Mineralogical Society of America

www.minsocam.org

PRESIDENT'S LETTER

A Museum View of Mineralogy

George Harlow

When I considered running for the office in the Mineralogical Society of America (MSA) that leads to becoming president, I decided to see when the last time an MSA President was employed at a museum of natural history or science. I discovered it was Brian Mason in 1966 from the Smithsonian Institution (and one of my predecessors at the American Museum of Natural History), now 50 years ago. That *is* a long time considering that museums play a fundamental role in stimulating students and sustaining interest in mineralogy and its related subjects. So, I thought the museum perspective is a worthy topic for my first president's letter. Moreover, as I am in the process of creating new exhibition halls of minerals and gems, the topic of minerals and museums is very much on my mind. Mineral exhibitions in museums are typically the first introduction a child has to crystals of minerals and their vast diversity, beauty, and significance. This contact, typically sustained over many visits, has been the foundation of many careers in the mineral sciences, as well as to the fascination of the vast community of mineral collectors. We are now challenged by the digital age and hand-held devices, which can offer (challenge?) museum visitors with a virtual "reality" as compared to the "real" stuff in an exhibition hall. Creating better displays—which engage visitors by connecting science, natural resources, culture, and good stories—is an ongoing challenge because one must merge a visual or tactile experience with the wider and deeper content. But, doing so is critical if we are to maintain or enhance the traditional flow of students into our sciences, let alone provide citizens with some sense of the mineral realm. Thus, we in the museum business take our role in mineralogy very seriously and recognize MSA as an ally in our activities of informal education and presenting minerals and their stories to the visiting public.

MSA publishes the scientific content that we all rely on to have timely and accurate geoscience information, fundamentally through the *American Mineralogist* and the *Reviews in Mineralogy and Geochemistry* as well as, more recently, in the overview articles in this magazine, *Elements*, which MSA spearheaded in 2005. In the digital domain, the MSA-talk list server permits soliciting rapid answers to sometimes arcane questions, which enlists the expertise and memories of many users. The crystal structure database provides ready access to data for constructing crystal structure or crystal form drawings and much more. Mineralogy4Kids is an online resource to send those young in age or experience to learn the basics of rocks and minerals. And many other resources can be found through the MSA website. Moreover, the society seeks new ways to publish and provide scientific content, so stay tuned for developments.

Moving on to a new role, now present in my own activities and found in most museums, I want to address teachers and their training. An advocacy that MSA can play in geoscience education is support for the training of teachers as well as academics. In the US, the Next Generation Science Standards (NGSS) are changing the framework of school education for the Earth sciences, such that they can be squeezed out of curricula unless integrated with the physical sciences or projected into aspects of the life sciences. Geoscientists and our societies, like MSA, must engage with the changing educational landscape, as pedagogy alone cannot. I will spend some time developing a strategy to promote this activity during my tenure and look forward to communicating with members and colleagues about it.

Finally, I encourage you to support MSA (as well as promote visiting museums with mineral displays).

George Harlow, MSA President

The 2017 16-month calendar showcases wulfenite. The calendar is published by Lithographie, LLC, in cooperation with MSA, and is available from MSA.

See http://www.minsocam.org/.

NOTES FROM CHANTILLY

- MSA Council decided on the 2017 award recipients at its Fall Council Meeting in Denver (Colorado, USA). The Roebling Medal is awarded to **Edward M. Stolper** (California Institute of Technology, USA); the Dana Medal to **Thomas W. Sisson** (U.S. Geological Survey, Menlo Park, California, USA); the MSA Award to **Dustin Trail** (University of Rochester, New York, USA); and the Distinguished Public Service Award to **David W. Mogk** (Montana State University, USA). Fellows newly elected for 2017 are Jay J. Ague, Bernardo Cesare, Elizabeth Anna Cottrell, Glenn A. Gaetani, Tomoo Katsura, Yan Liang, Wendy R. Panero, James Kelley Russell, Sean R. Shieh, and Michael J. Walter.
- The 2017 recipients for the research grants in mineralogy and petrology from MSA's Mineralogy/Petrology Research Fund are: **Allan Lerner** (University of Oregon, USA) for his study, "Developing a Volcanic Degassing Model for Mount St. Helens Volcano" and **Jessica Hamilton** (Monash University, Australia) for her study, "Enhancing Mineralogical Trapping of CO_2 Within Ultramafic Mine Tailings Material." The 2017 recipient for the research grant in crystallography from the Edward H. Kraus Crystallographic Research Fund is **Gabriela Aylin Farfan** (Woods Hole Oceanographic Institution, USA) for "Probing Coral Aragonite Crystallography under Changing Ocean Conditions using Synchrotron-based Ca-EXAFS."
- All 2015 and 2016 MSA members have been contacted by mail, electronically, or both about renewing their membership for 2017. If you have not renewed your MSA membership, please do so. If you have not received a notice by the time you read this, please contact the MSA Business Office. You can also renew online at anytime.

J. Alex Speer
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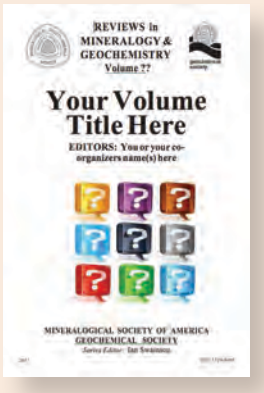
MSA STUDENT GRANT AWARDEES

Gabriela Aylin Farfan (Woods Hole Oceanographic Institution, Massachusetts, USA) received the 2017 Grant for Research in Crystallography, as funded by the Edward H. Kraus Crystallographic Research Fund for her proposal "Probing Coral Aragonite Crystallography under Changing Ocean Conditions using Synchrotron-based Ca-EXAFS." Ocean conditions continue to change at unprecedented rates (e.g. increasing ocean acidification, higher ocean temperatures, anthropogenic pollution), one result of which is that coral species face increasing risk of death and even extinction. Many studies have investigated the biological response to external stressors, but few have explored corals from a mineralogical and crystallographic perspective to understand how these same stressors will influence the development and stability of coral skeletons and subsequent coral health. Ms. Farfan proposes to quantify the effect of increasing ocean temperatures on coral biomineralization by probing the crystallography of coral larval skeletons grown under an array of temperature conditions using crystallographic and synchrotron-based techniques.

Jessica Hamilton (Monash University, Australia) received one of the 2017 Grants for Student Research in Mineralogy and Petrology for her proposal "Enhancing Mineralogical Trapping of CO_2 within Ultramafic Mine Tailings Material." Carbon mineralization is a natural weathering process, whereby carbon dioxide (CO_2), which is a greenhouse gas, is removed from the atmosphere and stored in the structures of minerals. Sequestration of this greenhouse gas in minerals is the only known form of permanent CO_2 storage; carbonate mineral products are themselves environmentally benign, safe, and are currently utilised in several industries. Jessica's research aims to develop and test novel, low-cost treatments for carbonating the mineral waste generated by mining by conducting a series of column experiments using mine tailings to simulate a range of tailings management strategies for accelerated CO_2 uptake.

Call for MSA/GS Short Course and RiMG proposals

Have you ever benefitted from an MSA/GS short course, where diverse researchers and students broaden their skills and knowledge in a key area of interest? Have you ever read or used an article from a RiMG volume? Would you like to see more? If so, consider developing a proposal for a MSA/GS short course and/or a RiMG volume and submit it to the Chair of the MSA/GS Short Course Committee soon!



For courses/volumes in spring 2019, submit proposals by September 1, 2017; for fall 2019, submit proposals by December 1, 2017. To learn more about MSA/GS Short Courses and RiMG volumes, visit our web sites:

www.minsocam.org/msa/SC and
www.minsocam.org/msa/RIM/About_RiMG.html

Allan Lerner (University of Oregon, USA) received one of the 2017 Grants for Student Research in Mineralogy and Petrology for his proposal "Developing a Volcanic Degassing Model for Mount St. Helens Volcano." Monitoring changes in rates or types of gas emissions are critical for recognizing early signs of volcanic unrest. Sulfur dioxide is the most routinely monitored volcanic gas because sulfur is relatively abundant in magmas, and SO_2 strongly absorbs ultraviolet light and has very low background atmospheric levels, making volcanic SO_2 relatively easy to detect. However, our SO_2 measuring capability has largely outpaced our ability to understand what SO_2 emissions actually represent in volcanic systems. The solubility and degassing behavior of SO_2 depends on physical parameters (e.g. pressure, temperature) and geochemical parameters (e.g. melt composition, oxygen fugacity) that vary widely between different volcanic centers and are often poorly constrained. Consequently, effectively utilizing SO_2 emissions as a volcanic monitoring tool is hampered by a lack of degassing models specific to the volcano in question. Allan proposes to develop a petrologic degassing framework for one of the most threatening volcanoes in the US, that of Mount St. Helens (Washington, USA), and compare ongoing gas monitoring with predictions from the degassing model.

AWARD NOMINATIONS

Nominations Sought for 2018/2019 Awards

Nominations must be received by 1 June 2017

The **Roebling Medal** (2018) is MSA's highest award and is given for eminence as represented by outstanding published original research in mineralogy.

The **Dana Medal** (2018) is intended to recognize continued outstanding scientific contributions through original research in the mineralogical sciences by an individual in the middle of their career.

Mineralogical Society of America Award (2018) is given for outstanding published contribution(s) prior to 35th birthday or within 7 years of the PhD.

The **Distinguished Public Service Medal** (2019) is presented to an individual who has provided outstanding contributions to public policy and awareness about mineralogical topics through science.

Society **Fellowship** is the recognition of a member's significant scientific contributions. Nomination is undertaken by one member with two members acting as cosponsors. Form required, contact committee chair or MSA home page.

MINERALOGICAL SOCIETY OF AMERICA

Submission requirements and procedures are on MSA's home page: http://www.minsocam.org/

IN MEMORIAM

Henry L. Barwood – Member, 1989