AGS Distinguished Scientist Award. Gesner Medal 2011.
Dr. Dan Kontak

Dan's contributions to Atlantic Geoscience are mainly in the fields of economic geology, petrology and applications of structural geology, geochronology to understanding the timing of tectonic events that accompany mineral deposition. He is an expert in the many techniques that need to be applied to mineral deposit studies, such as fluid inclusions and stable isotopes.

Dan's research career is now into its fourth decade, and his publications are impressive both in terms of quantity and quality. He has published nearly 90 papers in the top-ranked international journals in his field, as well as nearly 20 book chapter articles, and more than 160 government reports. This mightily substantial body of work has drawn the world's attention to the mineral deposits of the Canadian Appalachians, and Nova Scotia in particular.

Dan's research primarily focuses on the origin of ore deposits and their relationship to petrologic and tectonic processes. Many of his studies are based in Nova Scotia, in part because of his long association with Nova Scotia Department of Natural Resources. But this research has continued, in no small measure because Dan has shown that many of Nova Scotia's deposits are natural laboratories for studying ore systems in general.

His research is process-oriented with first order results applicable on the world stage and to at least the last 2.5-3.0 billion years. His research is rooted in basic field geology, and complemented by a strong theoretical background in ore deposits, mineralogy, petrology and tectonics. Dan has been at the forefront of the research in Appalachian deposits for many years, and many, if not all of the principles, processes and techniques he has used are equally applicable to the Precambrian.

A cursory glance at his CV reveals that Dan has experience in a wide variety of deposit types (Au, Pb, Zn, Sn, W, Mo, Cu, Ba, F). He has established himself as one of the world's leading authorities on a wide variety of economic deposits, including Kuroko-type, lode Au-type and Mississippi Valley-type deposits, each of these types with classic Nova Scotian examples.

His work has been recognized at the highest national level. In 2001 he won the Julien Boldy Award for best Economic Paper at the GAC-MAC Meeting, and in 2002, he won the Hawley Medal, awarded annually by the Mineralogical Association of Canada for the paper judged to be the best published in the Canadian Mineralogist for an article entitled "A Petrological, Geochemical, Isotopic and fluid-inclusion study of 370 Ma peraluminous pegmatite-aplite sheets, Peggy's Cove, Nova Scotia, Canada". Most recently he has written world-class papers on the North Mountain Basalt documenting the relationship between liquid immiscibility, igneous fractionation and PGE deposits.

Dan's field work is characterized by meticulous observations of field relationships and structural analysis, typically complemented by petrographic observations and textural analyses. In my view, Dan is a master at extracting relevant information from a combination of petrographic, electron microprobe and SEM analyses. Dan then uses an extraordinarily wide range of analytical approaches, including lithogeochemistry, stable and radiogenic isotopes (as tracers and for dating) and fluid inclusion analyses, which are carefully linked to petrographic observations.

This multi-faceted approach has yielded major advances in our understanding of ore deposits. His research is internationally recognized to be of the highest quality. To focus on just one example, his work on Meguma mesothermal gold deposits has provided first-order insights into their origin and evolution, and their relationship to coeval plutonism and metamorphism. His work has challenged conventional wisdoms and has led to a deeper understanding. Dan's papers are published in high quality journals, and collectively challenge us to think about deposits from a different perspective. They typically contain high quality data from a wide variety of fields. They are data-rich, mature, archival studies with a long shelf-life. I would think he is recognized as one of Canada's foremost leaders in such deposits, a most impressive assessment of in a very crowded, topical and highly competitive field.

It is extremely important to realize that Dan has published on processes that encompass wide range of deposits, from orogens as old as 2 billion years in Labrador, to the Cenozoic tectonics of the Andes. As such, he has experience in ore deposits at all levels in the crust, an experience that very few have.

Dan's contributions to mineral deposits extend beyond his own research. Dan is deeply interested in the education of students and he has the ability to deliver on this philosophy. He has an encyclopedic knowledge of ore deposits and its cognate disciplines. It is clear that he has been able to infect students with his enthusiasm, and so has contributed in a very direct way to the development of the next generation of ore deposit geologists. These students learn to use the wide variety of techniques that apply to mineral deposit studies, and these experiences are so important at a critical developmental stage in their careers.

Dan has contributed to the geological fabric of all communities he has worked in. He has a long-time relationship with the AGS, most often as a presenter at our various colloquia, and organizer of special sessions and workshops. He is also a former President of the AGS (1991-

1992) and served on the Council for many years. Indeed it was under his presidency that the Gesner Medal was first conceived and awarded. Dan Kontak is an international star in ore deposit studies and is a sterling ambassador for Nova Scotia geology, as well the institutions he has worked for.