

## Richard Alexander Pauptit 1954–2024

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It is with heavy hearts that we write this memorial for Dr Richard Alexander Pauptit, who died on 30 June 2024. Richard was well known and highly respected in protein crystallography circles and contributed hugely to the field. His enthusiasm, passion, and creativity for this area of structural biology was infectious, and those who were fortunate to work, study and collaborate with him will feel a profound loss on his passing.

Richard was born in Amstelveen, in the province of North Holland, Netherlands in 1954. Due to his father's work, he spent his formative years travelling the globe including time in the Middle East, Europe, Australia and Africa, and the love of travel continued throughout Richard's adult life.

Richard completed his schooling at the American Community School in Beirut, Lebanon, before enrolling at the University of Cape Town, South Africa (1973–75) where he received a BSc and excelled in Chemistry and Computing. It was during his time as an undergraduate that Richard's interest in X-ray crystallography was sparked. Richard began working in the field of small molecule crystallography in the laboratory of Professor Luigi Nassimbeni at the University of Cape Town, helping to solve four small molecule structures.

Richard's academic journey continued at the University of British Columbia, Vancouver, Canada, where he undertook an MSc (1976–78) and PhD (1978–1982) in the laboratory of

Professor James Trotter. Here, he honed his understanding of crystallography in the field of chemical crystallography, working on organic compounds.

Richard continued to build on his knowledge during a postdoctoral and lectureship position (1982–83) at the University of Auckland, New Zealand, which resulted in the publication of several small molecule structures.

In 1983, moving across the globe again, Richard took up a research position in the Biocenter at the University of Basel, Switzerland with Professor Johan Jansonius. At this stage Richard extended his research activities to the study of macromolecules. Using his broad crystallography background and programming skills, Richard wrote and improved a wide range of computational programs in the area of molecular replacement and protein structure refinement. At the Biocenter, he led and collaborated on many challenging projects including proteases, transaminases and other enzymes as well as the nascent field of membrane protein crystallography on a number of different porins.

In 1991, Richard moved to Heidelberg, Germany, to become a Fellow with the European Molecular Biology Laboratory (EMBL), working with many current leaders in structural biology. At EMBL his scientific collaborations focused on Src homology 3 domains and other related proteins.

Following this research position, in 1992, Richard took up a Team Leader position with AstraZeneca pharmaceuticals (formerly known as ICI Pharmaceuticals), in Macclesfield, United Kingdom. He established protein crystallography facilities and integrated this technique into an ongoing programme of drug design. Together with other scientists, under Richard's leadership, target-compound complex structures were determined which led to development of many drug therapies for disease.

As a Senior Principal Scientist and Associate Director in Discovery Sciences, Richard continued to inspire and innovate, ensuring that scientists could collaborate, within and outside of the company, encouraging rich partnerships with universities and research institutes. He played an important role in various outreach initiatives, including a postdoctoral programme whose aim is to promote a supportive and collaborative research culture for scientists to thrive. Richard brought the crystallography group in AstraZeneca to both national and international arenas. He participated in and led many collaborative and strategic activities including: leadership of the Biological Structures Group of the British Crystallographic Association; he was an active member of the CCP4 committee; a member of Scientific Advisory Board for BIOXHIT (an EU Framework 6 high-throughput crystallography project); was a Member of the Scientific Advisory Committee for the Membrane Protein Structure Initiative (MPSi), a BBSRC SPoRT initiative; and was a peer reviewer for *JMB*, *Structure* and many other journals, including *IUCr Journals* where he also acted as a Co-editor on *Acta Crystallographica F*.

Richard instigated communities of practice and founded opportunities to share expertise and research news, including

the international Protein Structure Determination in Industry (PSDI) meetings and the CCP4 Glasgow Protein Structure Workshop, a Northern UK regional protein crystallography event involving around 10 academic laboratories and AstraZeneca.

Richard was a leading voice in the world of protein crystallography with a long list of invited lectures at meetings and conferences. With his expertise in drug discovery, he held honorary positions in academia in addition to supervising researchers and being a PhD external examiner. He had an amazing portfolio of collaborations and authored many publications, but the wealth of influence he had on so many projects is priceless.

To have encountered Richard, to have worked with him and interacted in some way along his globe-trotting scientific journey is an unforgettable experience. Many people will have listened to, and have been inspired by, his talks at various conferences and lectures at universities. Colleagues will have sat with him on various committees and organized meetings and conferences with him, and will be marked by these encounters. As his former students, we were fortunate to benefit from his unorthodox yet effective teaching methods. His approach was always centered around the individual, offering a unique perspective on research and teaching: the strong, black coffee he served kept us going through the long periods of data collection; the crystallography tutorials delivered in the safe learning environment of the local pub will be forever etched in our memories; and the nail-biting journeys of course, in a battered, left-hand drive Volvo were character building.

Richard may have introduced us to crystallography, but his influence remains with us over the course of our varied careers. He taught us with humility, he was the most supportive, warm, funny and unusual mentor. He formed a community who were bonded by a scientific goal but also united a team through kindness, generosity and karaoke.

Richard retired from AstraZeneca in 2014 and spent time developing many of his other skills and talents. A big fan of motorbikes and skiing, he once stated that he enjoyed the feeling of the wind fast flowing through his long hair. He had a passion for music, played the guitar and was always keen on introducing people to lesser-known Canadian guitar bands. In latter years, Richard explored his creative side, demonstrating a talent in painting and exhibiting his art several times. He was an active member of a crossword setting community, sharing his method of setting, and solving puzzles on a regular basis. Many readers of *The Independent* will have in fact struggled with cryptic crosswords set by 'Dutch', Richard's alias as a puzzle setter.

Richard is survived by a loving family who have been a constant source of strength and inspiration for him. His children made him proud and will carry his generosity of spirit with them. Richard will be remembered not only for his scientific achievements and creative endeavors but also for his kindness, generosity, and the indelible mark he left on the lives of those who had the privilege to know him. A unique man, who will be sorely missed.