

## Acceptance of the Distinguished Public Service Medal for 1996

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President Brown, distinguished guests, friends, and colleagues:

It is an immense pleasure to be here this afternoon to accept the Distinguished Public Service Medal of the Mineralogical Society of America. I want to express my deep appreciation to the MSA for bestowing upon me this high honor, and to my long-time friend and associate, Patrick Muffler, for his kind citation. It is especially gratifying to be chosen an MSA medalist, and I feel deeply honored, and yet humbled, to join the illustrious company of my predecessors.

When I learned of my selection some months ago, I must confess that I was taken by complete surprise—especially so because in recent years I have not been directly involved with the meetings or other activities of the society. I must emphasize, however, that my very first paper, published a long, long time ago (1960) while I was still a graduate student at Yale, was specifically mineralogical. It was co-authored with the late Horace Winchell and was titled “Regressions of physical properties on the compositions of clinopyroxenes. I. Lattice constants” (*American Journal of Science*, 258, 529–547).

Moreover, early in my career, my studies of the Boulder batholith, southwestern Montana, depended heavily on mineralogy, petrology, and geochemistry—disciplines that, along with crystallography, are at the core of the MSA. In retrospect, my migration from studies of the batholithic roots of volcanoes to my current work on active volcanism and associated hazards was entirely consistent with my long-held research interests. Through laboratory studies of the products of eruptions, volcanology is inextricably linked with geochemistry and petrology.

Much has transpired in the geosciences since Patrick Muffler and I were undergraduates at Pomona College in the mid-1950s and during our subsequent three-plus decades with the U.S. Geological Survey (USGS). From conducting specialized and generally non-controversial research in the various geoscience disciplines, geoscientists—particularly those with government organizations—are now increasingly being asked to demonstrate the relevance of their research in addressing national and, indeed, global concerns: assessment of natural resources, mitigation of geologic hazards, management of nuclear and toxic wastes, climate history and global change, and other issues related to Earth systems and the environment. Productive research alone no longer is enough. Not surprisingly, sometime in the 1980s, the USGS began to use the motto: Earth Science in the Public Service.

What exactly constitutes “public service”? There is no simple answer to this question, but I am certain that everyone at this awards luncheon believes that each of our jobs involves “public service” to some extent, basically because we believe that scientific endeavor is intrinsically valuable and, therefore,



by definition it contributes to the public good. However, it was not until my assignment to the USGS Hawaiian Volcano Observatory in 1972—and dealing first hand with the local officials, news media, and the general public on volcano hazards—that I first really began to appreciate the importance of the “public service” component of my work. For the first time in my scientific career, I became aware that scientists had an obligation to explain to the taxpayers, in non-jargon language, why our work is relevant, why it should be supported, and how the research results can benefit people and society. Such awareness was heightened even further, of course, when I had the job of coordinating the USGS response to the reawakening and catastrophic eruption of Mount St. Helens in 1980. As you might imagine, during that hectic time I really became “public service” conscious!

The Mount St. Helens experience, I think, also brought about an organizational rethinking of the mission of the USGS. Before 1980, there was clear consensus that its primary purpose was doing geoscience research and that it had little or no business to do what we now call “public outreach.” However, after the May 18th eruption, the USGS was swamped by requests for non-technical information about volcanoes, and it also sadly

discovered that it was not prepared to meet this unprecedented public demand. Almost immediately, the USGS attitude began to change, and I was asked to write a number of popular booklets on volcanoes and eruptions. And, as the saying goes, the rest is history. Looking back now, I take some pride in doing “outreach” before the word was even coined. Over the years since Mount St. Helens, I have become more convinced than ever of the need for scientists to be more actively involved in public service in addition to conducting high-quality research. Although these two requirements are sometimes difficult to balance, they are not mutually exclusive. I have also realized that making contributions to public service can be truly rewarding, not in a monetary sense because such contributions rarely result in promotions, but rather in a much deeper satisfying sense that one’s efforts can directly touch peoples’s lives. From my experience, doing science in the public service is where the rubber meets the road.

Because time is short, let me close by again thanking the

MSA for this very much appreciated honor in my career evolution from a practitioner of mineralogy and petrology to a popularizer of volcanology, with interspersed managerial assignments. Other than the frustrations inherent in management positions, I have travelled a most enjoyable and never-boring road. Along the way, I have been influenced and supported by many friends and colleagues within and outside the USGS, in particular: Roy Bailey, Bob Christiansen, John Christie, Carolyn Donlin, Bob Decker, John Dvorak, Rick Hazlett, Dave Hill, John Keith, Martha Kiger, (late) Monty Klepper, Peter Lipman, Jack Lockwood, Donald McIntyre, Patrick Muffler, Manny Nathenson, Gerhard Oertel, Donald Peterson, Herb Shaw, Tom Simkin, Karl Turekian, and Tom Wright. Finally, I wish to express heartfelt thanks to my wife, Susan, and to my daughters, Bobbi and Karen, for their unfailing encouragement, understanding, and patience throughout the years—even when meeting the demands of scientific public service came at the expense of spending quality time with the family.