

## **Presentation of the Mineralogical Society of America Dana Medal for 2003 to Mark S. Ghiorso**

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Our Dana Medal awardee was born and educated in San Francisco, and went to Berkeley as an undergrad in 1972, and graduated in 1976. He evinced an intense interest in hot springs, and his honors thesis was on the Hot Springs of the Devil's Kitchen of Lassen Park.

Thereafter his interest in geothermal waters prospered, particularly in the acid sulfate hot springs, and he became adept at all sorts of wet chemical techniques to measure the metals Fe, Ni, Zn, Cu as well as As, Ge, B, F, etc., and he set up experiments to measure the stability of alunite,  $KAl_3(SO_4)_2(OH)_6$ . While he was doing wet chemistry in my lab I was trying to formulate a solution model for silicate liquids using experimental solid-liquid equilibria. My attempts at doing this so frustrated Mark that he took over, and for the last 20 years he has been deeply engaged in establishing a solution model to allow magmas to be generated or cooled on a computer. In 1980 Mark got his Ph.D. and went to the University of Washington as an Assistant Professor and five years later he was selected for an NSF Presidential Young Investigator award.

This award triggered an interview with the University of Washington (UW) weekly newspaper, and there is an intriguing quotation from this. However as the competing headline

stated that only 75% of UW faculty would be getting a pay raise that year, many of Mark's comments were probably not widely read.

It was reported that Mark had tried and failed three times to get NSF funding, which Mark attributed to "it's because I'm trying to break in with a completely new idea" on the thermodynamics of silicate melts. Then he indirectly paid Berkeley a compliment: he said "Usually Assistant Professors like us come from graduate programs in large institutions where as students we had all the money and equipment we needed to work." Little did he know that it was an igneous petrology grant, related to volcanic rocks, which supported his Ph.D. work on hot springs, which, parenthetically, has never been published. But his work on representing solid-silicate liquid equilibria thermodynamically is now world renowned, and we are going to hear how this has now been applied from the surface to the lower mantle.

Several things stand out from Mark's early career; no graduate student ever worked harder; everyone gets rejected by NSF sooner or later; it's a bad idea not to publish your thesis, but it is always a good idea to change fields of research and add to your earlier interests, which is why we are here today to honor the 2003 Dana award winner.