

Acceptance of the 2017 Roebling Medal of the Mineralogical Society of America

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Thank you, Hap, for that very kind introduction; my friendship and professional relationship with you go back very far, and some of my most enjoyable work has been done with you, so I particularly appreciate your introducing me today. I also want to thank the MSA, those of you who have come to this luncheon, and those who participated in this morning's symposium on "Petrology Across the Solar System"—which was fun and filled with great talks and required people to come a long way. It is all very humbling, particularly when I look at the list of previous recipients extending back to 1929, including people whom I never knew, but whose influence on our field is legendary—Bowen, Schairer, Tilley, Buddington, Khorshkinskii, and so many more; people from generations ahead of me but whom I know (or in some cases, knew) well and whose influence on me personally and professionally has been profound, and about whom I think often for what they taught me that continues to resonate for me—Jim Thompson, Ian Carmichael, Peter Wyllie, and both Don Lindsley and Gary Ernst who are here today; and more recently, people from my cohort who are my friends and whose work shapes and defines in our own time the fields represented by the MSA. I am honored to have my name added to the list.

I have only a few minutes, and I want to cover largely unrelated topics, most of which are unimportant but interesting (at least to me), but the last of which, I think is important.

The MSA was the first professional society I joined, in about 1973. And what I remember best is that my student membership cost about \$5. Maybe it's still a bargain, but I doubt it is quite as good a deal as it seemed to me at the time. And although over the years I have outgrown my bookshelf space and thrown out many journals in favor of getting articles online, I still have, and will always have, every issue of the *American Mineralogist* from when I first joined MSA. And the MSA could teach all of us something about branding, having stuck with that gaudy yellow color for the journal (now faded for the older issues), making it recognizable to all of us from a great distance.

I know well the MSA's logo with its three sides of mineralogy, crystallography, and petrology, but perhaps because of the Society's name, I still tend to think first about mineralogy when I think about the MSA. Likewise, when people around Caltech learned of the Roebling Medal, most of them assumed I must be a mineralogist because it is given by the MSA, and they don't generally know of the breadth of the Society. And although I learned a lot of mineralogy and crystallography as a student from Charlie Burnham and Jim Thompson, I have to confess to being a pretty poor mineralogist, at least when it comes to hand-specimen identification. As I put into the blurb in the luncheon program, a defining experience in my life was being accepted into a freshman seminar at Harvard on lunar geology



run by Jim Hays (who later became my undergraduate and Ph.D. thesis advisor, although in many ways, Dave Walker was at least a co-advisor) and Charlie Burnham. Just try to imagine the thrill and inspiration of being a freshman in 1970, just a year after the Apollo 11 landing, and reading cover to cover the special issue of *Science* magazine with the first results of the study of the returned samples! However, since most of us in the class knew no geology, we had a field trip associated with the class to someplace in New England. I recall vividly Charlie Burnham picking up a rock, probably a granite—it is hard to remember every detail this many years later—and saying, “Two-thirds of the continental crust is feldspar, so if you are ever asked to identify a mineral and you don't know the answer, guess *feldspar*, and you will be right 67% of the time; if you want to increase your success rate, guess *feldspar* or *quartz*, and you go up to 75%.” My office at Caltech is two doors down from George Rossman's, and George is a real mineralogist. One of his ideas of fun was to pick up a random mineral (or maybe not so random) whenever I would go into his office and to ask if I could identify it. George would do this to me regularly, and when I didn't know the answer—which was often—I would try to look thoughtful, but I always went with the Burnham rule, and I was indeed right about 3 out of 4 times. George could never understand how I got so many obscure and odd-looking feldspars and quartzes right, and I'm happy to say he finally gave up. The point is, so much for my ever being confused with a mineralogist by anyone in this room!

For some reason, this award makes me think about my time as a student at Harvard, perhaps because that is where I learned so much of how I think about petrology (and geology more broadly). Barely a day goes by that I don't think about or use something I was taught at Harvard by Jim Hays or Jim Thompson. And I think about the group of students with whom I interacted closely, first as an undergraduate, when most of

them were graduate students, and later as a graduate student: I can't recall them all, and I apologize to those of you I am surely forgetting, but what a place it was with a cohort that included John Brady, John Ferry, Tim Grove, Bob Hazen (who used to drive us—or at least me—crazy when he practiced his trumpet late most afternoons and the music reverberated through the ventilation system of Hoffman lab!), Andy Knoll, John Longhi, Hap McSween, Richard Sack, Dave Veblen, and Dave Walker. It was a remarkable time and place to be a student. I also want to remind those of you who remember those days, that my wife Lauren and I became a couple at the start of our sophomore year, and that she was also so much a part of this cohort, and to thank her for her support and partnership over what is now a longer time than we usually like to admit.

Let me conclude with a personal comment that I will introduce with a story. In about 1981 or so, there was a faculty party at Caltech at Peter Wyllie's house. One of our colleagues was focused on an award that he wanted, and was talking about it to anyone who would listen. And I remember Sam Epstein shaking his head and articulating a thought that is memorable to me to this day. Sam asked why our colleague was so interested in the award.

Didn't he understand that people are social animals, and that our relationships and interactions with other people are the essence of being human; that we as scientists have the privilege of playing this out while at the same time learning and discovering new things about nature and in passing the wonder of it on to future generations; and that what is most important is our community and the people with whom we interact and come to know and care about in this joint pursuit? I also heard Mel Simon, a friend and an extraordinary biologist, say very much the same thing more recently. In this context, it is my privilege today to acknowledge and honor the relationships I have been able to forge with many of you here today, and with others who are not able to be here. In addition to those whom I have mentioned already, I particularly want to thank my students, postdocs, and Caltech colleagues, without whom I would not be up here today. But in the course of a career, there are so many such relationships that it would be impossible to thank you all for what we have been able to do together that we could not have done alone and for the relationships themselves. Suffice it to say, that these relationships are indeed what I do most value about my career, and that I thank you all for having allowed me the opportunity to share so much with you.