



Mineralogical Association of Canada

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PINCH MEDAL TO JOE MARTY

The 2015 Pinch Medal of the Mineralogical Association of Canada (MAC) was awarded to Joe Marty at the Tucson Gem and Mineral Society banquet on February 14, 2015. The Pinch Medal recognizes major and sustained contributions to the advancement of mineralogy by members of the collector-dealer community. The medal was presented to Joe by MAC President Ron Peterson.



Joe Marty was born in 1945 and became interested in minerals as a college medical student. His serious field-collecting career began in the Thomas Range, after he moved to Utah. His excursions eventually took him throughout much of the western United States. Joe recently retired from the faculty of the Department of Pathology at the University of Utah, where he taught hematopathology. As a medical technologist, he studied crystals in joint effusions from patients with acute arthritis, thereby becoming skilled in identifying crystals in synovial fluid, that expertise readily transferred to mineralogy.

Joe had the opportunity to examine crystalline specimens from the Hidden Treasure mine (Utah, USA) in the late 1980s, and this kindled his passion for studying and photographing microminerals. As his expertise grew, Joe shared his knowledge of mineral occurrences through talks illustrated by photomicrographs of self-collected specimens. In recognition of his many contributions to the study of microminerals, he was inducted into the Micromounters Hall of Fame in 2005.

Joe is an amateur mineralogist, but one whose avid and productive field collecting and sharp eye for the unusual have led to notable scientific achievements. He has discovered, or participated in the discovery of, an astonishing 44 new mineral species, and work continues on a number of others. He is also the coauthor on most of the papers that describe the mineral species he discovered, and he has authored or coauthored numerous other mineralogical articles. His self-collected specimens are represented in the collections of universities and major museums. Joe's recent work has added to our knowledge of vanadium and tellurium mineralogy. Martyite, a zinc vanadate, was named after Joe in recognition of his many contributions to mineralogy.

MAC FOUNDATION SCHOLARSHIP WINNERS

We congratulate Jesse Reimink and Nicolle Dupuis, recipients of the 2014 MAC Foundation scholarships.



Jesse Reimink received his BSc degree, with a major in geology and a minor in biology, from Hope College in 2009. He began an MSc degree at the University of Alberta in 2010 and in 2011 transferred to the PhD program under the supervision of Dr. Tom Chacko. His PhD project is focused on early Earth processes as recorded in the ~4.0 Ga Acasta Gneiss Complex in the Northwest Territories (Canada). He is addressing, through mapping and sample analysis, the nature and tectonic setting of crust formation on the early Earth, as well as secular trends documented within the ~600 million years of magmatism represented by the Acasta Gneiss Complex. A recent conclusion based on the geochemistry of a ~4.02 Ga unit of the complex indicates that this particular unit formed in a tectonic setting analogous to modern Iceland. Geochemical analysis is now being applied to a full suite of rocks with crystallization ages ranging from 4.02 to 3.4 billion years in an attempt to track the evolution of crust formation on the early Earth.



Nicolle Dupuis completed her BSc (honors) in earth sciences at St. Francis Xavier University (Nova Scotia) in 2013. Her undergraduate research focused on late Paleozoic postcollisional mafic magmatism and mantle evolution in the Pulo do Lobo Zone of southwestern Iberia and laid the foundations for her MSc research. Under the supervision of Dr. Brendan Murphy and Dr. James

Braid at St. Francis Xavier University, Nicolle is studying the evolution of the mantle beneath southwestern England during the Variscan orogeny, which was a major event in the amalgamation of Pangea. Using ^{40}Ar - ^{39}Ar geochronology, Sr and Nd isotopes, and trace and rare earth element abundances, Nicolle is examining the precollisional intraplate rift basalts and postcollisional lamprophyres in order to constrain their respective mantle source. She also wants to better understand the enigmatic relationship between the lamprophyres and the voluminous granites of the Cornubian Batholith of southwest England, which may, in turn, shed light on the relationship between postcollisional magmatism in southwestern England and elsewhere in the Variscan orogen. Ultimately, Nicolle's research will contribute to a better understanding of magmatism and mantle behavior in the lower plate during the waning stages of continental collision.

MAC TRAVEL AND RESEARCH GRANT AWARDS IN 2014

MAC awarded 15 student travel and research grants in 2014, totalling \$15,000, to 3 undergraduates, 5 MSc students, and 7 PhD students. Congratulations to these deserving individuals! Excerpts of the reports from 11 of them follow.



Erin Adlakha, a PhD student at the University of Ottawa under the supervision of Prof. Keiko Hattori, attended the GAC-MAC meeting in Fredericton, where she presented her research on the alteration along the P2 Fault, the main ore-hosting fault of the McArthur River uranium deposit, Athabasca Basin, Saskatchewan. Her research aims to identify mineralogical fingerprints that will aid uranium exploration. She presented two academic talks, both in special sessions, and she coauthored a poster.



Thomas Bagley, an undergraduate student at Acadia University, used a MAC research grant to partially fund the lab supplies for his honors BSc thesis. The objective of his thesis was to quantify the heterogeneity of a suite of reference materials using aqua regia / ICP-MS analysis. His research on reference materials is applicable to every aspect of geochemistry. Thomas was closely involved in the analysis of his samples, which reflected positively on the quality of his thesis because it broadened his perspective on data-quality assessment and data-quality control.



Jennifer Bentz travelled to the Tibetan Plateau to conduct analysis of iron- and magnesium-rich phyllosilicates. Her PhD thesis aims to understand the evaporite mineralogy and clay mineralogy in sediment cores from the Dalangtan Playa, a sulfate-rich evaporative playa in the Qaidam Basin, as an analogue for saline playas on Mars. Jennifer completed a BSc in environmental science in 2010 and an MSc in soil science, both at the University of Saskatchewan. A brief stint as a research assistant at the Canadian Space Agency awakened Jennifer's passion for planetary science. This evolved into a PhD project in 2013 with Dr. Ronald Peterson at Queen's University.



Michael Bramble received a travel grant to attend the GAC-MAC 2014 annual meeting, where he presented a poster related to his undergraduate research at the University of Western Ontario. He described his micro-X-ray diffraction and scanning electron microscopy studies of enigmatic dun-colored veins in the Tagish Lake carbonaceous chondrite. These veins appear to be the

youngest indigenous feature present and possibly represent a distinct, "late" water-rock alteration event experienced by the meteorite prior to its arrival on Earth. Michael has since started the planetary geoscience doctoral program at Brown University.



Shannon B. Gill, a MSc student at Memorial University of Newfoundland, attended the GAC-MAC 2014 annual meeting to present her results on the mineralogical evolution and precious metal enrichment of the Lemarchant volcanogenic massive sulfide deposit (Newfoundland, Canada). The presentation was well received and garnered both curiosity and suggestions for further

research. The data presented by other researchers and insights from experienced members of the audience at her presentation will be invaluable towards the completion of a robust and thoughtful thesis.



Breagh Lebert, a MSc student at the University of New Brunswick, received a travel grant to visit the Kiggavik camp (Nunavut, Canada) to review, research, and collect field and drill core data. The Kiggavik region is a developing uranium district within the Thelon Basin of central Nunavut. The region has undergone extensive deformation, involving early thrusting, ductile deformation, and transposition, followed by crustal-scale dextral transcurrent faulting. Multiple fluid events are represented by quartz veining, silicification, hematitization, and phyllosilicate alteration of the host rock, and by two stages of uranium mineralization. Analysis of field and drill core data has allowed Breagh to further clarify the sequence of deformation and alteration events.

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Benjamin J. A. Moulton, a final year PhD candidate at the University of Toronto, was awarded a research grant to carry out X-ray absorption near-edge structure (XANES) spectroscopy experiments on haplobasaltic glasses at the Canadian Light Source in Saskatoon. This study uses XANES, X-ray Raman spectroscopy (XRS), as well as Raman and Brillouin spectroscopies, to investigate the atomic structure of these geologically important glasses. Ultimately, Benjamin aims to link atomic structure to the bulk material properties. The ambient-conditions XANES data will be used to constrain the haplobasaltic behavior at high pressure. The correlation of these spectroscopies may yield interesting and unexpected results!

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Pia Pleše travelled to the Advanced Photon Source (APS) synchrotron at the Argonne National Laboratory. As a key part of her PhD project at Université du Québec à Chicoutimi, she scanned a total of 50 experimental and 15 natural samples during 40 consecutive hours. The selected samples represent experimental and field work carried out over several months. The experience not only

allowed her to work at one of the leading research facilities in the Western Hemisphere, it also shaped the course of her future research.



Amy Ryan, an MSc student at the University of British Columbia was awarded a travel grant to go to Vienna, Austria, to present her work on high-temperature H₂O solubility in rhyolitic melts at atmospheric pressure at the European Geosciences Union General Assembly 2014. There, she also met researchers with an interest in bubble nucleation and growth dynamics who were using 3D X-ray computed tomography, which is also an aspect of her work. The experience and contacts gained will be invaluable for developing and completing her master's project, as well as for future publications.



Paul Starr, a PhD student at the University of Calgary, attended the 2014 GAC-MAC meeting, where he presented his research on the nature of mineral reactions within transitional greenschist-amphibolite metamorphic sequences. His conclusion is that chemical and textural disequilibrium is common in these types of metamorphic sequences and may account for the frequent association of multiple amphibole- and epidote-group minerals. Paul's PhD project is an investigation into the interplay between equilibrium and kinetic processes that control mineral growth in low-pressure metamorphic sequences.

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Sri Budhi Utami, an MSc student at McGill University, presented results from her research at the Cities on Volcanoes 8 conference in Yogyakarta, Indonesia, and participated in the postconference Wet Volcanoes workshop at Kawah Ijen volcano in East Java, Indonesia. Sri works with Dr. Vincent van Hinsberg (McGill University) and Dr. Bassam Ghaleb (Université du Québec à Montréal) to

research the geochemistry of growth-zoned gypsum stalactites precipitated from seepage springs at Kawah Ijen. The research aims to reconstruct Kawah Ijen's historical record of magmatic activity.

\$5000
Scholarships

The Mineralogical Association of Canada Foundation

will award two \$5000 scholarships to graduate students, one to a student enrolled in an MSc program and one to a student in a PhD program. The applicable fields of study are:

- Mineralogy
- Crystallography
- Geochemistry
- Mineral Deposits
- Petrology

Deadline to apply:
May 1, 2015

Eligibility

- Students entering the second year of an MSc program or the second or third year of a PhD program at a Canadian university in September 2015.
- Canadian citizens enrolled in the above or equivalent programs at any university.

For more information, contact the business office:

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Application form available at
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