

## Acceptance of the 2014 Roebling Medal of the Mineralogical Society of America

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Thank you, Jon, for that flattering introduction and thank you again for nominating me for this most prestigious award. MSA was the first society I joined as a graduate student and standing here with the Roebling Medal after a very long journey in the scientific world is a humbling experience. And, in keeping with tradition, I'd like to tell you some of the story of the circuitous path I have taken.

It didn't start well. I left school at 16 and went to work for the Gas Company in London as a laboratory technician. After a few months I was called to the HR Director's office and informed that, although I was popular with my workmates I was being let go because I was "not bright enough to be a technician at the Gas Company." In the short time in that lab, however, I had learned that the secret of not working too hard and taking long coffee breaks was having the magic letters B.S. after your name. So I went back to finish high school with the intention of progressing to a Chemistry degree. My high school grades were poor however and no University would accept me. I went to my local Polytechnic, a second-tier institution in London, a week before the new academic year began and they said they would take me but my grades were only good enough for Chemistry and Geology, not for straight Chemistry. I went home and looked up "Geology" in the dictionary. (I was an inner-city kid remember.) Geology sounded interesting so I started the following Monday.

The Polytechnic was full of people working full-time and studying in the evening. They were so motivated and they set wonderful examples for the younger people like me. Despite its low academic status the place was full of faculty who also had very chequered and interesting backgrounds. I was enthused by teachers like John Charalambous (inorganic chemistry) and Stephen Morel, a field geologist who had worked for many years in Malawi. I did well and my lecturers pushed me into trying for graduate school. I wanted to work with Roger Burns in Oxford but he couldn't support me for the entire Ph.D. and I was fortunate to find the eclectic Roger Strens who became my supervisor in Newcastle. Although I worked predominantly on crystal field theory, I finished my Ph.D. intrigued by the potential of combining thermodynamics with experiments to develop thermobarometers. By pure chance I chose  $\text{Al}_2\text{O}_3$  in orthopyroxene as a trial geobarometer at the time that, unbeknownst to me, Joe Boyd was trying to use exactly this system for southern African garnet peridotites. Anyway, I managed to get post-doc funding to do the experiments in Manchester. A Japanese visitor, Shohei Banno cleaned up the thermodynamics and we wrote a paper that turned out to be incredibly timely. My career was launched. In Manchester, W.S. (Mac) Mackenzie (a staff member at the Geophysical Lab in the 1950s) decided I needed to see more of the scientific world and fixed with his old friend Ian Carmichael for me to teach two quarters of metamorphic petrology in Berkeley in 1972. When I expressed



doubts about my knowledge of metamorphism he just said, "It'll be good for you. And you only need to stay a week ahead of the students." Fortunately I went.

Berkeley in 1972–1973 was an exhilarating place, clouded with marijuana smoke, buzzing with the aftermath of the anti-Vietnam War demonstrations and engrossed in the Watergate hearings. Ian Carmichael, who was Chair, absorbed me into his group and my education advanced rapidly during vigorous arguments with my office-mate Bruce Marsh and with the occupants of Hal Helgeson's "Prediction Central". Charlie Bacon was my Teaching Assistant and fortunately he actually did know something about metamorphic petrology. So, between us we managed to put together a respectable course. On my return to Manchester, Alan Thompson had just moved to Harvard and I was appointed (from only 17 applicants) to his faculty position. Mac and Jack Zussman (Department Head) looked after me and provided the funding I needed for experimental work and for students. Of the latter, I can pick out Hugh O'Neill and Wendy Harrison as having been particularly interesting, stimulating, and stubborn. (No particular order).

In 1981, I moved to Northwestern and stayed for a very happy eight years. Working next to a strong geophysics group and interacting with Seth Stein, I became interested in applying my thermodynamic and petrological knowledge to whole earth structure, particularly to seismic discontinuities and phase transitions. Sy Schlanger, who had been Chair in four or five different universities, taught me some of the secrets of being an effective department Chair. In addition, there was something about Northwestern that seemed to attract a range of interesting and talented graduate students (e.g., Craig Bina, George Helffrich, Glen Mattioli, Alan Woodland) and they all helped to keep us on our toes.

In the U.K., 1987–1989 brought the Oxburgh review of Earth Sciences and a great upheaval with Departments closing or expanding. Bristol, with great traditions in Physics and Chemistry was deemed weak in Geology and in need of dramatic change. The decision was taken to hire two Professors and to provide them with money for laboratories and about 10 further faculty positions to fill. Several senior people were approached and, in typical British fashion, the short-list of five were interviewed in alphabetical order by a huge committee all on the same day. Due to exhaustion, the committee chose the last two on the list, Steve Sparks and me. I can still feel the excitement of starting a Department almost from scratch. We spent money, normally in very short supply, like it was go-

ing out of style and hired nine faculty members in one week. It was incredibly liberating. Amongst those who came along were students, post-docs, and faculty who continued to strongly influence the direction of my career. In that context I should particularly mention Jon Blundy, George Helffrich, Dave Sherman, Tim Elliott, Mike Walter, and Dan Frost.

Although I have moved on to Oxford I still feel incredibly proud of the job Steve and I and the other faculty did in turning the Bristol department into a player in international Earth science. It was a major highlight of my career. But today is an even greater highlight. And it is marvelous to stand before so many good friends and colleagues who have come to celebrate this award with me. Thank you all!