

Christopher Joseph Fell AO FRSN HonFIEAust 21 July 1940–8 December 2022¹

Robert Marks, Editor

Chris Fell was born and grew up in Stockton, Newcastle, NSW. After Newcastle Boys High, he started chemical engineering at Newcastle University College, the first of his family to go to university. Then he moved to UNSW to complete his degree, living in the UNSW High Street Hostel (which he later described as “interestingly primitive”).

In the winter of 1958, running out of hot water, and receiving no joy from the University authorities, Chris and other students from the Hostel took to the streets in their pyjamas, and marched over to the Anzac Parade Hostel, which did have hot water. There (according to the *Sun Herald* of 10 August 1958) they were met by a group of students who turned four fire hoses on them. There was a 15-minute battle. But afterwards the UNSW authorities responded: the hot water was restored within a day, and Chris and his mates had warm showers thenceforth. So, as David Gonski recalled, Chris was one of the first successful student demonstrators at UNSW.

He moved into Baxter College and was awarded the University Medal in 1962, with a degree in chemical engineering. He then won a Shell Scholarship — the first UNSW graduate to do so — to undertake a PhD at Cambridge, which he completed in 1965 (“Diffusion in Binary Liquid Mixtures”).

After working for ICI in Britain and then in Melbourne, he joined UNSW as a Lecturer in Chemical Engineering in 1968, then as Senior Lecturer in 1971, and as Associate Professor in 1976. During that period he visited the University of Illinois and the University of California, Berkeley.

He was promoted to Professor in 1980, and was Head of School from 1985 to 1988. In 1989 he became Dean of the Faculty of Engineering, and in 1990 he was elected Chairman of the Australian Council of Engineering Deans. In 1991 he became Pro-Vice Chancellor (Research and International) and a year later Deputy Vice Chancellor (Research and International) until his retirement in 2001.

As recalled by Mary O’Kane, in 1990 the University of Canberra, a new university, wanted its new engineering courses to be three-year degrees, unlike the four-year degrees at all other Australian universities. Would competitive pressures result in others joining suit? Mary, as the first Dean of Engineering at Canberra, joined the Council of Engineering Deans, where Chris, as Chair, started lobbying. He succeeded and “to this day, engineers across Australia can be grateful to Chris for their four-year degrees.” On his watch the UNSW Faculty of Engineering became recognized as one of the top 30 engineering faculties in the world.

¹ UNSW celebrated Chris Fell on 21 March 2023. Contributors were: his son Gordon Fell; Attila Brungs FRSN, the Vice Chancellor of UNSW; Mary O’Kane AC FRSN, Head of the NSW Independent Planning Commission; Stephen Foster, Dean of UNSW Engineering; Chennupati Jagadish AC, President of the Australian Academy of Science; and David Gonski AC, Chancellor of UNSW. This obituary draws on their contributions. Jessica Milner Davis FRSN found the photo.



Chris Fell (centre) pictured with NSW Premier, Neville Wran, 1983. Courtesy UNSW Archives.

In 1977, UNSW researchers, led by Chris, had developed and patented a membrane to treat waste water. This membrane removed harmful molecules and pathogens and worked at low pressure, making water treatment much more affordable. It became the industry standard and is now used in approximately 50,000 water treatment plants around the world. In 1988 he became the inaugural Director of the Commonwealth Special Research Centre for Membrane and Separation Technology. In 1991 he became the inaugural Chairman of the Cooperative Research Centre for Waste Management and Pollution Control.

He was National Chairman of the Institution of Chemical Engineers in Australia in 1987–88, and was later made an honorary Fellow of the Institution of Engineers, Australia. In 1992 he was elected a Fellow of the Australian Academy of Technological

Sciences and Engineering, and awarded the Chemeca Medal, by the Australian and New Zealand Federation of Chemical Engineers (ANZFChE), the most prestigious award in the chemical engineering profession in Australia and New Zealand.

Soon after his retirement from UNSW Professor Fell suffered a serious stroke, which greatly impaired his mobility. Nonetheless, he was President of the Federation of Australian Scientific and Technical Societies (FASTS)² and Chairman of the Implementation Group of the Science Industry Action Agenda. In March 2015 he was appointed an FRSN.

He became an internationally recognized expert of nanotechnology, and facilitated the development of the Australia National Fabrication Facility. This was no small task since the nano community was massively interdisciplinary, involving physicists, chemists, biologists, engineers of all sub-disciplines, as well as material scientists and mathematicians. He was founding director of the ANFF from 2007, becoming chairman in 2011. In November 2022 he was re-elected unanimously as chairman by the 21 member universities and CSIRO. He was also a commissioner of the NSW Independent Planning Commission, which is responsible for evaluating projects of state significance. He was actually on his way to chair a public meeting in relation to a proposed goldmine in north-western NSW when he died.

He was made a Member of the Order of Australia (AM) in 2003 for service to engineering, particularly through the Membrane and Separation Technology Research Centre and FASTS, and in 2021 Chris became an Officer of the Order of

² Now called Science and Technology Australia.

Australia (AO) for distinguished service to science and engineering, with a focus on nanotechnology research and fabrication.

What of Chris the man? He was a husband (twice), father, grandfather, colleague, mentor, and teacher. As Gordon Fell recalled, Chris was a loving husband, father and grandfather. As a young man, he was scoutmaster of the First Kogarah Bay Sea Scouts, and, as Gordon remembered, two of Chris's favourite pastimes were sailing and fishing. He was a member of the Royal Sydney Yacht Squadron for his whole life in Sydney. According to his son, Chris had a strong impact on many people with whom he came into contact: "He hadn't read the manual on how to win friends and influence people; he simply treated people decently and they responded in kind."

Students, as Attila Brungs (who was a boy when he first met Chris) remembered, benefitted from Chris's intellect and guidance.

"Not only was Chris a brilliant scientist, but he was deeply interested in the way that science could improve both technology and the way that the world worked." Chris supervised more than 50 research students, many of whom have gone on to successful careers of their own in academia and in industry and have had profound impacts on our world.

The speakers and the attendance at his memorial event in March attest to his influence on people in his life. For myself, I remember his guidance after a promotion of mine had gone awry thirty years ago: his advice and encouragement meant I was successful a year later. Most recently, a few weeks before his death, he and I had a long casual conversation about my career: I soon found what others have spoken of — his close attention to his interlocutor, and his insights into life's decisions. His death is a great loss.

