James Macnae

ASEG Gold Medal

Sydney August 2010

CITATION:

The ASEG Gold Medal, for exceptional and highly distinguished contributions by a member to the science and practice of geophysics, is awarded in 2010 to Professor James (Jim) Macnae.

Professor Macnae is an internationally recognized and acclaimed researcher and teacher in electro-magnetic (EM) methods for applied geophysics. Jim received his Doctorate from the University of Toronto in 1981. While in Canada, he was part of a team inspired by Yves Lamontagne and Professor Gordon West at the University of Toronto which developed and applied the highly-successful UTEM time-domain EM system. Jim moved to Australia in the early 1990s to take up a professorship at Macquarie University. Since moving to Australia he has been a leading researcher and teacher not only in Australia, but on the world stage.

He led a program developing airborne EM software development within the Cooperative Research Centre for Australian Mineral Exploration Technologies from 1992 to 2000, developing with his students a package which is now commercially available and is an industry standard. Since joining RMIT University in Melbourne in 2001 he has pursued a vigorous research program, attracting some $2 million research funding from the Australian Research Council, AMIRA and mining company sources.

In addition to his core interests of airborne EM methods, Jim has a record of pushing the envelope on a range of geophysical technologies such as inductive source resistivity, the use of capacitative and charge coupled electrodes for EM methods, magnetic data acquisition from unmanned airborne vehicles, and the conceptual development of an airborne induced polarisation method.

Jim has taught numerous courses both for universities and private industry and is widely regarded as a teacher with deep insight into the science and methodology which he imparts. He has received numerous journal and conference “Best Paper” awards from the SEG and ASEG and is a regular choice for providing a “key note” talk at conferences, including the Fifth Decennial International Conference on Mineral Exploration held in Toronto, September 2007.

Some of Jim’s key contributions to the profession include:

- Program leader of multiple industry, AMIRA and ARC-funded research projects in air EM and ground EM methods, which have attracted support from exploration companies world-wide, and which have delivered state of the art commercial software for EM interpretation.
- Co-authorship of two chapters of the Society of Exploration Geophysicists' text "Electromagnetic methods in Applied Geophysics", which contains contributions from eminent EM geophysicists from around the globe.
- Co-authorship of three major reviews of the state of the art in electrical and electromagnetic methods, published in The Leading Edge (2005), and presented at the Fourth and Fifth Decennial International Conferences on Mineral Exploration (Exploration 97, 2007) in 1997 and 2007.
- Presentation of short courses on practical interpretation of surface, drillhole and airborne EM in Australia, South America and South Africa.
- The large number of citations to his publications in international books and journals covering surface, airborne, drillhole and marine electromagnetic methods.

In addition to his research and teaching activities, Jim has been active in the affairs of the ASEG, acting as Technical Program Co-Chairman of the 18th ASEG – GSA conference 2006, and Technical Co-Chairman and Co-Editor of Proceedings of the Third 3D-EM Workshop, Adelaide, 2003. and Co-Editor, referee and author of many ASEG publications and papers.

Jim has always been extremely generous with his time to discuss any aspects of EM theory or to examine problematic data sets. He has also been a patient, tireless, and passionate supporter of tertiary geophysics education; teaching and supervising numerous undergraduates and post-graduates that have gone on to apply geophysics to the benefit of Australia.

It is fitting that Jim is now be recognised with the ASEG Gold Medal for exceptionally and highly significant distinguished contributions to the science and practice of exploration geophysics.