

Vale Emeritus Professor Byron A Kakulas AO, 1932 – 2023

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Submitted: 17 May 2023

Accepted: 17 May 2023

Published: 22 June 2023

Keywords: Obituary, Neuropathology Australia, Inclusion body myositis, Muscular dystrophy



Vale Emeritus Professor Byron A Kakulas AO, 1932 - 2023.

It is with great sadness that we reflect on the recent passing of our friend and colleague, Emeritus Professor Byron Kakulas AO.

Byron Kakulas was born on March 29, 1932 in Perth, Western Australia. Like many West Australians seeking to join the medical profession at that time, he completed his Bachelor of Medicine, Bachelor of Science at the University of Adelaide in 1956. He commenced his medical career as a Resident Medical officer at Royal Perth Hospital in 1957

and went on to complete his specialist clinical neurology training in 1963.

Byron married Valerie Patsoyannis in 1961 before they moved to Boston. They have three children: Arthur Phillip, Felice Anne and Carolyn Rose. Professor Kakulas' move to Boston was to continue his training in neurology/neuropathology at the Massachusetts General Hospital, Harvard Medical School (1963-1965). He worked closely with Professors Raymond D Adams and E Pearson Richardson. They remained friends and colleagues for a lifetime and visited Perth on several occasions.

Living in Perth, Byron had the opportunity of visiting the lovely island of Rottnest, famous for its small marsupial, the Rottnest Island Quokka. He observed that many of these cute little animals developed a paralytic disease when placed in captivity. He decided to make this the subject of his doctoral thesis and found that the disorder was due to breakdown of muscle resulting from vitamin E deficiency. By treating this deficiency in the Quokkas, he showed for the first time that skeletal muscle had the ability to regenerate. This was a momentous breakthrough since it demonstrated the potential

for some muscle diseases including muscular dystrophy to be curable. Byron communicated his studies very effectively to the wider community, and became well known on television with the annual fundraising activities of Telethon. This original work eventually led to a treatment for sufferers of Duchenne muscular dystrophy, which received accelerated approval by the [FDA](#) in 2016.

His research contributions were very extensive covering a variety of fields especially childhood and adult muscle disease. He showed that paralysis in muscular dystrophy was the result of continuous cycles of necrosis and regeneration. He was the first to identify [Inclusion Body Myositis](#) as an entity. In the early 1990s, he introduced molecular genetics and DNA technology in the investigation of muscle diseases.

Other highlights were the development of *in vitro* models for polymyositis (in collaboration with Roger L Dawkins) and the pathology of kuru and experimentally transmitted prion infections (in collaboration with Carleton D Gajdusek and Michael P Alpers). The neuropathology of spinal cord injuries was a major lifelong interest, for which his pioneer work gained much international acclaim, setting the scientific basis for better treatments.

In 1967, he founded the Muscular Dystrophy Association of WA and, soon after, the Australian Neuromuscular Research Institute (ANRI) becoming the Medical Director of both. He held these posts until 2010. In 2017, the ANRI became the Perron Institute for Neurological and Translational Science.

Professor Kakulas was appointed as Head of the Department of Neuropathology at the Royal Perth Hospital in 1967. He was made the Foundation Professor of Neuropathology at the University of Western Australia in 1971 and was Dean of the Faculty of Medicine from 1976-1978.

Clive Harper (Emeritus Professor of Neuropathology, University of Sydney) recalls that he met Byron at the International Society of Neuropathology in Budapest in 1974. Byron asked Clive what he planned to do after working in Switzerland in neuropathology. Byron said, "I can offer you the position of Assistant Neuropathologist in Perth". Clive flew into Perth from Switzerland in 1975. He started work

at the Royal Perth Hospital immediately. Byron had set up the biggest and best Neuropathology Department in Australia. It was big, even by international standards. Clive recalls: "There were excellent facilities and large numbers of secretarial and technical staff. There were two neuropathology registrars and several overseas trainees. The registrars, Peter Blumbergs and Tony Tannenberg and myself worked closely together for several years until they took up senior neuropathology positions in Adelaide and Brisbane, respectively". All three have remained good friends to this day. Colin L Masters started with Byron's research team in 1967 when, as a medical student, he helped with the analysis of the brains of prion-inoculated non-human primates sent to Perth by Carleton Gajdusek. He continued postgraduate studies in neuro-virology in Byron's department. Colin later took up the position of Professor of Pathology at the University of Melbourne in 1989. Clive worked with Byron until 1985 when he was invited to take up the Foundation Chair in Neuropathology at the University of Sydney and Royal Prince Alfred Hospital. Hence, Byron was responsible for the training of most of the senior Neuropathology staff in Queensland, NSW, Victoria and South Australia.

The Royal Perth Hospital Department of Neuropathology was responsible for most of the forensic and hospital neuropathology studies and, each week there were reviews of cases in the laboratory. These were attended by many of the hospital clinicians and were considered by trainees and senior staff as great learning experiences.

Professor Kakulas held many important positions in a range of scientific, medical and other societies. These included membership of the Science Committee for the International Spinal Research Trust (1983). He was a Fellow of the Royal Australasian College of Physicians, the Royal College Pathologists Australia and the Royal College of Pathologists (United Kingdom). He was a founding member of the Australian and New Zealand Society for Neuropathology and President from 1985 to 1988.

Professor Kakulas played an important role in many national and international Neuroscience societies and conferences. He was on the Executive Committee of the World Federation of Neurology

and was Vice President for the International Congress in Muscle Disease in 1971, 1974 and 1978. Byron was Vice President for the Fifth International Congress on Neuromuscular Diseases in 1982. He was on the Board of Management at Sir Charles Gairdner Hospital from 1977-1980. Byron was President of the Australian Brain Foundation from 1981-1985.

Professor Kakulas received many honours and awards including [Officer of the Order of Australia](#), an Honorary Doctorate of the [University of Athens](#), the [Gaetano Conte Prize](#) of the [Naples Conte Academy](#)

and a [Lifetime Achievement Award by the World Federation of Neurology](#). He was also a [Paul Harris Fellow](#) in Rotary.

Written by

Prof Clive Harper & Prof Colin L Masters on behalf of ANZSNP.

