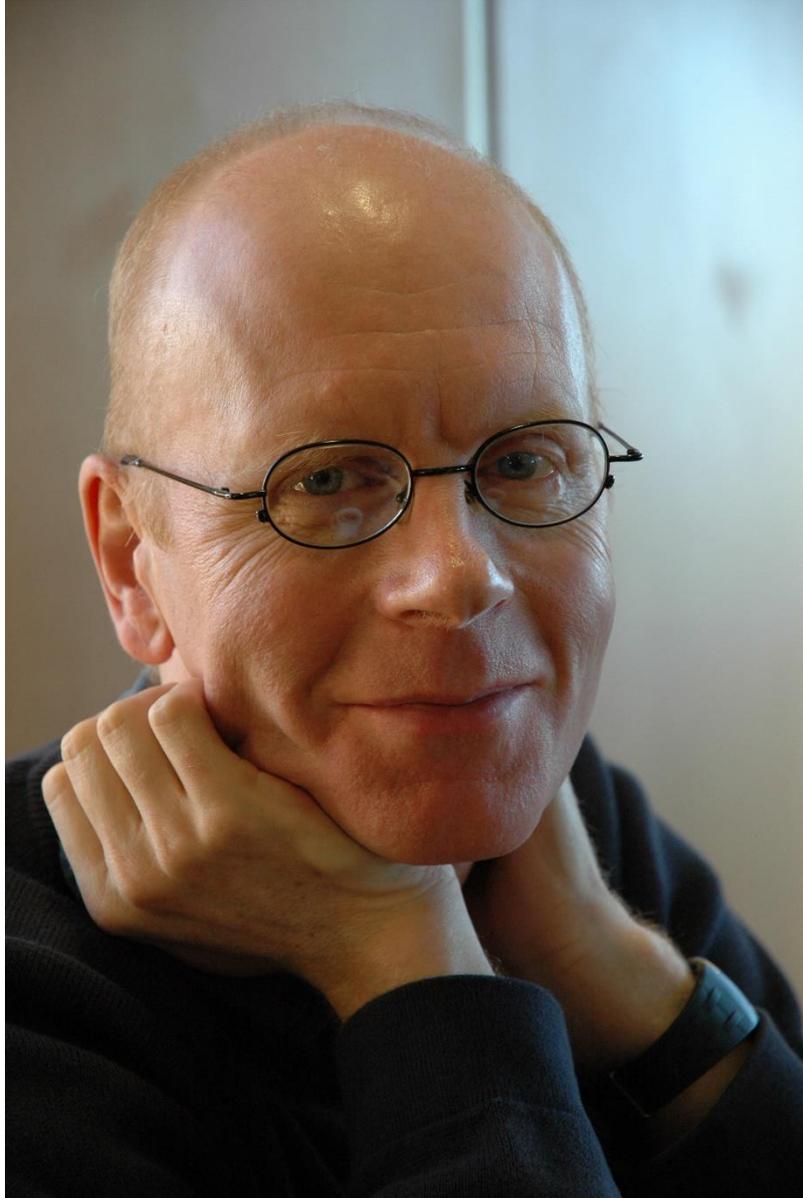


Frank Wright, Biomathematician and Computational Biologist.

Born: 28 April, 1955, in Govan, Glasgow.

Died: 15 December, 2020, in Edinburgh.



Frank at a scientific meeting at the University of Dundee, 2005 (photo credit: Geoff Barton)

Francis G. Wright (Frankie, later Frank), who has died aged 65, was a pioneer of computational biology techniques. He leaves an immense legacy through the methods and software he developed and the advice he gave so generously to colleagues and students.

At the time of Frank's birth, his father George, originally from Portlethen near Aberdeen, was a labourer. His mother Mary, from Moville in County Donegal, worked part-time as a cleaner. While both had left school at the end of the compulsory phase, they conveyed to their children a strong belief in the value of education. Frank was schooled at St Anthony's in Govan, then St Sixtus and St Pius in Drumchapel, with some Sixth Year Studies at Allen Glen's. At

secondary school he excelled in mathematics and science. During his teenage years he also developed an interest in Buddhism and a love of walking and camping in the Scottish countryside, which stayed with him for the rest of his life.

Frank gained a BSc in Zoology with Mathematics/Physics at the University of Glasgow in 1978. As a student he became vegetarian, then vegan. Even in the 2000s his veganism caused problems with caterers at scientific conferences. Colleagues recall him complaining good-naturedly at a meeting in St Andrews about the few lettuce leaves that had been provided, while he walked into town to buy some bananas. More recently he joked that veganism was now so mainstream, he wasn't entirely happy with it. Unfortunately, for the last two years of his life, Frank spent most of his time in various hospitals. One hospital incensed him by serving an egg – a mistake he was quick to point out and which I'm sure they did not repeat. Prior to the pandemic, a group of friends and relatives would keep him supplied with bean salad, carrots, brown bread and soya yoghurt to complement the hospital diet.

After his time in Glasgow, Frank went to Sussex University, gaining an MSc in Operations Research in 1979. At this stage, he had a range of skills that was unusual – encompassing life sciences, mathematics, statistics and computing. This left him well prepared for the explosion in genetics data and computing power, which have allowed the fields of computational biology and bioinformatics to develop.

Frank completed a PhD in statistical genetics at the University of Edinburgh, interrupting his research when funding ran out to train as a Mathematics and Computing teacher. Although this suited his interest in conveying skills and knowledge, he was less keen on teaching the same topics again and again. He completed his teacher training, then finished his PhD while working full-time.

Frank joined BioSS in 1989, when it was still known by its former name, the Scottish Agricultural Statistics Service. He was based variously at the Edinburgh office, within Edinburgh University's King's Buildings, and the Dundee office at the James Hutton Institute, formerly the Scottish Crop Research Institute.



One of Frank's most important contributions to research was his 1990 paper, "The 'effective number of codons' used in a gene" – published in the journal *Gene* (DOI: 10.1016/0378-1119(90)90491-9), and at the time of writing with well over 1300 citations. This paper provided a method to quantify the variation in the DNA sequence of genes. It was ahead of its time, with little gene sequence data being available in 1990. However, sequencing DNA has now become routine in biology. Over the last year, Frank's method has been used to analyse data on SARS-CoV-2, fruit flies, phytoplankton and many other species.

Other topics where Frank conducted research included the exchange of DNA between virus strains and phylogeny, the reconstruction of evolutionary relationships. He combined an interest in theory with an interest in practical application, helping people to make use of theory he and others developed.

It is for his work in statistical and computational phylogeny that Frank was best known in later years. In particular, he led the TOPALi project (<http://www.topali.org/>), which made advanced phylogenetic analyses easy to perform through an online interface. He was immensely generous with his time and expertise, which he shared freely with students, colleagues and friends. In fact, there was little division between these categories – Frank’s work was a huge part of his life.

Not all aspects of his life were as well-organised as his research. Frank could often be found moving his car in the streets around King’s Buildings in the middle of the day, not having sorted out a campus parking permit but keen to avoid fines.

Meetings and conversations with Frank were always memorable and rarely short. His approach to work was highly social and the scientific conference was one of his favourite environments. He also enjoyed delivering training. Frank was motivated by curiosity, rigour and a desire to see the work done well – he saw this as an end in itself.

For the last two years of his life, Frank’s involvement in research was sadly curtailed by ill health. However, he continued to read widely and discuss the latest findings. Frank was looking forward to a kind of scientific non-retirement, where he would transfer his experience to a new generation through advice and training. Although, sadly, this was not to be, in truth he had been doing this over his entire career. Many researchers, across Scotland and around the world, benefitted from Frank’s experience, generosity and his highly ethical approach to research. As we convey at least some of this to our own students and colleagues, his influence lives on.

Frank is survived by his sister Isobel, his nephew Gerald and his ex-wife Anne in Scotland, relatives in the Republic of Ireland and the USA and many long-term friends.



Frank meeting the Princess Royal with BioSS colleagues at the Moredun Research Institute, 2007