

Chris Abell 1957–2020

Chris Abell, FRS, FMedSci died suddenly on 26 October 2020. He was Professor of Biological Chemistry and Pro-Vice Chancellor (PVC) for Research at the University of Cambridge.

Chris was the son of a farmer in Yorkshire. He studied at Selby Grammar School and gained a place to read Natural Sciences at St John's College, Cambridge, starting in October 1976. I (FJL) met him within days of his arrival as I was his first supervisor (tutor) in chemistry (and he was my first ever supervisee). Chris graduated in chemistry in 1979 and then stayed at Cambridge for his PhD with Jim Staunton, studying the biosynthesis of polyketide natural products. He pioneered the use of dual-isotope labelling using both deuterium and ^{13}C . From the start he displayed the energy and enthusiasm for science that would characterize his whole career. During his PhD, Chris met his wife, Katherine, who was doing her PhD in the same lab with Tony Kirby. He went on to do post-doctoral research with Professor David Cane at Brown University, Providence, Rhode Island, studying biosynthesis of terpenes, including the antibiotic pentalenolactone.

In 1984, Chris returned to Cambridge to take up a lectureship and brought the newly developed techniques of gene-cloning into the Chemistry Department. In his own independent research, he studied various enzyme mechanisms, including enzymes of shikimic acid and coenzyme A biosynthesis. He also assisted Professor Alan Battersby in his research, which led to these genetic techniques being applied to the biosynthesis of tetrapyrroles. Without this, Alan's subsequent discoveries in the biosynthesis of porphyrins and vitamin B₁₂ would not have been possible.



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Gradually, however, Chris's interest shifted from the study of enzyme mechanisms to the development of enzyme inhibitors, initially to aid the mechanistic studies but then for the purpose of drug discovery. He collaborated with Professor Sir Tom Blundell in biochemistry and together they promoted fragment-based drug-discovery. This proved to be much more efficient than the high-throughput screening of drug-like molecules, which most pharmaceutical companies were pursuing at that time. On the back of these results, Chris, Tom and Harren Jhoti founded Astex Pharmaceuticals in 1999, which continues to be very successful, with three drugs already on the market. This technique has transformed pharmaceutical research worldwide.

Another major area of research was on microdroplets. These picolitre aqueous droplets can be produced in their millions, allowing massively high-throughput testing of different conditions for enzyme assays or growth of micro-organisms. Two companies were spun out from this research: Sphere Fluidics develop instruments that use microdroplets, whereas Aqdot produces microcapsules that are involved in molecule release and capture.

In 2013 Chris began to move into University administration, becoming Director of the Office of Postdoctoral Affairs. In 2016 he became PVC for Research, in which role he spearheaded the University's preparations for Brexit and the upcoming Research Excellence Framework (REF) assessment. He was also a major influence in setting up the Cambridge Zero initiative and the University's COVID testing facilities.

Through his time as PVC, research on fragment-based drug discovery continued in his research group, targeting enzymes associated with diseases such as tuberculosis, cystic fibrosis and cancer. The work on microdroplets is also on-going. Chris was elected FMedSci in 2012, FRS in 2016 and most recently won the 2020 RS.C. Interdisciplinary Prize. He has published over 350 papers and mentored over 150 MPhil, PhD and postdoctoral researchers during his career. They all found him incredibly kind, supportive and keen to enable them to do the best they can.

Finian J Leeper (University of Cambridge, UK)

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