

ASSOCIATION FOR THE ADVANCEMENT OF ANIMAL BREEDING AND GENETICS

FELLOWS OF THE ASSOCIATION

“Persons who have rendered eminent service to animal breeding in Australia and/or New Zealand or elsewhere in the world, may be elected to Fellowship of the Association...”

Elected February 1990

R.B.M. Dun
F.H.W. Morley (deceased)
A.L. Rae (deceased)
H.N. Turner (deceased)

Elected September 2005

B.M. Bindon
M.E. Goddard
H.-U. Graser
F.W. Nicholas

Elected September 1992

K. Hammond

Elected September 2007

K.D. Atkins
R.G. Banks
G.H. Davis

Elected July 1995

C.H.S. Dolling
J.R. Hawker
J. Litchfield

Elected September 2009

N. Fogarty
A. Fyfe
J. McEwan
R. Mortimer
R. Ponzoni

Elected February 1997

J.S.F. Barker
R.E. Freer

Elected June 1999

J. Gough
J.W. James

Elected February 2011

B.P. Kinghorn
A. McDonald

Elected July 2001

J.N. Clarke
A.R. Gilmour
L.R. Piper

HONORARY MEMBERS OF THE ASSOCIATION

“Members who have rendered eminent service to the Association may be elected to Honorary Membership...”

Elected September 2009

W.A. Pattie
J. Walkley

BRIAN KINGHORN

Brian Kinghorn was born and raised in the Glasgow area. After a year as a veterinary representative, he left Scotland in 1975, eventually working as a deckhand on a cargo ship that landed him in Southern Africa. After two years in Rhodesia/Zimbabwe he and Conny came to hitch-hike round Australia, falling in love with the place.



After obtaining his PhD from Edinburgh under Alan Robertson and a Dr. Agric degree from Norway under Professor Harald Skjervold, he joined NSW Agriculture in the early 1980s at Trangie and made immediate contributions to automated data collection. Through close collaboration with NSW Agriculture colleagues, he developed an appreciation of the Merino industry, which underpinned contributions over the next decade, including an insightful paper on exploitation of line and strain differences in Merinos to the 1986 Leura Conference on Merino Improvement Programs. Following his move to the University of New England, he played a pivotal role in the initiation of MerinoTech, introducing BLUP methods to the Merino industry. Further work with sheep in the 1980s and 1990s included a role in establishment of the Meat Elite program, utilising CT-Scanning and BLUP in Poll Dorset breeding, which was fundamental in establishing across-flock and subsequently across-breed evaluation in meat sheep.

The above successes form one component of Brian's broad interest in the key area of *breeding program design*. Another area of significant contributions is the simultaneous exploitation of additive and non-additive genetic variance. This has been coupled with great enthusiasm and effectiveness to develop practical ways to collect more comprehensive performance information. These insights and methods have been applied in beef cattle, pigs and aquaculture in Australia and internationally.

In parallel, Brian has maintained three streams of activity that have made major contributions to scientific understanding, training and industry practice:

- He has made significant contributions on methods for detecting and utilising major genes, QTLs and more recently genomic information (in the form of SNPs) in practical breeding programs. This has led to a significant local industry development where the Angus breed in Australia uses GeneProb software developed by Brian and Richard Kerr, in conjunction with DNA tests for detection of unfavourably recessive conditions, with very successful results.
- Brian developed in the second half of the 1990s *mate selection* methods, which allow simultaneous optimisation of selection and mate allocation, which has been delivered to industry in a commercial form (TGRM). Mate Selection tools are now used on a regular basis in pig, poultry, aquaculture, and species conservation. This approach is one of the most significant application breakthroughs in animal breeding, essentially by making optimising breeding programs for multiple, complex aims and constraints a simple, user-controlled process. While adoption in Australia has grown slowly, initially in meat sheep but spreading to Merinos and beef cattle, the results are spectacular, and moves are underway to extend the reach and accessibility of these tools for the Australian beef industry. More recently, Brian has explored new frontiers in the use of genomic data, including contributions to efficient use of sequence information (genotype imputation), optimising genotyping in breeding populations, and a suite of optimisation applications addressing genetic and production optimisation simultaneously.

- In parallel, Brian has revolutionized the *teaching of animal breeding* by combining his unique skills in visualisation of concepts, software development, and seeing (and conveying) problems in unique and intuitive ways, with an enthusiasm for innovation for those who seek to learn. He has been an inspiring teacher, supervisor and mentor now to a generation of students and colleagues both in Australia and overseas, and has inspired many to extend their thinking and skills in making complex problems appropriately simple.

Brian has made seminal contributions to the theory, practice and teaching of animal breeding in its broadest sense locally, nationally and internationally. His legacy will be generations of students, teachers, researchers and practitioners who visualize problems, and seek solutions utilizing all available information in elegant and practical ways. His direct impact on beef and sheep breeding programs in Australia has already been significant through Merinotech, Meat Elite, the Beef CRC, and the steadily growing use of TGRM and the next-generation approaches Brian is currently developing, as well as the rapid implementation of smart methods to manage recessive genes. As the more basic elements of effective animal breeding – good performance recording and accurate genetic evaluation – are more and more completely established, the wide range of tools and insights that Brian has developed to make breeding programs “fly” will be more and more widely used.

The Australian livestock industries can be proud to have played a part in Brian’s continuing development as an internationally recognised (reflected in numerous invited presentations at World Congresses and other prestigious forums) scientific leader, and to have partnered in obtaining the benefits from the effective breeding programs that his insights have contributed to.

For his outstanding contributions to the science of genetics and animal improvement the Association for the Advancement of Animal Genetics and Breeding is pleased to enroll him as a Fellow of the Society.

ALEX MCDONALD

After graduating from La Trobe University in Melbourne, Alex McDonald worked in research and extension with the Victorian Department of Agriculture for 12 years, based at Wodonga.

In 1986 he was appointed as the National Field Coordinator for the Australian genetic evaluation program BREEDPLAN. Over the following 30 months, he achieved a 320 percent increase in herds using the system. There were 235 herds enrolled in BREEDPLAN in 1986 and only one breed conducting an across-herd genetic analysis. By December 1988 the number of herds had increased to almost 900 with five breeds running breed genetic analyses.



From 1989 to 1992, Alex was based at the Animal Genetics and Breeding Unit as coordinator of the National Carcase Evaluation Project, better known as the industry-funded BREEDPLAN Validation Project. The objective of this project was to implement an ongoing national carcase evaluation program through BREEDPLAN, utilising both live animal scanning and actual carcase measurements. He was involved in bringing real-time ultrasound scanning technology to Australia's livestock industries. In this capacity, he was also involved in the design of the CRC for the Cattle and Beef Industries (Meat Quality), which commenced its initial animal breeding programs in late 1992.

In 1992, Alex was appointed as General Manger of the Australian Limousin Breeders' Society Ltd and continues to hold this position. Over that period he has been an exceptional advocate for the use of genetic technologies such as BREEDPLAN. He was the first person to introduce a scoring system for docility and the Limousin breed was the first in Australia to calculate and publish EBVs for docility. The Limousin breed has made very significant genetic improvement for that trait since docility EBVs were first published in 2000.

Alex is currently a Director of the Performance Beef Breeders Association (PBBA). Since 1998, he has been Chairman of the PBBA Technical Committee which is responsible for accreditation of ultrasound scanning technicians, structural soundness assessors and feed efficiency measurement sites.

He is also a Director of the Agricultural Business Research Institute (ABRI), which provides genetic analyses and other genetic technology services to all major beef cattle breeds in Australia, as well breed associations in many other countries including the USA, Canada, UK, South Africa and Namibia.

Since 2006 Alex has consulted to the Southern Beef Technologies Service (SBTS), which is a joint venture between Meat and Livestock Australia, ABRI and 15 temperate cattle breed societies aimed at increasing the understanding and use of genetic technologies by beef cattle seedstock and commercial breeders. Early in 2011, he was appointed as Chairman of the SBTS advisory committee.

He was appointed as a member of the AGBU Advisory Committee in 2008.

Throughout his career, Alex has been an active contributor to national beef research programs. In Beef CRC's first term between 1993 and 2000, he contributed strongly to the CRC's breeding programs by securing cattle and donations of semen and the loan of bulls from industry. More recently he has been involved in the initiation and development of the Beef Information Nucleus across a range of temperate and tropical beef breeds. This nucleus will provide an ongoing and very valuable resource for industry calibration of DNA markers in future. The Limousin breed was the first breed association to sign a contract with MLA to commence their nucleus herd. As these

nucleus herds were being developed, Alex also took a leadership role, helping other breed societies to plan and coordinate their breeding programs and phenotyping activities.

Alex has also played a strong role in the introduction of DNA markers to the Australian beef industry. He was instrumental in taking the 'F94L SNP test' from a research output at the University of Adelaide to a commercial diagnostic test for Limousin breeders offered by the University of Queensland's Animal Genetics Laboratory. He also contributed to initially testing and then commercialising the Beef CRC's poll gene test, providing excellent advice to the CRC about how best to market a less-than-perfect diagnostic test to the beef industry. As well he has been an active contributor to a small Beef CRC – MLA genomics implementation committee, responsible for determining the best way to commercialise DNA markers in the Australian beef industry so their value to industry is maximised.

Several genetics conferences have also benefited significantly from Alex' input. He was on the organising committee for the 'Applied Genomics for Sustainable Livestock Breeding' conference held in Melbourne in 2011 and the organizing committee for the workshop for Managing Recessive Genetic Conditions held in Sydney in 2011 .

For his outstanding contributions to genetic improvement of the Australian beef herd, the Association for the Advancement of Animal Genetics and Breeding is pleased to enroll him as a Fellow of the Society.