



Obituaries

Anne Penfold Street AM

11 October 1932 to 28 December 2016



With the passing of Anne Penfold Street on Wednesday 28 December 2016, the international combinatorial community has lost a dear friend and a respected colleague. Anne is survived by her daughter Deborah Street, son Anthony Street and her grandchildren Amelia Street and Thomas Wilson.

Born in Melbourne, Anne studied at the University of Melbourne. She graduated with a Master of Science by research in Chemistry in 1956. This study sparked Anne's interest in the mathematics needed for the application of quantum mechanics to the prediction of properties of new compounds and she went on to complete a PhD in group theory under the supervision of Michio Suzuki at the University of Illinois in 1966.

In 1967 Anne took up a lectureship in Mathematics at The University of Queensland and moved through the ranks, being appointed to a personal chair in Mathematics in 1985. In 1990 the Centre for Combinatorics was established with Anne as its director. In 1993 Combinatorics was designated a University Priority Area at The University of Queensland, and in 1998 a merger with the Algorithm Design Group resulted in the formation of the Centre for Discrete Mathematics

and Computing with Anne as its Director from its inception until she stood down in 2004.

Although initially Anne's research was in group theory, Anne's main research interest was in combinatorial designs, binary arrays and Ramsey theory. As Anne described it, "Each of these topics explores distinct properties of families of subsets of finite sets: a design is a way of choosing a family of subsets with certain specified properties; binary arrays can be considered as lists of subsets of a finite set; Ramsey theory deals with properties which certain families of subsets must inevitably have." While the relevance of this area of mathematics to designed experiments was realised in the 1930s Anne made a significant contribution to the discussion through numerous publications including coauthoring a seminal text *Combinatorics of Experimental Design* with her daughter Deborah. With the advent of the computer, applications have extended to include the encoding of information for its storage and use in a computer, and in the secure transmission of digital information.

Much of Anne's research was supported by Australian Research Council grants. With this funding Anne developed an internationally renowned researcher network at the University of Queensland, providing financial support for young postdoctoral researchers and building a strong research environment for the mentoring of her colleagues. She supervised eight PhD students and three MSc by research students. Former student Catherine Greenhill said, "Anne gave me my start in research, and was a wonderful role model" and another student, Edward Dawson, said, "Anne supervised my MSc thesis and very much helped direct me 35 years ago into a research career".

Anne was honoured by the award of one of the inaugural Australian Senior Research Fellows (1991–1995), and of a D. Math (*honoris causa*) by the University of Waterloo in 1996.

Anne was active from the beginning in the conference series now known as the Australasian Conference on Combinatorial Mathematics and Combinatorial Computing (ACCMCC). Started informally, the participants eventually formed the Combinatorial Mathematics Society of Australia (CMSA) which incorporated in 1996 with Anne as the president. She received the inaugural CMSA medal for outstanding service in 1999 and at the most recent conference in the series (2016) the student prize given at each conference was renamed as the CMSA Anne Penfold Street Student Prize. To further promote this organisation and associated research activities Anne oversaw the establishment of the *Australasian Journal of Combinatorics* and was Editor-in-Chief from 1990 to 2001.

In 1990 the leading international body in the area of combinatorics, the Institute of Combinatorics and its Applications, was set up. Anne was a Founding Fellow and was on its Council from its inception until the end of her terms as president (1996 to 2002).

Anne took an active role in the development of a teaching program in combinatorics and co-authored five textbooks which became standard texts in the area, in Australia and overseas.

Anne dedicated much of her professional and personal time to the activities of the Australian Mathematics Trust (AMT), working to challenge and to encourage the development of young Australians' understanding of mathematics and informatics and to help them to realise their intellectual potential in these areas. The importance of Anne's contribution was acknowledged when she was awarded the 1994 Bernhard H Neumann Award for excellence in mathematics enrichment.

Her work with the AMT and as President of the Australian Mathematical Olympiad Committee, together with her mentoring of junior colleagues resulted in her being appointed a member of the Order of Australia in 2014 for services to education in mathematics.

Through passion and dedication Anne significantly enhanced Australia's international reputation and advanced mathematical proficiency. Her contribution to academia has left a substantial legacy for Australia. I personally remember Anne for her strength and the cool, calm approach that she displayed no matter what the situation. Anne has inspired many of us to strive for excellence and achieve our full potential.

Anne will be very sadly missed by her many friends both in Australia and around the world.

Diane Donovan

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