

## AWARDS, HONOURS AND ACHIEVEMENTS

- Havenga Prize for Life Sciences from the Suid-Afrikaanse Akademie vir Wetenskap en Kuns ((2018)
- Zoological Society of Southern Africa's Gold Medal for contributions to zoology in South Africa (2003)
- British Association Medal of the South African Association for the Advancement of Science (Silver) (1984)

## DEFINING MOMENTS

Exposure to early developments in molecular biology and life in academia in the United States made an indelible impression on his early career by highlighting the hugely competitive environments associated with big laboratories and big science. Equally defining was his Wellcome Trust funding in 2003, which led to a three-year collaborative research project that gave him access to resources and skills at Cambridge University.

## WHAT PEOPLE MIGHT NOT KNOW

"Many of my PhD students have gone on to achieve acclaim. Among these are four full professors, three of whom are current departmental heads."

## DISTINGUISHED CAREER UNRAVELLING GENETIC MYSTERIES

When Terry Robinson chose genetics and zoology as his two majors as an undergraduate student, he recalls being conflicted in his choice of careers – would it be genetics, or zoology? "At that time, the two disciplines were to a large extent distinct (particularly so in South Africa) so he ended up completing a BSc Honours in zoology and then subsequently another one in genetics. "This meant I gained from having both a zoologist and a geneticist as supervisors of my doctoral research," he says.

That was a long time ago, and Robinson's distinguished career in academia has since taken him between South Africa and the United States several times, honing his expertise in the field of evolutionary genetics and aspects of chromosome biology that include molecular cytogenetics, systematics and phylogenomics.

He completed his undergraduate and postgraduate studies at the University of Pretoria (UP), but it was his year as a postdoctoral fellow at the University of Texas MD Anderson Cancer Center in Houston that was really a revelation. Benefiting from the expertise of Dr Tao-Chiuh Hsu, a world authority on cancer and comparative cytogenetics, he recalls this as the first of two defining periods of his career. "This was a time when molecular methods were being introduced into various aspects of evolutionary biology, including comparative cytogenetics," he says. Although he returned to South Africa in 1983, he was lucky enough to resume his international research career a year or two later, initially at the University of Texas Medical Branch in Galveston, and later at the Baylor College of Medicine's renowned Institute for Human Genetics, where he spent a further three years. "Exposure to these big laboratories and big science made an indelible impression on my early career," says Robinson, explaining that the experience emphasised the point that competitive science was increasingly becoming multidisciplinary and international in its execution.

## NOT PUBLISHED, NOT DONE

Of the many recollections he has of these formative years, one of the most enduring is that of a plaque in the office of one of his postdoctoral advisors that read: 'Work not published is work not done.' "That motivated so much of what drove us." Robinson has since published more than 170 full-length papers in peer-reviewed scientific journals and book chapters; he held an A2-rating from the National Research Foundation (NRF).

Only once he had addressed his wanderlust and returned home to South Africa did his career really take off. In 1989, he took up a post as professor in the Department of Zoology at his *alma mater* UP, where he started a molecular zoology laboratory. A decade later he relocated to Stellenbosch University (SU), where he served as head of the Zoology Department before becoming Executive Head of the Department of Botany and Zoology and then Vice-Dean of Research in the Faculty of Science. In 2015, he became Emeritus Professor.



“My time at Stellenbosch was really critical. I was a mid-career scientist when a successful Wellcome Trust funding application led to a collaborative research project with Professor Malcolm Ferguson-Smith of the Department of Clinical Veterinary Medicine at Cambridge University. “It was exhilarating to be exposed to technical developments at the forefront of comparative molecular cytogenetics, particularly flow cytometry, at a leading United Kingdom institution,” adding that this prompted the publication of what he regards as some of his best work.

Robinson’s research studied mammalian genome evolution using evolutionarily important African species, then using this information to reconstruct the history of mammals of differing evolutionary ages. “One focus of my work at that time was the Afrotheria, a mammalian clade thought to be of African origin that arose when the continent was isolated from others through plate tectonics.” While the afrotheres show little physical resemblance to one another, comprising as they do the elephant, hyrax, sea cows (dugong and manatees), armadillo, elephant shrews, golden moles and the tenrecs of Madagascar, they are, intriguingly, “strongly united by a phylogenetic history that is based principally on DNA sequences and other genomic data”.

“One such data set that developed as a result of my ties with the Ferguson-Smith laboratory at Cambridge involved combining and comparing chromosomes from different species using complex molecular genetics techniques. This permitted the identification of several rare genomic changes that unite the Afrotheria and support for some of the puzzling associations within the superorder,” Robinson says.

He has used similar approaches to investigate the evolutionary relationships of the Bovidae (antelope, cattle, sheep and goats) and Leporidae (hares and rabbits). He has also published on aspects of conservation genetics, phylogeography and sex determination in mammals.

His exceptional research achievements, which cemented Robinson’s international stature as a research scientist, also saw him serve on the editorial boards of several international journals and committees, including the International Union for Conservation of Nature Species Survival Specialist Groups on Lagomorpha and Afrotheria. At *Heredity*, the official journal of the Genetics Society, Robinson was not only a subject editor, but also

edited a special edition on Molecular Cytogenetics: Karyotype evolution, Phylogenomics and Future Prospects.

He also served as one of five NRF assessors for the evaluation of rated researchers in South Africa for seven years from 2007 to 2014.

Robinson is proud of his research achievements. He is equally gratified by the success of his postgraduate students. His exceptional record in student training and professional service has seen many of his PhD students go on to achieve much acclaim. This includes three who are current departmental heads, one a full professor, a senior lecturer, and another who is now a lecturer in Poitiers, France. Several of his postdoctoral fellows hold academic appointments abroad, including in London, Spain, France, the United States and Australia.

That’s a legacy he cherishes, says Robinson, especially considering the life-changing contributions that great teachers made to his own career.



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# Legends of South African Science II

**Academy of Science of South Africa (ASSAf)**

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