

Award

2009 Barringer Medal for Wolf Uwe Reimold

The study of impact craters and the processes that are related to their formation is a relatively new science. Considering that impact processes have been essential from the beginning of the solar system onwards, it is a bit surprising that it took us so long to recognize their importance. The pioneers of this field laid the foundations for the next generation mostly in the 1960s and 1970s. This “second” generation then combined a variety of fields and techniques that really helped to etch impact science into the consciousness of the general earth science community, and also educated the general public on the importance and fascination of this research topic. This year’s Barringer Medal goes to Wolf Uwe Reimold, who is a towering member of this “second generation” of impact researchers, and who has made so many important contributions to this field, not only in science but also in education and outreach, that it is difficult to summarize them in such a short note.

Wolf Uwe Reimold, or just “Uwe”, as he is known to his friends, was born in 1953 in Germany. Like many young men going to school, he was unaware of his “true calling” until later. Not wanting to study law at university (and thus defying his parents who wanted him to earn a proper living), Uwe enrolled in mineralogy classes at the University of Münster. There he became a student of Dieter Stöffler, an early pioneer of our field. Dieter had arrived in Münster after having worked in Tübingen with Wolf von Engelhardt, a yet even earlier pioneer of impact studies. Uwe duly learned mineralogy and had his first encounter with shock metamorphism, and completed his diploma thesis (on the shock metamorphism of dunite) with distinction in 1977. He obviously was hooked and continued his doctoral work in Münster as well, again with Dieter Stöffler, where he produced a seminal thesis on the Lappajärvi crater in Finland in 1980. Uwe thus graduated—again with distinction—in 1980. After research appointments at the Lunar and Planetary Institute in Houston from 1980 to 1982, and continued postdoc work in Münster, he moved to South Africa in 1984. Here he started as a Research Fellow at the Bernard Price Institute of Geophysical Research, University of the Witwatersrand in Johannesburg, working on the petrography, geochemistry, and geochronology of granitic and mafic rocks from the Vredefort Dome—thus began a lifelong passion for this particular impact structure. Uwe likes to confront big targets: Vredefort is the largest and also the oldest impact structure on Earth. For a while, Uwe moved around on the



Prof. Uwe Reimold during the 2004 drilling project at the Bosumtwi impact crater, Ghana.

Wits University campus, from the Bernard Price Institute to the Schonland Research Centre for Nuclear Sciences, then to the Economic Geology Research Unit, and finally the Department of Geology (which later became the School of Geosciences). Over the years, Uwe worked his way up from research fellow to senior research fellow to senior lecturer and associate professor to “ad hominem” full professor of mineralogy at the University of the Witwatersrand. Since 2006 he has been professor of mineralogy, and head of the respective research group (previously Institute of Mineralogy) at the Museum of Natural History, Humboldt University, in Berlin, Germany, where he succeeded his now retired former advisor, Dieter Stöffler, who had earlier moved from Münster to Berlin. In a way, this closes a very interesting circle.

Since he began to work on his diploma thesis at the University of Münster, Uwe has been on the forefront of research on shock metamorphism and impact cratering. He is one of the foremost experts on these topics in the world today. Not only is he a gifted mineralogist and petrographer with an amazing eye for details and, at the same time, the salient

information that can be gained from a thin section, but he is also an excellent field geologist, who is equally at home with many different geological and even geophysical techniques.

Uwe Reimold has done original and ground-breaking research on topics that range from the study of shock metamorphic effects in a variety of minerals and rocks, to the petrography and geochemistry of impact melt bodies (in particular at Scandinavian, Canadian, and African craters), to lunar rocks and meteorites, to the confirmation of numerous impact structures in southern Africa, to the age dating of several impact structures, and, especially, the study of the Vredefort impact structure in South Africa. This latter aspect of his work, which dominated the 20 years he spent in South Africa, also led to his decade-long work on pseudotachylitic breccias and the quest to understand their formation and their importance in impact cratering. I know of nobody else who has contributed more to their understanding than Uwe.

Another major accomplishment, during his tenure in South Africa from 1984 to 2005, was his crucial research and leadership that led to the discovery and/or confirmation of several meteorite impact structures in southern Africa—this includes the Tswaing (Pretoria Saltpan) crater in South Africa, the Roter Kamm crater in Namibia, the Kalkkop crater in South Africa, and the Kgagodi crater in Botswana, as well as critical early research on the Vredefort and Morokweng impact structures in South Africa.

I could go on for pages in describing his research accomplishments, which are diverse and always of the highest quality, but I think his publication list speaks for itself. Uwe has not only (co)written or edited 12 books, but he has also (co)authored about 250 peer-reviewed scientific publications—a truly amazing and outstanding record. This productivity comes on top of his distinguished teaching record, which includes also the supervision of about 20 students for MS or PhD theses or postdoctoral researchers. In addition, he has been very active in the community, organizing countless symposia, conferences, and field excursions. There were many highlights. The first big meeting that Uwe organized was the International Workshop on Cryptoexplosions and Catastrophes in the Geological Record in July 1987 in Parys (Vredefort; South Africa) with a pre-meeting field trip to the Roter Kamm crater in a remote and restricted desert part of Namibia; incidentally this was the occasion on which Uwe and I first met. As they say in the movies, it was the beginning of a long and wonderful friendship. To those of us who attended that meeting, it was memorable for more than one reason. The South African geological community was, at that time, still in the “impact denial” phase (which is interesting because on another “controversial” topic, plate tectonics, it was a South African geologist, Alex Du Toit, who recognized the importance of this concept decades before the rest of the world caught up). The, let us charitably say, unusual and controversial opinions of leading South African “anti-impactist” and conference co-

organizer Louis Nicolaysen were a major source of entertainment for the international participants at the meeting. However, at that time Uwe had to tread more carefully, not having a tenured position yet. I don't think that I overstate the case if I say that it was predominantly Uwe's work over the next decade or so that turned the tide in South Africa, and that most geologists there now accept the importance of the impact process. Uwe's involvement in the recognition of so many southern African craters led, in 1999, to his founding of the Impact Cratering Research Group at Wits University, which has even survived his move to Germany. Uwe went on to organize several more important international conferences, most of them with exciting field trips (one of his specialties), for example, the 62nd Annual Meeting of the Meteoritical Society in Johannesburg, South Africa, in July 1999, the GSA-GSSA Field Forum on Processes on the Early Earth in July 2004, and the recent Large Meteorite Impacts and Planetary Evolution Conference, again at Vredefort, in the summer of 2008.

Adding to this astonishing record, Uwe Reimold has been very active and influential in the area of geoconservation and the protection of geological heritage, and has been of service to many professional organizations. Highlights would include the Geological Society of South Africa, where he was elected President for the 2002/2003 term, and the Meteoritical Society, where he served on the Council as well as on the Barringer Medal Committee as chairman in 2005. In addition, he has been an associate editor of the journals *Geochimica et Cosmochimica Acta* (since 2001), *Meteoritics & Planetary Science* (since 2003), and the *Geological Society of America Bulletin* (from 2007). He is a Fellow of both the Meteoritical Society and the Geological Society of South Africa, held the prestigious De Beers-Alex L. Du Toit Memorial Lectureship in 2006, and was elected a foreign member of the Austrian Academy of Sciences in 2007.

But at the end I would like to conclude on a private note. Uwe has been a close personal friend and an equally close scientific collaborator for over 20 years. During this time, I have been able to observe his dedication to science, his energetic and engaging way of doing research, his passion for impact research and related topics, his amazing ability to work at a pace that most of us find dizzying, his talent for outreach and popularization, and, above all, his constant, abundant, diverse, and high-quality research and publication record. Together, he and I have worked on many projects, attended numerous conferences (often sharing rooms), and written many joint publications (112 on last count). In addition, there been many field trips and expeditions together—too many to list here, but a few highlights need to be mentioned. These were mainly trips to craters in remote areas of our planet, including several tours in southern Africa (such as to the Roter Kamm crater in Namibia, or searching for impact structures in Zimbabwe and Zambia), a particularly

memorable voyage to Libya to study the BP and Oasis impact structures and jointly deal with the Hydra of Libyan bureaucracy, and several trips to the Bosumtwi crater in Ghana. Besides engaging research discussions, we also had numerous unforgettable personal experiences. Yes, we had our disagreements, but in the end the friendship came out stronger than before. Numerous personal “exchange” trips between Johannesburg (and now Berlin) and Vienna (and Italy), including to our respective weddings, are witness to this. We might even succeed in writing a somewhat delayed textbook together, if only we could find the time between all the other exciting research projects.

I can hardly think of a more deserving candidate for this

award and I am very pleased that my esteemed colleague and good friend Uwe Reimold is the 2009 recipient of the Barringer Medal “for his ground-breaking contributions to the study of impact structures and processes in the field and in the laboratory, in particular for his crucial contributions towards the discovery and confirmation of impact structures in southern Africa.”

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