

## AINSE Gold Medal Award - 1998 Prof Ian McDougall

Australian National University



Professor Ian McDougall (L) receiving  
his presentation from  
Professor Ron MacDonald (R)

Professor Ian McDougall is one of Australia's most internationally distinguished earth scientists. His pioneering work in the fields of potassium-argon and  $^{40}\text{Ar}/^{39}\text{Ar}$  dating have made fundamental contributions spanning a broad spectrum of applications over four decades. It would be difficult to over-estimate the importance of these methods of the modern earth sciences as they provide much of the foundation upon which the numerical geological time scale is based. Professor McDougall's work in  $^{40}\text{Ar}/^{39}\text{Ar}$  datings, in particular, represents an important application of nuclear science in Australia and has been supported by AINSE over many years.

In addition to his role in developing these dating techniques, his contributions have been particularly significant in: establishing the geomagnetic polarity time scale as one of the foundations of the theory of plate tectonics; characterising the evolution of oceanic island chains and demonstrating their relationship to underlying plate motions; development of a highly-precise time framework for hominid evolution in East Africa; development of  $^{40}\text{Ar}/^{39}\text{Ar}$  step heating methods as a powerful tool for understanding time-temperature relationships in the evolution of geological terranes; and application of noble gas geochemistry to study mantle-derived materials, including the identification of a primordial solar noble gas component within the earth.