



# Mineralogical Association of Canada

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

## 2012 AWARDS

The Mineralogical Association of Canada presented its 2012 awards at its luncheon during the GAC-MAC annual meeting in St. John's, Newfoundland. We reproduce excerpts from the citations below.

### *Martin A. Peacock Medal to Dante L. Canil*



The Peacock Medal, the highest honor bestowed by the Mineralogical Association of Canada, was awarded to Dante L. Canil (University of Victoria) for his diverse and profound contributions in the Earth Sciences. His studies of mantle redox and atmospheric evolution provided the first estimate of paleoxygen fugacity in volcanic rocks and their complementary magma residuals. He did this by systematically measuring and studying the partitioning of vanadium between minerals and

melts. Two decades ago, Dante conducted groundbreaking high-pressure research on the origins of kimberlite magmas deep in the mantle, and he evaluated the speed at which these magmas move. He showed that kimberlite magmas must be water rich and fluid during ascent, and he correlated their oxygen fugacity with their depth of origin. Dante has studied the trace element contents of thousands of garnets from tens of kimberlites to map the extent of Archean mantle beneath North America. His work on the minor-element systematics of over 1200 samples of mantle lithosphere from the Archean to the present has impacted our understanding of the tectonic environment of Earth's earliest mantle lithosphere. He has shown that some of the deepest parts of the mantle sampled by kimberlites may retain the imprint of their interaction with Earth's hydrosphere billions of years ago under an Archean ocean. In his research on ultrahigh-pressure rocks, Dante has used an innovative interdisciplinary approach combining field mapping, thermobarometry, geochronology, and geochemistry to discover orogenic mantle massifs in the Yukon, and he was the first to recognize exhumed ultrahigh-pressure rocks in the Cordillera. In addition, Dante has greatly influenced many students over the years. Despite his groundbreaking laboratory research efforts, he remains an active and accomplished field geologist.

### *Young Scientist Award to Sytle M. Antao*



The Young Scientist Award is presented to a young scientist who has made a significant international research contribution in a promising start to a scientific career. Sytle M. Antao earned her PhD in mineralogy and crystallography at the State University of New York, Stony Brook, in 2006. She did postdoctoral research at the Advanced Photon Source in Chicago through 2008. She then joined the Department of Geoscience at the University of Calgary as an assistant professor. During her time in

Chicago, Sytle was a team member at Beamline 11-BM of the Advanced Photon Source. She combines high-quality synchrotron diffraction data and Rietveld crystal structure analysis to address mineralogical problems. Her studies mostly pertain to the properties of minerals important in environmental issues and are directed at increasing the quality and sustainability of life on Earth. Sytle has examined the structures of minerals, including sulfates, carbonates, silicates, and even glasses, often under elevated temperature or pressure conditions. For example, she has probed the structural properties of calcite minerals in extreme

environments to learn more about their behavior during carbon storage. Her studies relate structural parameters in important mineral groups across conditions ranging from those of biogenic materials to those of high-temperature-driven order-disorder transitions. Sytle has made important contributions to our understanding of nanoscale mineralogy, perhaps most notably with respect to ferrihydrite and mackinawite.

### *Hawley Medal to Susanne Göb, Thomas Wenzel, Michael Bau, Dorritt Jacob, Anselm Loges, and Gregor Markl*

The Hawley Medal is awarded annually for the best paper published in *The Canadian Mineralogist* during the previous year. The award winning paper was:

### **The redistribution of rare-earth elements in secondary minerals of hydrothermal veins, Schwarzwald, Southwestern Germany. *Canadian Mineralogist* 49: 1305-1333**

The paper describes the association and chemical compositions of supergene REE-bearing minerals in hydrothermal veins in Germany. Susanne Göb and coauthors describe the processes of REE remobilization in hydrothermal veins by combining information from both the REE-bearing mineral assemblages and details of REE compositional variations in cogenetic solid phases and fluids. The REE compositions are linked to the minerals found where the supergene fluids are thought to originate. The authors consider the distribution of elements with respect to the interaction of the host calcite and the crystallizing REE-containing minerals, and this interplay between large- and small-scale processes leads to the final REE distribution. To follow the mobility of the REEs on their final path, the authors consider the impact of these minerals on the composition of the local groundwater. The paper is an excellent example of how to use careful mineralogical and chemical measurements to understand the fine details of mineral-solution interactions and relate these to the larger-scale geochemical processes in hydrothermal deposits.



The lead author, **Susanne Göb**, received her Diplom in geology with specialization in economic geology at the Eberhard Karls Universität Tübingen, Germany, in 2009. The Hawley Medal is based on her MSC results. Currently, she is doing a PhD with Gregor Markl in Tübingen.

## THANKS TO THE ST. JOHN'S 2012 ORGANIZERS

The 2012 GAC-MAC annual meeting in St. John's, Newfoundland, was a great success! We wish to express our thanks to cochairs Alana Hinchey and Steve Piercey for their personal efforts and to the entire Local Organizing Committee and many volunteers who helped ensure the meeting ran smoothly. A total of 904 participants, including 151 students, enjoyed 499 oral and poster presentations. Many exciting sessions were offered on a variety of topics ranging from Appalachian tectonics to forensic geology. A dozen fieldtrips across Newfoundland rounded off the educational highlights of the meeting. The intellectual offerings were complemented by great social events, which included a lobster feast, a gala banquet, and a pub crawl.