

Name Prof Vaughan G Macefield

Birthdate January 26 1961

Position Foundation Chair in Integrative Physiology
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Academic background

1983-1986: Doctor of Philosophy (awarded 1987)
School of Physiology and Pharmacology, The University of New South Wales, Sydney

1979-1982: Bachelor of Science, Honours Class I (awarded 1983)
Double Major in Anatomy and Physiology, The University of New South Wales, Sydney

EXECUTIVE SUMMARY

I have been engaged in full-time biomedical research for 26 years, and am known nationally and internationally as the world expert in recording and analysing the firing properties of human postganglionic sympathetic neurones, and as a leading investigator in human sensorimotor control. I was awarded an NHMRC CJ Martin Fellowship in 1990 to spend two years in Sweden, received a *JB Pierce Visiting Fellowship* at Yale University in 1993, received an NHMRC RD Wright Fellowship in 1995 and, in 1996, was awarded the \$10,000 *Sunderland Award* for "Excellence in Sensorimotor Biology" to continue my collaborative work in Sweden. In 1999 I received an NHMRC Research Fellowship, and in 2001 an NHMRC Senior Research Fellowship.

In October 2006 I surrendered my Fellowship to take up the position of Foundation Chair in Integrative Physiology in the School of Medicine, University of Western Sydney. Prior to this, I had established two laboratories at the Prince of Wales Medical Research Institute in Sydney, where I was based for 12 years; I now hold a conjoint position there and retain one laboratory and a postdoctoral scientist.

I have undertaken detailed human neurophysiological studies that are unique in Australia, much of which involves recording from (or stimulating) individual nerve fibres via tungsten microelectrodes inserted percutaneously into the peripheral nerves of human subjects (microneurography). This is technically demanding, with a relatively low experimental yield, yet I have persisted in this approach because it complements work conducted in anaesthetized experimental animals, can be applied clinically, and can answer questions that cannot be addressed in reduced, anaesthetized preparations.

I have written 91 papers and reviews that have been published in the leading international journals in their fields (e.g. 16 papers in the *Journal of Physiology*). The majority of these papers (75%) have only one or two coauthors (42% and 33%, respectively). I have also authored or coauthored 11 commissioned book chapters.

My research group has grown from just myself in 1994 to eight people in 2009. Since 1992 I have maintained a strong, bilateral link with the Department of Clinical Neurophysiology at the University of Göteborg, Sweden, and with the Department of Physiology at the University of Umeå, Sweden. Since 1994 I have established successful collaborative links with 11 Australian research groups: five within the Faculty of Medicine at UNSW and its teaching hospitals, two groups at the University of Sydney, one at the University of Melbourne, one at the University of Adelaide and two at the University of Newcastle. I have given invited lectures in Auckland, Glasgow, Gothenburg, London, Miami, Montreal, Nagoya, Stockholm, Tokyo, Vancouver, Erlangen and Boulder. I have convened an international workshop on microneurography and served as Local Chair of the Australian Neuroscience Society (2006). I am Associate Editor for the journal *Clinical Autonomic Research*, Secretary for the *International Society for Microneurography* (which I established) and Chair of the Local Organising Committee for the *International Society for Autonomic Neuroscience*, the next meeting of which is to be held in Sydney in 2009.

An exciting recent development in my research has been the use of functional Magnetic Resonance Imaging (fMRI). With Luke Henderson at Sydney University, I have completed five studies on the cortical and subcortical processing of deep and superficial pain, and another two dealing with identification of the areas of the brain involved in cardiovascular control. This work received an NHMRC Project Grant in the 2004 round. I was also awarded an NHMRC Project grant in the 2005 round as sole investigator; this was rated in category 6. With Mikael Sander from Denmark and David Celermajer from Sydney University, I was awarded a National Heart Foundation grant (\$120,000) in the 2005 round, and with Elspeth McLachlan, James Brock and Matthew Kiernan was awarded a \$1,500,000 Spinal Program Grant from the NSW Ministry of Science and Medical Research. I am one of 11 chief investigators on the \$3,300,000 NHMRC/ARC Thinking Systems grant, awarded in 2006, to develop autonomous control system relevant to robotic manipulation. In 2006 and 2007 I served on an NHMRC grant review panel (4D) and in 2007 was appointed to the NHMRC Research Fellowships interviewing committee (Panel B), a panel on which I continue to serve.