

Acceptance of the Mineralogical Society of America Award for 1993

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Madam President, ladies, and gentlemen:

It is exciting to be here today. I am jubilant, exhilarated, and humbled, and I gladly accept this honor. When I first received word that I had been chosen for this award, I was of course surprised and excited. But it was not until just last week, when I received the official program and read the list of previous recipients, that I fully realized how great an honor it is. Then it hit me, and ever since I have had my stomach in knots. I will certainly do my utmost to live up to the challenge of continuing the tradition of excellence in both research and teaching represented by the previous awardees.

With this award, I believe there comes an important mandate—a mandate to transmit to students at all levels the excitement of doing science as I was so fortunate to have it brought to me. Maybe if we succeed in conveying that excitement and enthusiasm about the nature of science to enough people, we can convince politicians to keep funding basic science, even though the results may take ten years or more to be beneficial to the gross national product.

My interest in science was ignited early. My father is an experimental physicist who taught at the University of Basel. When I was a young boy, he showed me his research laboratories with all the fancy equipment he and his students were using. It was immediately clear to me that I would one day become a physicist, who could play all day long with these fascinating toys. Upon turning 18, however, when I had to make up my mind about what to study in college, I realized that two physicists were more than enough in any one family (my older brother was just finishing his Ph.D. in physics). Primarily through a process of elimination, I chose to enter geology, a decision I have never regretted.

I enrolled at the local university, that of Basel, where I obtained my *Diplom* (master's) in Earth sciences, working on a regional metamorphic terrain in the Alps, which was followed by a Ph.D. thesis on metasomatic effects in the Adamello contact aureole. During my studies, I interacted with many scientists, including my thesis advisers, Martin Frey and Kurt Bucher-Nurminen, who were the first to mold my geologic thinking. My thesis advisers had very different personalities: Martin Frey was quiet and steady; Kurt had the ability to ignite enthusiasm. It was Kurt who emphasized early on that it was in fact possible, contrary to my belief at that time, to understand the writings of scientists like Hal Helgeson and J. B. Thompson. Their papers had a profound influence in my later career.



During my Ph.D. work, I began to be the lucky victim of a series of coincidences that ultimately brought me here today. One summer, I think it was 1983, I had just been trying to slog through Tom Foster's papers on diffusion-controlled mineral textures, when I was relieved to hear that he was going to be in Basel. I learned one really basic but important thing from Tom: if the complicated nature of a geologic problem eludes your abilities to solve it, just do it in little steps, one at a time. Put together a simple model, understand that, and then take the next step. I firmly believe that this is my way of going about geologic sciences. And yes, those of you working on fluid-rock interaction may think it is time that I took the next step with my models. I know my models are still very simple-minded, but I am working on taking that next step.

Having tried to apply the available stable-isotope fluid interaction models to my thesis rocks in the Adamello without success, I was very discouraged and about to quit when Martin Frey encouraged me to spend two months at the Geophysical Laboratory working with Doug Rum-

ble. After I had outlined all my failed attempts to Doug, he simply asked why I thought all these models failed. The can-do atmosphere and Doug's enthusiasm for geology put me back on track and gave me back my excitement about geologic science. I guess I managed to impress Doug enough so that he literally packed me in the old lab van and drove me to the Johns Hopkins University in Baltimore, so I could meet Hans Eugster, John Ferry, and the rest of the faculty. I had read most of John's articles on New England, and what a surprise it was to realize that he was not an old, gray-haired person.

I received funding for one year of postdoctoral work from the Swiss National Science Foundation, which I used to go back to Baltimore. There I was fortunate to learn hydrothermal experimental techniques in Hans's lab. I also had the invaluable chance to learn from Hans about the world of supercritical fluids. Interacting with the faculty at Johns Hopkins really shaped my view of petrology, and, although I did not get my Ph.D. from Hopkins, my stay there had such an enormous influence on my scientific thinking that I do not go out of my way to correct the rumor that I did.

The funding started to dry up in fall 1988, about one year after Hans's premature death. I had applied to numerous faculty positions and gone to many interviews, but I still had no job offers. It was again Martin Frey who hired me as a postdoctoral fellow back at the University of Basel. I had barely returned there when I flew back to the States for what I believe was my thirteenth interview.

I finally got a job offer from the University of Wisconsin, and I started there in 1990. It has been a stimulating and challenging time. I look forward to tackling many more aspects of fluid-rock interaction with my colleague John Valley, who was instrumental in bringing me to Madison.

I wish to take this opportunity to thank my mother, Iris, my father, Eugen, and my wife, Sandra, for their support and love, and you, the scientific community, for your generous recognition and for expressing confidence in me.

What I really wanted to share with you today is that yes, I have worked hard, but that would not have been enough. Even more than that, I have been incredibly lucky. Were it not for Doug, Hans, John, and the many others who helped me to understand science and infected me with their enthusiasm and optimism, I would not have had the energy or the momentum to get to this point. Were it not for the many generous scientists who gave me the opportunity to work with them, to learn from and with them, I would not have had the tools to succeed. And finally, I am thankful for a number of lucky chances: what if Doug had not had time to deal with a disorganized foreigner of whom he knew nothing, or what if Hans hadn't been willing to open his lab to me?

I have had a lot of fun doing science and will do my best to pass on to others what was given to me: the excitement and satisfaction that basic Earth science has to offer.