

## SARAH-JANE BARNES 1994 W.H. GROSS MEDAL WINNER

The William Harvey Gross Medal is awarded annually by the Mineral Deposits Division of the GAC. It was established to highlight the efforts of young geologists and, like the Duncan Derry award, acknowledge outstanding contributions to the field of economic geology in a Canadian context.

It commemorates a remarkably dynamic and enthusiastic individual, Bill Gross. As a professor at the University of Toronto, Bill inspired and stimulated student minds; he even ran popular Saturday morning lectures. He was also a successful exploration geologist. He has been described as pragmatic, an entrepreneur and a conceptual geologist.

This year's winner of the William Harvey Gross Medal is Sarah-Jane Barnes.

Sarah-Jane Barnes completed her B.Sc. with Honours in Geology and Chemistry from the University of Witwatersrand in 1975 and went on to graduate studies at the University of Cape Town. There, she undertook a thesis project on the serpentinites in Central South West Africa/Namibia, and in 1979, was awarded an M.Sc. During the course of this work, she was employed by the Geological Survey of South West Africa.

Sarah-Jane came to Canada in 1979 to acquire a Ph.D. with Tony Naldrett at the University of Toronto. Following up on her interest in ultramafic rocks, she did a dissertation study on the origin of platinum group element fractionation in Archean komatiites of the Abitibi Belt in northern Ontario, and graduated with a Ph.D. in 1983. Following completion of her Ph.D., Sarah-Jane taught at the University of Toronto, first as a teaching assistant and later as a sabbatical replacement Assistant Professor teaching mineralogy and petrology. In 1984, she began a two year Post-Doctoral fellowship with the Norwegian Council for Industrial and Scientific Research in Trondheim, studying the Rana layered intrusion as a potential platinum deposit.

In 1986, Sarah-Jane took up her present position of Research Professor at the University du Quebec at Chicoutimi, where she teaches economic geology and igneous petrology and continues her research into ultramafic rocks and platinum group elements.

Sarah-Jane is best known in the economic geology community for her considerable contributions to our understanding of the nature and distribution of PGE deposits. In the more than 15 years in which she has been involved with research into ultramafic rocks and PGE deposits, she has amassed

an impressive volume of publications on topics ranging from theoretical aspects of their petrogenesis to practical matters of the how and where of PGE ore deposits occur. She has published numerous articles on her research on areas ranging from Namibia to northern Ontario, and has been involved in research projects on such topics as the marginal rocks of the Muskox Intrusion, the komatiites of northern Norway, the Duluth Complex, and Noril'sk. In particular, Sarah-Jane has made substantial contributions to the knowledge of PGEs and ultramafic rocks in her adopted home province. Since arriving in Chicoutimi, she has consistently applied her considerable talent to both the academic and practical matters of PGE mineralization in the various regions of Quebec. She has been involved in projects in the Grenville, the Cape Smith Gold Belt, the anorthositic complexes of the northern Abitibi, and the Baby-Belleterre belt of northern Quebec. In all of this work Sarah-Jane has consistently involved students. Since 1986, she has supervised 8 post-graduate and 4 B.Sc. students. Already, the first wave of this new generation of researchers with expertise in ultramafic petrology and PGE mineralization is making its mark in government surveys at home and abroad, academia and the exploration industry.

Sarah-Jane's contributions to the science and to the minerals industry can be readily judged by a quick perusal of her impressive bibliography, which includes more than 25 refereed publications and a host of informal reports, guidebooks and abstracts. In addition, she has taken the initiative to provide many opportunities for scientific communication within the academic community and the minerals industry. She is an active participant in the PGE working group and has organized or helped to organize a number of international symposia on PGE geology including a special session on "Advances in the study of Platinum Group elements" at the 1989 GAC/MAC meeting in Montreal and "What's Hot in Komatiites" at the 1991 GAC/MAC meeting in Toronto. She has served as guest editor for a special issue of the Canadian Mineralogist on "Advances in the study of Platinum Group elements" and serves as a committee member for the Continental Drilling Program and a councilor for Canadian Mineralogist.

To aid the practical application of her research, Sarah-Jane has given short courses at the CIM Field Conference in Rouyn-Noranda in 1990, MERQ and CGQ in Quebec, to the Prospectors and Developers' Club in Sudbury, the Prospectors and

Developers' Club of Duluth, and for CIDA at the University of Bahia, Brazil. The impact of her ideas on PGE exploration techniques is emphasized by the fact that they have been the subject of a feature article in the Northern Miner Bulletin.

A critical part of her research has been the development of analytical techniques for the analysis of PGEs at low levels. Analytical techniques developed in her laboratory in Chicoutimi have allowed her to carry out sophisticated petrological studies involving rocks with very low concentrations of PGEs. Her laboratory is recognized as a leader in analysis of PGEs in low concentrations and is in considerable demand for workers with intractable analytical problems involving these elements.

In a few short years, Sarah-Jane Barnes has established herself as one of the leading researchers in PGE petrology and the genesis of PGE ores. Her scientific work is highly regarded and widely cited throughout the academic community. She has shown herself to be a leader in analytical techniques and an insightful theoretician and has made considerable efforts to promote the practical applications of her research. She has consistently involved students in her research, providing them with interesting and challenging research projects, successfully training them as productive researchers and seeing that their important results were communicated to the scientific community. Furthermore, she has successfully communicated the practical importance of this work to the mining and exploration community, and her work finds interested clients not only in the halls of academia but also in the exploration camps of northern Quebec. There are few young scientists today who can claim to serve such a broad spectrum of the science so well. We are proud to be able to award the 1994 William Harvey Gross Medal to Sarah-Jane Barnes.

*Scott Swinden  
Chairperson, MDD*

