

Acceptance of the Distinguished Public Service Award of the Mineralogical Society of America for 2017

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Mr. President, Colleagues, Friends, and Family:

I am deeply honored to receive the Mineralogical Society of America Distinguished Public Service Medal. When I look at the list of past recipients of this award—Cathy Skinner, Mac Ross, Paul Ribbe, our current President George Harlow, Alex Speer, among many others—I am truly humbled when reflecting on their significant contributions to MSA and to society. This award was a complete surprise, and I am truly thankful for the recognition by my nominators, and for MSA Council for bestowing this award. And, I think I'm thankful to Mickey Gunter for that very kind and over the top citation.

Throughout my career, MSA has been my intellectual home. I have benefitted greatly from learning about new advances in our science from *American Mineralogist*, *Elements Magazine*, the RIMG short courses and volumes, and queries and answers generously posted to the MSA listserv. The strength of MSA rests in the many contributions that have been made by its members, and in reflecting on the significance of the Distinguished Public Service Medal, I would like to take this opportunity to comment on the important role of community in growing and sustaining MSA as a professional society. This is most importantly expressed through educational efforts at all levels to recruit and retain (attract and ensure success of) the next generation of students in our discipline, in continuing professional development programs to ensure colleagues are up to date on the most recent advances in research and pedagogy, and in outreach activities to inspire and inform the public. Mentoring (advocacy beyond simply advising); sharing of knowledge and resources; providing access to events and facilities; creating a welcoming, inclusive environment for the diverse members of our community; and providing opportunities for all to engage in our community of practice are essential.

As a member of the MSA community, I have benefitted greatly from years of collegial associations with its members: As an undergraduate student at the University of Michigan, Don Peacor was an early mentor. I was never so relieved as when I received my “B” in his Mineralogy class. It took me a whole semester to understand through his thick Boston accent that when he said “AH DAH” he was actually talking about ORDER. This introduction to systematic mineralogy was an important cornerstone for my future interests in geology. Eric Essene was my undergraduate thesis advisor. I still marvel at his encyclopedic mastery of the most arcane minerals and their unique occurrences, and I am grateful that he opened the window to the world of phase equilibria for me. But mostly, in his own inimitable way, he set a high standard for all of us by insisting on clear interpretations based on the evidence found in the field, analysis, and theory. As I follow current discussions on the MSA listserv I often wonder, “What would Eric say?” At



Photo credit: Darrell Henry

the University of Washington, Stu McCallum, Tony Irving, and Bernard Evans introduced me to the numerous analytical methods we use to characterize rocks and minerals, and the importance of care and precision in making analytical measurements. At the start of my dissertation studies, Stu helped me attend an IGCP Field Conference on Early Crustal Genesis at a critical time in my graduate studies, and Tony Irving helped me secure a LPI Graduate Fellowship to do geochemical work at Johnson Space Center on Archean basement rocks on SW Montana. Bernard, in particular, demonstrated to me the need for clarity of expression when communicating in spoken and written word. Paul Mueller, Joe Wooden, Darrell Henry, and Mike Hochella have collaborated in addressing topics of consequence through applications of modern analytical methods in studies ranging from genesis and evolution of Archean continental crust to my recent interests in nanoparticles in the environment. Early mentoring and subsequent collaborations have made all the difference.

A large part of my career has been focused on Geoscience Education, and I want to acknowledge the many colleagues who have contributed to efforts to improve teaching mineralogy, petrology, and geochemistry: John Brady, Dex Perkins, Darrell Henry, Barb Dutrow, Mickey Gunter, and especially Cathy Manduca and our work at the Science Education Resource Center at Carleton College. I was very fortunate to have started this work at a time of convergence of emerging digital library and information technologies and the creation of the “On the Cutting Edge”

geoscience faculty professional development program. I had the unique opportunity to facilitate the discovery, aggregation, organization, vetting, and dissemination of the best instructional ideas and practices from, and for use by, the mineralogy community. Over the past 15 years we have convened workshops on Teaching Mineralogy, Petrology, Geochemistry, and related topics such as Deep Earth, Early Earth, Teaching in the Field, Undergraduate Research, and much more. We developed an ethic of sharing information and resources at these events, and we captured this information on dedicated websites for use by the entire community. There are now over 600 community-contributed, peer-reviewed teaching activities that are available for faculty to adopt or adapt, and numerous other “thematic” collections that support instruction in mineralogy, petrology, and geochemistry such as a course syllabus database, Teaching Using the Primary Scientific Literature, Teaching Phase Equilibria, Clay Mineralogy, and Geochemical Instrumentation and Analysis. These online resources would not have been possible without the generous contributions from community members.

On a personal note, I particularly thank my wife, Gwendy Stuart, for 35 years of loving support and for the latitude to pursue my professional visions wherever they took me, and to my children, Dylan and Emily, for keeping me young.

In closing, I would like to affirm that this is a great time to be a geoscientist! Research in mineralogy, petrology, and geochemistry is more vital and robust than ever. Through field, experimental, analytical, and theoretical studies we have the unprecedented opportunity to investigate Earth from atomic to planetary scales, from the Earth’s core to the stratosphere (and extending to extraterrestrial materials), and to document Earth processes from the time of Earth’s formation to reactions that

take place instantaneously (and sometimes catastrophically) in the Earth system. A major challenge for MSA members is to figure out how to effectively demonstrate the joy of discovery found in our science to entirely new audiences. Although MSA is recognized primarily as a research-oriented professional society, I would assert that the educational mission of MSA is a necessary complement of this work. Why keep our interesting and important results to ourselves? We are all life-long learners. We learn about new advances in science, new methodologies, new applications of the results of our scientific work through journals, meetings, and short courses as a form of “in reach” to those already inculcated in the discipline. Perhaps more importantly for the long-term health of mineralogy, it is as important to engage many forms of “outreach” to new audiences, students for sure, but also the general public, to make sure we are recruiting the best and brightest students to carry on our work, to inspire a sense of wonder and awe about the Earth system, and to demonstrate the relevance and importance of our work to the general public. As a community, I would assert that we all have a responsibility, in our own way and in our own situations, to help communicate our science to these new and important audiences. The community practice of sharing ideas, hard-earned experience, access to instruments, mentoring the next generation of students, and demonstrating to the public the amazing secrets found in the mineral kingdom has served us well and will be essential to sustain the vitality of our discipline. So, I would like to thank the literally hundreds of colleagues who have contributed so generously their ideas and time to help develop the online teaching resources available for use by the whole community through the “On the Cutting Edge” program. Consequently, I gratefully accept this award on behalf of all those colleagues who have contributed to this great cause.