

## John Leo Black BSc[Hons] MSc DPhil DSc FACPSEM 1939–2011

**Nuclear Physicist & Foundation Head of Medical Physics in Sir Charles Gairdner Hospital (SCGH), Perth, Australia**

Roger Price

© Australasian College of Physical Scientists and Engineers in Medicine 2011



When John Black created the (then) Biophysics Department in SCGH in 1972, the CT scanner had only just been invented, providing  $80 \times 80$  pixillated cranial images following 11 min of painstaking scanning (head enveloped in a waterbag) plus algebraic reconstruction. Scientific computing in hospitals was virtually unknown and most sophisticated equipment for innovative measurement of human physiology had to be designed and constructed in-house. Nuclear medicine had only recently been recognised as an independent discipline. Physics and its high priests still carried the mystique of stunning contributions to the war effort, the space race and so on, in the ‘century of physics’. For some classically-trained physicists the modern technologically advanced teaching hospital (owing much to developments in the UK following WWII) was a

laboratory as exciting as any found on a university campus. To misquote Galileo, opportunities if not infinite were certainly very large.

John had prepared for the task. Graduating with first class honours from Melbourne University in 1960 as its top physics student he proceeded to MSc studies in low-energy nuclear physics, leading to further postgraduate studies at Oxford University and a DPhil in 1965, supported by a Royal Commission for the Exhibition of 1851 Overseas Scholarship. The next year a Fulbright Scholarship carried him to a postdoc at Stanford. There he carried out research on coulomb excitations and giant dipole resonances, using their 15 MeV tandem accelerator. This was followed by further research in nuclear physics at the ANU. In 1971 he responded to a vacancy in the fledgling Nuclear Medicine Department of SCGH. This was a defining career move.

John had arrived in a city splendidly isolated by its geography; part of the impossibly long road across the Nullarbor was not to be bitumized until 1976. However, Perth was a veritable powerhouse for physicists. Medical Physics had been established at the venerable Royal Perth Hospital in 1959, mainly to support radiation therapy. However the scope and magnitude of its activities had since expanded steadily. Physics at the University of Western Australia had earned an enviable international reputation—seminal discoveries in critical phenomena, surface physics, geochronology and X-ray crystallography, to name a few, had promoted it to the big league. John brought a purposive ‘larger-than-life’ energy to his new mission. He decided to build a department complementary to that of RPH. In addition to the traditional services to clinicians, he would introduce innovative technologies for vision electrophysiology (EOG, ERG), vector cardiography (cardiac pacemaking) and neurophysiology. He would also become one of the Australian pioneers of scientific

---

R. Price (✉)  
Medical Technology & Physics, Sir Charles Gairdner Hospital,  
Perth, Australia  
e-mail: martin.caon@flinders.edu.au

computing in the hospital setting. Baby-boomer physicists fondly recall the impact of DEC minicomputers in their laboratories, and indeed these proved to be ideal for the fledgling digital control and computational applications being developed in major medical physics laboratories. Consequently, several of ‘Charlies’ clinical departments were able to explore the possibilities of the iconic DEC 11/23 bar-fridge sized minicomputer; substantially assembled in-house by Biophysics, with its dinner-plate floppy disc storage and powerful operating system. For both of Perth’s medical physics departments the 70s were a blur-expanding workforces, new clinical services complemented by research programs and students. Each also fostered equally innovative and expanding bioengineering divisions. John was awarded a Churchill Fellowship in 1975. The early 80s saw the commissioning of a major new space for his department in the new SCGH ‘G’ tower block, that forms the core of ‘Charlies’ to this day. An active research program saw publications in neurology (including childhood learning disabilities), cardiology and vision science. An exemplar of his vision was a formidable bunker set aside for a cyclotron in the new department; a goal achieved finally in 2003. John Black was awarded a DSc from the University of WA in 1986. A founder member of the ACPSEM, he was its President from 1983–1985.

John retired in 1994. He and his wife Margaret embarked on a number of retirement projects, often involving travel. After living for several years in the south west of Western Australia they finally settled in Queensland. John passed away

in May and is succeeded by his wife and two children. His contribution to the profession that informed his life’s work secured the role and recognition of medical physics and bio-engineering in Sir Charles Gairdner Hospital, and through the College contributed to advancing medical physics at a national level; earning the gratitude of those who succeeded him.

John Black programming a DEC 11/40 mainframe, 1980.

