

President of the Society of Geology Applied to Ore Deposits, Nominators, SGA members, and friends.

I am deeply honored to receive the Newmont Gold Medal of the SGA, and even more honored when I consider the impressive list of previous awardees.

Working on geology applied to ore deposits was my dream since I studied geology at the University of Granada in southern Spain. My father, also geologist, and Prof. Puri Fenoll (she the organizer of the second Biennial SGA Conference in Granada), had a responsibility for this dream. Thanks to the German Academic Exchange Service, the DAAD, I could register for a PhD at the University of Heidelberg in Germany, at that time a center of ore deposit research with Professors Ramdohr, Amstutz, and Moh. It is exactly in the office of Christian Amstutz that SGA and also Mineralium Deposita were established 11 years before I arrived in Heidelberg. At the Mineralogy Institute, involved with students from the whole world, there was an exciting international environment, not devoid of genetic controversies. There, I also experienced that as a student one learns not only from professors, but perhaps even more from fellow students. Subsequently, once established in Geneva and a full professor, I realized that again I was learning the most from enthusiastic and talented students and post docs. Thanks to all of you!

Societies such as SGA and SEG are essential for the advancement of our science and for our profession, particularly for students and young professionals. I have always felt committed to SEG – I was president some years ago – and also to SGA. The SGA News was created in Geneva and I was the first editor, soon followed for many years by Massimo Chiaradia, also in Geneva. I am confident that collaboration and communication between both societies are reinforced and date clashes like the one we have suffered this year with the conferences in Zürich and London will not happen again. In London I learned from SEG President Stuart Simmons a memorandum has been signed between SGA and SEG along these lines.

To be appointed in 1990 as professor of economic geology in Geneva was an incredible opportunity. I found an absolutely open scene in Switzerland, with unrestricted access to labs and fantastic colleagues. In addition, the 1990s and 2000s was a time when the mining industry was in crisis because of low prices; numerous universities and geological surveys in the northern hemisphere were drastically cutting ore deposit research. In contrast, Switzerland was an anomaly. The government continued to invest in research on ore deposits, including generous projects by SNF. This allowed dynamic groups in economic geology to flourish in Zürich with Chris Heinrich, in Bern with Larry Diamond, and also in Geneva. The exchange between our groups was continuous, as it continues to be today. I feel privileged for this and I would like to express my sincere thanks to all who made this possible.

In Geneva, together with my colleagues Robert Moritz, Massimo Chiaradia, and Kalin Kouzmanov, I worked on many interesting projects, mainly in the Andes – a connection that started in Heidelberg – but also in Europe and other parts of the world. As you have heard, this included MVT deposits (with Hendrik Gorzawski, Jorge Spangenberg and Nicolas Saintilan), IOCG (with Robert Marschik, Karin Requia and Antoine de Haller), VMS (with Marc Polliand, David Tripodi), gold skarn (with Agnes Markowski and Jean Vallance), and orogenic gold (with Yves Haeberlin) deposits, as well as studies on mine tailings and supergene processes (with Bernhard Dold and Marie Caroline Pinget).

Since I had experience on MVT deposits, I was fortunate to be invited to visit a so-called "MVT deposit", or perhaps "Sedex", in Peru that was very odd. Indeed, when I arrived in Geneva, we analyzed the samples and discovered that this zinc-lead deposit, San Gregorio in the Colquijirca district, was full of hypogene alunite. We realized that this carbonate-hosted deposit had been massively affected by advanced argillic alteration and the zinc-lead mineralization had been formed close to surface, in the upper part of a porphyry system. This was the beginning of extremely exciting research on Cordilleran polymetallic deposits as part of the porphyry system, together with my colleague Kalin Kouzmanov, and Master and Ph.D students who included Ronner Bendezu, Regina Baumgartner, Honza Catchpole, Bertrand Rottier, and Vincent Casanova. In this context I would like to thank the input and guidance of Marco Einaudi, Jeff Hedenquist, Steve Kesler, and Richard Sillitoe. There are many more colleagues and students that I cannot mention here, but I acknowledge all of you.

All of this would not have been possible without the support of the SNF, DFG and European Commission, plus collaboration with industry, organizations that have funded and continue to fund several research projects, as well as BRGM and the Swedish and Spanish geological surveys.

As you have probably understood by now, for me to conduct study on the geology of ore deposits is just fun, and I feel I have still a lot to learn. Therefore, I am very fortunate that, although in theory retired, I am allowed to continue to work both in research and advising exploration groups. Concerning my present activities, I would like to thank not only my colleagues in Geneva, but also Profs. Silvia Rosas and Lisard Torró from the Pontificia Universidad Católica del Perú in Lima, and Prof. Cyril Chelle Michou at ETH Zürich, for their invitations to collaborate with their research groups.

At the end, a brief message to students and young professionals: as just noted, the 1990s and early 2000s were not so brilliant concerning jobs in Economic Geology. Now we have the opposite situation. Society has realized that Mineral Resources are critical for a number a key issues, including the transition to a decarbonized economy. Never was knowledge was so accessible, or analytical tools – including in real time in the field – so powerful. This means that there has never been a better time to be an economic geologist! Society needs you to solve many pressing issues, as we have heard in the SGA keynote presentations.

Finally, thanks to my family: Both my father and my mother worked at the University of Granada and ensured that I had an excellent education, also in languages; this was despite difficult times, when Granada was far from everywhere and Spain still a dictatorship. My career in Heidelberg and Geneva, including the addition of many administrative obligations, would have not been possible without the strong support of my wife Susanne Theodora Schmidt, an outstanding researcher in the field of low-grade metamorphism and optical mineralogy plus other topics, and an enthusiastic teacher at the universities of Heidelberg, Basel and Geneva. Very sadly, Susanne passed away three months ago at the age of 68 after a long and brave fight with ALS. Our son, Moritz Fontboté Schmidt, Doctoral Student in Quantum Physics at the ETH, and I feel extremely thankful to have had such a wonderful person by our side.

I sincerely thank the nominators for putting my name forward, and the SGA Council for awarding me this recognition.

Lluís Fontboté, 29 August, 2023

Department Earth Sciences, University of Geneva, Switzerland