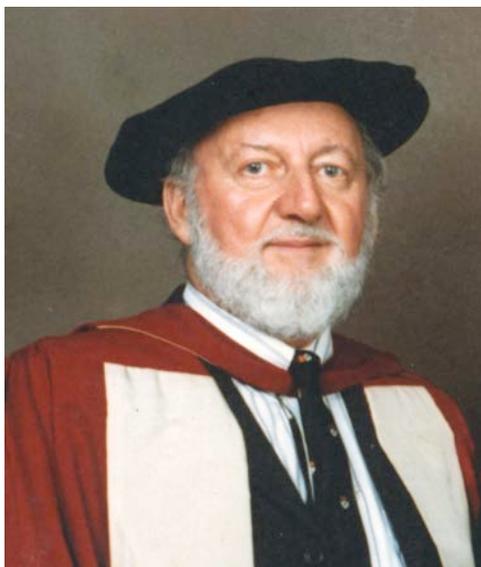


## Obituary

### **Professor Jak (John Charles) Kelly FRSN** (14 February 1928 – 11 February 2012)

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Jak was born John Charles Kelly in 1928, in Borenor, about 30 km west of Orange in New South Wales. The son of a contract wheat harvester, he obtained a scholarship to the De La Salle Bros. school in Armidale and progressed to the University of Sydney, where he fell in love with physics and caving. Jak was founding President of Sydney University Speleological Society in 1948 and became a local caving icon. Opening the 50<sup>th</sup> SUSS meeting in 1998, he recalled running out of oxygen: “People were unable to strike matches for their cigarettes. It took 45 minutes to get down and 5 minutes to get out!”

Graduating in 1950, Jak worked at the National Standards Laboratory in Sydney, publishing his first paper in *Nature* in 1950 on his invention of vibration measurement

using multiple beam interferometry. In 1953, he married Irene Traub, who remained at his side for the next 59 years and is known to many in the Society.

In 1955 Jak moved to the University of Reading to complete a thin film PhD project under O.S. Heavens. In order to create better quality thin films, he invented Electron Bombardment Deposition using a pendant droplet of melted metal heated by an electron beam. It became a standard method of high temperature metal evaporation. Graduating in 1958, he worked at Harwell on radiation damage in crystals, grown using his single drop method.

Jak returned to Australia in 1961 to the UNSW School of Physics, where he remained for the rest of his salaried career, writing more than 150 papers. He specialised in ion beam deposition, patenting several improvements, and co-authored three books. He served as Chair of the Australian Institute of Physics in 1965-66, became a Fellow of the Australian and UK Institutes of Physics, and in 1975 was created a Doctor of Science for his body of work. His curiosity was broad and his subsequent cooperation with other groups included thermoluminescent dating, using ion implantation to improve the attachment of bone cells to prosthetic surfaces, the modelling and deposition of thin film solar energy absorbers, irradiation of wool using ion beams to improve wool properties, studying low energy nuclear

reactions, and proposing laser fusion improvements.

At UNSW Jak served as Head of School and Science Faculty Chairman (1985-89), and Chairman of the Australian Academy of Science Section A and other committees. He retired in 1989, remaining a visiting professor, and became Editor of Australian Physics (1992-98), Honorary Professor of Physics at Sydney University in 2004, and subsequently President of the NSW Royal Society (2005 and 2006). He was appointed an Inaugural Fellow of the Society in 2009.

Jak was an outstanding ambassador for Physics. His flamboyance, fluency, and sense of humour found a ready audience in younger students and drew many into

Physics as a career. Many still remember him playing the scientific sage in 1980 in a Robin Williams ABC Science Show spoof about the discovery of a 60,000 year old fossilised beer can. He also supervised many PhD students who became friends and remained so.

Jak died with his family around him, 3 days before his 84<sup>th</sup> birthday. He is survived by Irene, who for years assisted the Sydney RSNSW office; their daughter and former science broadcaster Karina Kelly, who preceded Jak as President of the Society; and sons Michael and Julian.

David Mills  
John Hardie  
Heinrich Hora

