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## The New Zealand Association of Scientists Awards for 2012

The Marsden, Shorland and Research Medals and the Science Communicator Award were presented at a function held in Wellington on Tuesday 27 November 2012..

### Marsden Medal

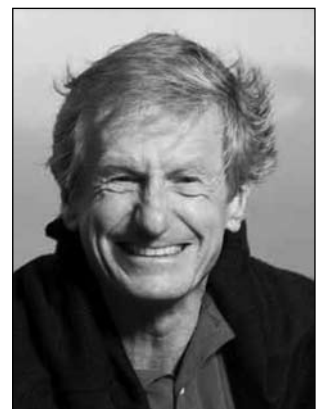
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The Marsden Medal is awarded for a lifetime of outstanding service to the cause or profession of science, in recognition of service rendered to the cause or profession of science in the widest connotation of the phrase.

The recipient for 2012 is Professor Lionel Carter, Victoria University of Wellington.

The award of the 2012 Marsden Medal for Professor Carter recognises an outstanding 40 year research career as a practising geoscientist with significant contributions to marine geology, palaeoceanography, physical oceanography and applied marine geology. Quite simply our present knowledge of the undersea extent of the New Zealand continent and its interaction with water masses and currents that originate in the Antarctic and

tropical Pacific would not exist without Lionel's research career. His research has transformed our knowledge of the interaction between climate, topography and ocean circulation with important implications for understanding the processes that have formed New Zealand's undersea exclusive economic zone. Lionel has been a dedicated communicator of science and demonstrator of its practical applications. He has been involved in the production 17 charts including the international award-winning Undersea New Zealand, New Zealand Region Bathymetry and Ocean Circulation, New Zealand. He is a passionate public communicator disseminating scientific results via the media, talks to the public and policymakers on the oceans and the impacts of climate change as well as popular articles.



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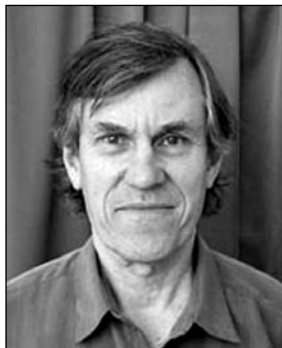
## Shorland Medal

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The Shorland Medal is awarded in recognition of major and continued contribution to basic or applied research that has added significantly to scientific understanding or resulted in significant benefits to society.

The recipient for 2012 is Professor Michael Hendy, University of Otago.

Professor Hendy is awarded the Shorland Medal for an outstanding body of research into mathematical phylogeny – the set of mathematical tools for reconstructing evolutionary relationships between species using DNA sequences. The application of combinatorics and graph theory to phylogenetics has proved to be an exceptionally fruitful area for Professor Hendy, yielding over 80 papers published in that field. Our understanding of evolution has developed at an unprecedented rate in recent years and much of this can be attributed to the pioneering work of Professor Hendy and his co-worker, Professor David Penny. In the 1980s Penny and Hendy put Darwin's theory of evolution to a particularly stringent mathematical test, finding not only that it stood up to their test, but that it was not a tautology as had been asserted by the philosopher, Karl Popper. In 2001, Professor Hendy teamed up with three other researchers at Massey University to develop an application for the government's new Centres of Research Excellence Fund. This led to the establishment of the Allan Wilson Centre for Molecular Ecology and Evolution, hosted by Massey with partners in Auckland, Wellington, Christchurch, and Dunedin. The Allan Wilson Centre advances knowledge of the evolution and ecology of New Zealand and Pacific plant and animal life, and of human history in the Pacific.



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## Research Medal

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The Research Medal of the New Zealand Association of Scientists is awarded for outstanding fundamental or applied research in the physical, natural or social sciences published by a scientist under the age of 40, during the year of the award or the preceding three calendar years.

The recipient for 2012 is Associate Professor Eric Le Ru, Victoria University of Wellington.

Professor Le Ru has made an enormous contribution to research in the multidisciplinary fields of surface-enhanced Raman spectroscopy (SERS) and nanoplasmonics. In particular, his work carried out over the last few years has had an exceptional international impact. It has resulted in the publication of a book and over 50 papers, several of them in the most prestigious journals in physics and chemistry. SERS uses nanoscale metallic objects to boost the sensitivity of Raman spectroscopy. Although discov-



ered 30 years ago, its potential applications are only coming of age now thanks to recent advances in nanotechnology. Once the difficulties in understanding and implementing it are overcome, this technique has the potential to revolutionise analytical chemistry. Associate Professor Le Ru has made seminal contributions to both the theoretical understanding of the physical mechanisms responsible for SERS and to the development of new experimental methods to study it. His work has been at the forefront of the international research effort towards applying SERS to single-molecule detection and identification, arguably the ultimate goal of analytical chemistry.

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## Science Communicator Award

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The Science Communicator Award is made to a practising scientist for excellence in communicating science to the general public in any area of science or technology.

The recipient for 2011 is Dr Siouxsie Wiles, University of Auckland.

Dr Wiles has demonstrated excellence in science communication to the general public. She impressed the judge by showing a commitment to communicate across a range of scientific issues of interest to the public, as well as communicating her specialist area. Dr Wiles has embraced traditional print and broadcast media outlets, as well as social media and other communication formats. She has looked to innovate, and has tried new approaches as a creator of content. She is articulate and interesting to her audience, and available and accommodating to the media she deals with. The Association hopes that in awarding this prize to Dr Wiles, it will encourage many other scientists to follow her lead and become proactive, engaging communicators with integrity and passion.

