Robert Aitken Bryce
16 November 1940 to 26 January 2017

Bob Bryce (as he was universally known) loved problem-solving and was good at it: this characterised the many valuable contributions he made to teaching, research, mathematics enrichment and administration. He was a clear and precise communicator and a gentle and understanding teacher and mentor.

Bob was born and had a happy upbringing in Ipswich in Queensland. At Ipswich Grammar he was an outstanding student, scholastically and as an athlete and swimmer. He went on to study mathematics at the University of Queensland.

Bob was one of a number of Queensland students attracted to the Australian National University by the presence of Bernhard and Hanna Neumann. Bob completed a master's degree at Queensland with a thesis on a problem suggested to him by Hanna. He came to the Australian National University in 1965 and became a PhD student of Laci Kovács. After completing his PhD he remained at the ANU until his retirement in 2003 and beyond.

Much of Bob's published work gives a solution to a problem that interested him and much is joint with his collaborators. When interested in a problem, whether one of his own or suggested by someone else, he was happy to collaborate on finding a solution. In his early work on varieties, Bob became interested in the structure and representation theory of finite groups. This interest led to his work on classes of finite soluble groups, inspired by far-reaching generalisations of Sylow and Hall subgroups by Carter and Gaschütz in the 60s. Over a 20-year period, often in collaboration with me and others, this was an area in which he made major contributions. On a personal note, our collaboration included more than the joint papers (about half the papers of each of us) and I felt fortunate to collaborate with him. His influence can perhaps best be seen by consulting the author index

of the book *Finite Soluble Groups* by Doerk and Hawkes — there are very few with more citations than Bob. Trevor Hawkes writes:

> In 1972 Bryce and Cossey proved a remarkable theorem that classes of finite soluble groups closed under taking subgroups, quotients and normal products are so-called primitive saturated formations. During the next two decades they made significant contributions to the study of classes of finite soluble groups that admit various combinations of closure operations, in particular to the theory of Fitting classes. In 1982 they removed their earlier restriction on nilpotent length by proving that *all* subgroup-closed Fitting classes are formations. In their subsequent body of work, they made many other valuable contributions to this area, but this theorem will surely stand as their most impressive result.

Bob developed an interest in the history of mathematics, and in particular the development of group theory. This led him to a study of the attempt by Ruffini to prove the insolubility of the quintic by radicals, which in turn led him to a serious study of Italian. He became fluent and concluded that Ruffini never quite succeeded. Some time after spending sabbatical leave in Italy, a colleague there wrote to Bob, posing a question. Bob became interested in the question and this led to a long and fruitful collaboration. Much of his later research was concerned with minimal coverings of groups by subgroups and again Bob made significant contributions, often jointly with his Italian collaborators, Fedri and Serena.

Bob took on many administrative duties. Bob was someone who had the ability and saw the need for administration, though I think he would have described himself as a reluctant administrator. At the ANU at a time of upheaval and rapid change, he served as Head of Department, Chair of the Admissions Committee, as ANU representative on the ACT Board of Senior Studies and as Chair of the Assessment and certification subcommittee of the BSSS. He was awarded a Public Education Award for Outstanding Service by the ACT Department of Education. He served on the Council of the Australian Mathematical Society and was a member of its standing committee on Mathematics Education. He was also very active in outreach activities, as a participant and an administrator. He contributed to and was coordinator for more than 20 years of a Friday night enrichment program for high school students, initiated by the Canberra Mathematical Association and the ANU. He served on the Problems Committee of the Australian Mathematics Competition for 30 years. Bob was one of the strongest contributors, not only in posing problems of his own, but providing insight to others. He also served on the Problems Committee for the Mathematics Challenge for Young Australians for more than 20 years. He was given a B. H. Neumann Award by the Australian Mathematics Trust. He served on the Council of the Canberra Mathematical Association and was made a life member.

Bob will be remembered with affection by many in Australia and overseas for sharing his love of mathematics and friendship with us. He will be missed. Bob is survived by his wife Pam and his blended family of five children and seven grandchildren.

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