induced Breakdown Spectroscopy, the Geological Society of America, and the American Geophysical Union. She is the 2016 recipient of the G. K. Gilbert Award from the Geological Society of America for her outstanding contributions to the solution of a fundamental problem in planetary geology.

### Peacock Medal to Heather E. Jamieson

The Peacock Medal, the highest award bestowed by the Mineralogical Association of Canada, is awarded to Heather E. Jamieson of Queen's University (Kingston, Ontario, Canada) for her outstanding contributions to the mineral sciences.



**Heather E. Jamieson** is a professor at Queen's University in Geological Engineering and Geological Engineering and seconded 50% to the School of Environmental Studies. She received her undergraduate degree from the University of Toronto (Canada) and her PhD from Queen's. She held an NSERC post-doctoral fellowship at the Geological Survey of Canada. Heather's expertise is in the area of environmental geochemistry and

mineralogy, particularly the mineralogical controls on the mobility and bio-accessibility of metals and metalloids such as arsenic, antimony, the rare-earth elements and lead in mine waste. She has pioneered the application of synchrotron-based microanalysis and quantitative mineralogy to metal speciation in mine tailings, soils and sediments. She and her graduates have recently demonstrated the persistence and pervasive presence of arsenic trioxide from historic roaster stack emissions in lake sediments and soils in the Yellowknife region (Canada). Much of her fieldwork is in the Canadian North, but she has also conducted research in Nova Scotia (Canada), Chile, Peru, USA, Spain and Australia. She has supervised more than 40 graduate students, all of whom are now working as academics, environmental consultants or regulators. She has recently coedited and contributed a chapter to the book *Arsenic: Environmental Geochemistry, Mineralogy and Microbiology* (volume 79 of the Reviews in Mineralogy and Geochemistry series).

### Young Scientist Award to Siobhan (Sasha) Alexandra Wilson

The Young Scientist Award is given to a young scientist who has made a significant international research contribution and a promising start to a scientific career. This year's awardee is Siobhan (Sasha) Alexandra Wilson, who is a Senior Lecturer in the School of Earth, Atmosphere and Environment at Monash University in Melbourne (Australia) and is an ARC [Australian Research Council] Discovery Early Career Researcher Award Fellow.



**Sasha Wilson** obtained her BSc (Hons) in physics from McMaster University (Ontario, Canada) in 2003 and her MSc and PhD in environmental geochemistry from the University of British Columbia (Canada) in 2006 and 2010, respectively. Sasha held a NASA Postdoctoral Fellowship at the Indiana University (USA) node of the Astrobiology Institute from 2010 to 2011. She has been a faculty member at Monash University since

2011. She received the 2016 E. S. Hills Medal from the Geological Society of Australia for her contributions to geochemistry.

Sasha leads the Environmental Geochemistry Experimental Laboratory at Monash University. Her team's applied work focuses on tailoring element cycles for carbon, metal and metalloid sequestration within minerals in geo-engineered landscapes, mining environments and mineral processing circuits. On the fundamental side, her group is developing the use of alteration minerals in meteorites and fossils for (palaeo) environmental reconstruction, working to understand the role of gas-mineral reactions in sedimentary systems, and elucidating the relative roles of microbial metabolism and organic geochemistry in organo-mineralisation.

### WELCOMING NEW MEMBERS OF THE MAC COUNCIL

The MAC Executive approved the nomination of the two candidates below for the two positions of councillor for 2017–2020. As no additional nominations were received from the membership, the nominated candidates were declared elected by acclamation.

#### Councillors 2017–2020



**Kriss Leftwich** is an application scientist at PROTO Manufacturing (Canada), where she contributes a geological/mineralogical perspective to powder X-ray diffraction products. Under PROTO, she also runs grant and community outreach programs, including the PROTO Advantage Grant and donating time/resources to local schools to encourage students to engage in science, technology, engineering and mathematics (STEM) programs. She has a BS (2010) in geology from Western Kentucky University (USA). Between 2008 and 2010, her undergraduate research focused on sequestration and storage of the radioactive waste products of Cs and Rb by synthesized and natural zeolites (adviser: Dr. Aaron Celestian). In 2008, under the direction of Dr. Denton Ebel, she participated in an NSF-funded "Research Experience for Undergraduates" at the American Museum of Natural History (New York, USA) studying the modal mineralogy of the CV chondrites Vigarano, Grossnaja, Allende, and Leoville using an electron microprobe for elemental mapping. In 2015, she obtained a MS at Indiana University (USA) in mineralogy (adviser: Dr. David Bish). This work contributed to the investigation of hydration cycles of minerals and their potential influence on the (bio-)availability of water on Mars. Her focus in this work was on salt minerals' hydration cycles ( $MgCl_2 \cdot nH_2O$ ,  $NaMg(SO_4)_2 \cdot nH_2O$ , and  $KClMgSO_4 \cdot nH_2O$  systems), with the thesis "Hydration/ Dehydration Behavior of Minerals under Mars-Relevant Conditions". Her industrial experience also includes asbestos analysis via polarized-light microscopy and a variety of wet-chemistry analytical techniques.



**Aaron J. Lussier** is a research scientist in mineralogy at the Canadian Museum of Nature (Ottawa, Canada). He has completed a BSc in geology (Honours) in 2003 at the University of Manitoba (Canada), an MSc at McGill University (Canada) in 2006, and a PhD at the University of Manitoba in 2011. His doctoral research, conducted under the advisership of Dr. Frank C. Hawthorne, focused on the crystal chemistry of light-ion-bearing tourmaline minerals. Upon receiving an NSERC Post-doctoral Fellowship Award, he worked with Dr. Peter C. Burns at the University of Notre Dame (Indiana, USA) on aspects of the crystal chemistry of uranium minerals. In early 2017, he joined the Canadian Museum of Nature. Dr. Lussier's current research interests focus on the discovery and characterization of new mineral species, investigating the importance of nanomineral phases in geochemical transport processes, and understanding mechanisms controlling compositional variability in zoned minerals during crystal growth. Aaron also received a Distinguished PhD Dissertation Award in 2012, the Winthrop Spencer Gold Medal in 2012, the Faculty of Earth Science PhD Thesis Prize in 2012, a NSERC PhD Post Graduate Scholarship for 2006–2008 and a NSERC Canada Graduate Scholarship for 2004–2005. In addition to his recurring contributions to the *Canadian Mineralogist*, Dr. Lussier has published several papers with the *American Mineralogist*, *Mineralogical Magazine*, and *Periodico di Mineralogia*.