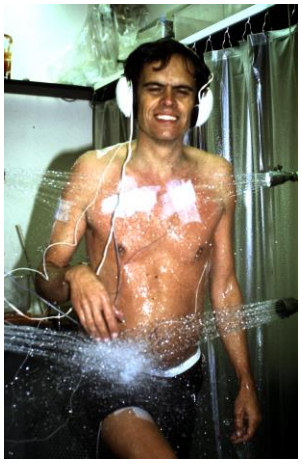
WITSIE AT THE CUTTING EDGE: Researcher Profile

Professor Duncan Mitchell

Emeritus Professor of Physiology



Who are you and what is your academic/scientific training and background?

I am Emeritus Professor of Physiology at Wits, Honorary Professorial Research Fellow in the Brain Function Research Group (having been its founding Director), and Adjunct Professor at the University of Western Australia. I studied physics at Wits under the legendary Frank Nabarro, but always have worked as a physiologist. I rejoined the University as a member of staff in 1975, after working in research for eight years at the Chamber of Mines of South Africa, and for three years at the National Institute for Medical Research, London, UK. I hold an NRF A1 rating. I was awarded the prestigious Harry Oppenheimer Fellowship in 2010, and an honorary DSc degree by Wits in 2012. I am proud to have been born in Germiston.

Explain the nature of the research that you are currently undertaking.

I began my research working in thermal physiology, and 40 years later remain in that field. The kind of thermal physiology has changed from human physiology of deep-level gold mining to the current thermal physiology of arid-zone mammals facing climate change, and to the pathophysiology of fever. I have also worked on the neurophysiology of thermal sensations (with Richard Hellon, in London), on thermoregulation in the foetus (with Helen Laburn) and on thermoregulation in desert ectotherms (with Mary Seely). To thermal physiology, I have added research on the pathophysiology of pain. That research also started with neurophysiology, of pain pathways, but more recently has concentrated on the pain experienced by people living with HIV/AIDS. I also helped set up the Wits/Dial.a.Bed Sleep Research Laboratory in the School of Physiology.

What do you think is the most pertinent/relevant/significant contribution you have made to research/science/your field?

I believe that the most-useful, and most-rewarding, contribution that any researcher can make is to help others to do good research. I was there at the beginning of the research careers of Andrea Fuller (current Director of the Brain Function Research Group), Peter Kamerman (South Africa's leading pain researcher), Helen Laburn (former Deputy Vice-Chancellor Research at Wits), Shane Maloney (Head of the School of Anatomy, Physiology and Human Biology at the University of Western Australia), Graham Sher (CEO of Canadian Blood Services), Clifford Woolf (Professor in Neurology and Neurobiology at Boston Children's Hospital) and many others.

Did you have a particular mentor or supervisor who inspired you in research?

I have had many, but probably the most influential was the late Cyril Wyndham, South Africa's most-distinguished physiologist, who was one of my PhD supervisors and my boss in the Chamber of Mines Research Organization. He taught me that the key to success in research was not skill but enthusiasm, and that good biomedical research is best done in a team, and especially a team whose members set the team's success above the glory of the individuals who make it up.

Tell us about what you do when you're not busy at work and carrying out cutting-edge research.

I love being in the bush (especially with my family at our conservancy in the Blyde River mountains), and being in deserts. I enjoy the whole nature experience, but birds are the highlight. I am an enthusiastic member of the audience (Seat PP1) at the concerts of the Johannesburg Philharmonic Orchestra, and an enthusiastic supporter of the Lions and the Springbok rugby teams.

Read one of Duncan's papers: Mitchell, D., Maloney, S. K., Jessen, C., Laburn, H. P., Kamerman, P. R., Mitchell, G., & Fuller, A. (2002). Adaptive heterothermy and selective brain cooling in arid-zone mammals. *Comparative Biochemistry and Physiology B* 131: 571-585.