

Obituary: Professor Geoffrey Randolph Shellam

Professor Tony Cunningham AO^A, Professor John Mackenzie AO^B, Professor Sir Gustav Nossal AC CBE^C and Professor William Rawlinson AM^D

^AWestmead Millennium Institute for Medical Research, 176 Hawkesbury Road, Westmead, NSW, Australia. Email: tony.cunningham@sydney.edu.au

^B5E, 14–18 Kings Park Avenue, Crawley, WA, Australia. Email: J.Mackenzie@curtin.edu.au

^CDepartment of Pathology, The University of Melbourne, Vic., Australia. Email: gnossal@bigpond.net.au

^DSerology and Virology Division (SAViD), SEALS Microbiology, Barker Street, Randwick, NSW, Australia. Email: w.rawlinson@unsw.edu.au

It is a privilege for all of us to present a brief tribute for the life of Geoffrey Shellam, an admired colleague and friend, to some for over 50 years. Geoff's scientific intuition, his integrity and his scientific leadership were second to none.

The PhD years

Geoff was Gus Nossal's first PhD student at the Walter and Eliza Hall Institute in 1966, and in 1967 was joined by Richard Stanley who studied colony stimulating factors under the late Donald Metcalf. A fateful conjuncture, as Geoff introduced Richard to Pamela Featherstonehaugh, who became Richard's wife; and Richard introduced Geoff to his sister Fiona, whom Geoff in turn married. During his PhD, Geoff studied immunological tolerance. One particularly intriguing experiment involved injecting newborn rats repeatedly with minuscule doses of bacterial flagellin. This resulted in tolerance as measured by the formation of immobilising antibodies, but only if the injections were given daily (including Sundays) over several weeks. The group called this ultra low-zone tolerance. Geoff had been at the Walter and Eliza Hall Institute as a CSL cadet and on graduating went to a research post at CSL. However he left and travelled to London to work with Avrion Mitchison on tolerance, did very well and stayed for 5 years.

The UWA years

Geoff won the prestigious Eleanor Roosevelt International Cancer Fellowship to research at the National Cancer Institute in Maryland, USA before coming to The University of Western Australia as a Post-doctoral Fellow in 1977. Geoff's work in Perth was supported by the NHMRC, and in an increasingly competitive environment, he was successful in gaining peer-reviewed NHMRC research support for the rest of his life. In 1985, he succeeded Neville Stanley in the Chair, which he held with great distinction for 30 years. Geoff was a great addition to UWA Microbiology, with enormous calibre, expertise and deep interest in NK cells. He initially continued his work on cell-mediated cytotoxicity in the rat lymphoma model, and established a bright, keen research group with excellent postgraduate students. However, he quickly recognised the potential of the murine CMV

system initiated by Jane Grundy in her PhD studies and realised it provided an ideal model in which to further investigate the role of NK cells and host genetic resistance/susceptibility.

Geoff's research group was able to utilise similar techniques and concepts to study flaviviruses, successfully investigating the *Flv* gene associated with flavivirus resistance in the mouse, and eventually mapping the *Flv* gene to a single chromosome 5 locus. He also employed murine CMV as a vector for developing an immune-contraceptive vaccine to control wild mouse plagues, and using his experience with host genetic resistance mechanisms, was able to overcome the host innate resistance that occurred. Geoff's imagination and sense of adventure led him to use some of this knowledge to tackle mouse plagues in the wheat fields with a recombinant murine CMV that induced autoimmune destruction of ovarian follicles. Geoff had a strong interest in fieldwork associated with some of the more inhospitable parts of the world. In the Kerguelan and Macquarie Islands, he collected cloacal swabs and blood from penguins for virus isolation, and wild mouse populations for his MCMV studies into genetic resistance patterns. This final passion researching a devastating viral disease (infectious bursal disease) in penguin chicks necessitated several visits to Macquarie Island, an adventure typical of him.

Geoff with these colleagues and protégés including Jane Allan, Greg Bancroft, Mariapia del Esposito, Helen Farrell, Jane Grundy, Patricia Price, Alec Redwood, Tony Scalzo, and Lee Smith used mouse genetics to unravel key aspects of innate immunity to murine CMV as a model for the human viral disease, and with John Mackenzie, Mark Sangster and Nadia Urosevic in their work on flaviviruses. One of their greatest triumphs was defining the role of NK cells in protection against murine CMV infection and then with Tony Scalzo, mapping a key gene (*Cmv1*) that encoded this resistance. They showed this had a dominant effect and was mapped to the distal region of mouse chromosome 6. The effect of *Cmv1* was subsequently shown to be mediated via NK cell control of viral infection and the locus was mapped to the NK cell gene complex (NKC), a region which encodes both inhibitory and activation NK cell

receptors. In later years the work with Tim Booth, Megan Lloyd, Alec Redwood and Lee Smith examined how murine CMV developed strain variation including in wild type strains, and how these strains influenced immune evasive genes provided key models for other herpesviruses.

A lifelong legacy

Geoff was an original and dedicated teacher at both undergraduate and postgraduate levels. His teaching involved all aspects of infectious diseases, including virology, microbiology, immunology, molecular biology and public health. A Master of Science course that he introduced became unexpectedly popular and successful. Geoff's gifts as an administrator involved not only his superb department, but also being Co-Director of the Marshall Centre for Infectious Diseases Research and Training. He was a model corporate citizen joining a wealth of national and international scientific committees, peer group reviewing bodies and editorial boards. He was always willing to serve, as head of department for three decades, as elected President of the Australasian Society for Immunology of which he was made an honorary life member in 2012, as founding co-director of the Marshall Centre at UWA and on the scientific advisory committee of the Australian Centre for HIV and Hepatitis Virology Research.

The first impression of Geoff remains for many of us, a man with a formidable intellect, a gentleman, an irreverent sense of humour and a great sense of fun and adventure. A mentor. Geoff's work was an inspiration. He was able to deliver precision to a very descriptive field complicated by the large size and number of genes in 'his' herpesvirus, murine cytomegalovirus, as well as the complexity of the immune response, which was relatively poorly defined at the time.

The seminal studies from Geoff's research group have provided the basis for dissecting and delineating so many areas of virus-host interaction, including the contribution of host resistance genes to infection outcome. Along with his excellent group, Geoff's work dissected the various interplays between innate and adaptive host immune responses, the contribution of virus immune evasion genes, and genetic variation in these genes, to the establishment of viral persistence.

Vale, Geoffrey Shellam and rest in peace. We will miss your great good humour and favourite salutation 'old boy'. It has been a pleasure and an honour for many of us to know you. Those of us fortunate to have known you, and those who continue to benefit from your highly intelligent research insights, thank you for the good you have done for Australia and the world.

Conference report: 19th ISHAM Congress, Melbourne

Prof. Wieland Meyer

Chair 19th ISHAM Congress and General Secretary ISHAM

The 19th Congress of the International Society for Human and Animal Mycology (ISHAM), in-conjunction with the 2015 Mycology Masterclass, was proudly organised by the Australian New Zealand Mycology Interest Group (ANZMIG), a special interest group of the Australasian Society of Infectious Diseases (ASID). It took place from the 4–8 May 2015 at the Melbourne Convention and Exhibition Center.

The Congress was organised under the leadership of Prof. Wieland Meyer, who chaired the local organising committee, including Dr Sarah Kidd, A/Prof. Sharon Chen, Prof. Monica Slavin, Sue Coloe, A/Prof. Debbie Marriott, Dr Orla Morrissey, Dr Tom Gottlieb, Prof. Tania Sorrell, A/Prof. Mark Krockenberger, Prof. David Looke and E/Prof. David Ellis. The accompanying Young ISHAM meeting was organised by Dr Michaela Lackner, Cecilia Li, Nenad Macesic. Special thanks go to the staff of The Meeting People our PCO under the leadership of Lesley Woods.

The 19th ISHAM Congress was generously sponsored by Astellas, Merck Sharpe & Dhome, Pfizer, Gilead, Elsevier, Marie Bashir Institute, Oxford University Press, Melbourne Convention & Visitors Bureau, Majestic Opals, Cape Cod Associates, and Mayne Pharma.

The meeting attracted 667 delegates from 48 countries, with 33.7% coming from Australia and 66.3% from overseas. It was preceded by two days of workshops, on 2–3 May 2015, and followed by a one-day workshop on 9 May 2015, taking place at RMIT and the Alfred Hospital, on topics from MALDI-TOF, Histopathology, Therapeutic Drug Monitoring, Antifungal Susceptibility Testing, Infections in the Immunocompromised Host to BioloMICS. The Young ISHAM day on 3 May 2015 featured three educational sessions, covering topics from 'Where to publish' and 'How to review a scientific paper' to 'Mycological entrepreneurship'. It also gave 24 young researchers the opportunity to present their scientific findings as short talks and 88 as YISHAM posters.