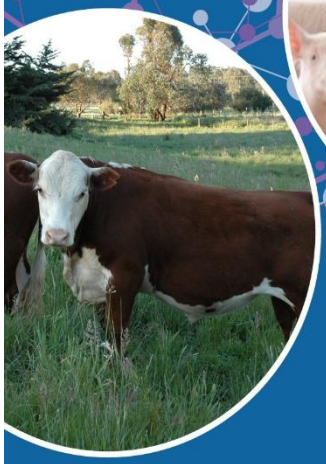

AAABG

Association for the Advancement of Animal Breeding and Genetics

24th Conference of the Association for the Advancement of Animal Breeding & Genetics

AAABG 2021

2 - 4 November, 2021

Conference Program–at–a-Glance

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HUB TIMES

AAABG Conference Daily Program-At-A-Glance: Tuesday, Nov 2nd

NZ	QLD	SA	NSW/VIC	WA				
10:30 AM	7:30 AM	8:00 AM	8:30 AM	5:30 AM	Hub Registration			
11:00 AM	8:00 AM	8:30 AM	9:00 AM	6:00 AM	JOINT SESSION: Opening ceremony (15') + Plenary session #1: Next Next Generation Approaches to Livestock Breeding (Chairs: Forbes Brien, Bill Burgess; sponsored by Weatherbys Scientific) Mark Hutchinson: "*Measurement enabled precision interventions: A future opportunity for livestock farming*" John McEwan: "*The future of genotyping*"			
12:30 PM	9:30 AM	10:00 AM	10:30 AM	7:30 AM	Morning tea (30')			
1:00 PM	10:00 AM	10:30 AM	11:00 AM	8:00 AM	Concurrent session 1A: DNA applications (Chairs: Ruidong Xiang, Hans Daetwyler)		Concurrent session 1B: Livestock well-being (Chairs: Sonja Dominik, Caeli Richardson)	
					Toni Reverter	Ultra-small SNP panels to uniquely identify individuals in thousands of samples	Sara de las Heras Saldana	Genome-wide association analysis for temperament in Australian sheep
					Elizabeth Ross	Assessing the potential of parentage testing using portable long read sequencing technologies	Saleh Shahinfar	Exploring machine learning approaches to predict the incidence of lameness in dairy cows
					Jinghang Zhou*	HandyCNV: An R package for standardized summary, annotation, comparison, and visualization of CNV and CNVR	Imtiaz Randhawa	Effects of poll breeding on reproductive traits in beef cattle
					Kaitlyn Sarlo Davila	Integration of GWAS, network and pathway analysis reveals novel insights into thermotolerance in beef cattle	Toni Reverter	ImmuneDEX: Updated genomic estimates of genetic parameters and breeding values for Australian Angus cattle
					Zhi Loh*	A deterministic algorithm for optimality of threshold in a GWAS experiment	Imke Tammen	The Anstee Hub for Inherited Diseases of Animals (AHIDA) – development of a new online platform for surveillance, reporting and control of inherited diseases in animals
2:00 PM	11:00 AM	11:30 AM	12:00 PM	9:00 AM	Break (15')			
2:15 PM	11:15 AM	11:45 AM	12:15 PM	9:15 AM	Concurrent session 2A: New phenotypes (Chairs: Mark Hutchinson, Christian Duff)		Concurrent session 2B: Heat tolerance (Chairs: Ben Hayes,Peter Wahinya)	
					Amy Bell	Dentition can predict maturity in young Merino sheep	Esther Donkersloot	The benefit of a 'slick' hair coat for heat tolerance in New Zealand dairy cattle
					Coralia Manzanilla-Pech	Genetic parameters for feed efficiency and weight in Jersey cows using 3D cameras in commercial Danish farms	Evans Cheruiyot*	Using selected sequence variants to improve genomic prediction of heat tolerance in dairy cattle
					Jo Newton	Using mid-infrared spectroscopy predictions of fertility to optimise semen allocation in dairy herds	Schalk Cloete	Responses to heat in ewes from indigenous and commercial South African sheep breeds: Preliminary results
					Rhiannon Handcock	Characterising genetic variation in urination traits of grazing dairy cattle	Laura Jensen*	Evaluation of Australian breeding values for heat tolerance under US conditions
					Irene van den Berg	Genetic parameters of blood urea nitrogen and milk urea nitrogen concentration in dairy cattle managed in pasture-based productions systems in New Zealand and Australia	Raluca Mateescu	Revealing phenotypic and genetic relationships underlying the thermotolerance-production complex in beef cattle
3:15 PM	12:15 PM	12:45 PM	1:15 PM	10:15 AM	Lunch (60')			
4:15 PM	1:15 PM	1:45 PM	2:15 PM	11:15 AM	Concurrent session 3A: Genetics x environment (Chairs: Sue Hermesch, Michelle Hebart)		Concurrent session 3B: Cattle breeding (Chairs: Steve Lee, Sara de la Heras Saldana)	
					Lino de la Cruz*	The impact of genotype by environment interaction on breeding values for 150-day weight in Katahdin sheep in Mexico	Shalanee Weerasinghe	Genome-wide association analysis of birth and weaning weights in Australian taurine beef cattle
					Dominic Waters*	Genomic analysis of genotype by environment interactions in post-weaning weight of Australian sheep	Rebecca Hickson	Selection strategies for beef cow size and condition
					Mette Madsen*	Macro- and micro-genetic environmental sensitivity for 400-day weight in Australian Angus	Imtiaz Randhawa	Quick-fire talk: Genetics of horns and scurs in cattle
4:50 PM	1:50 PM	2:20 PM	2:50 PM	11:50 PM	Break (40') - Melbourne Cup			
5:30 PM	2:30 PM	3:00 PM	3:30 PM	12:30 PM	Concurrent session 4A: Recording systems (Chairs: Gus Rose, Rudi McEwin)		Concurrent session 4B: Lifetime productivity (Chairs: Kim Bunter, Irene van den Berg)	
					Brodie Metcalfe*	Visual classing grades are heritable and visually classed Merino sheep born and reared as twins are graded lower than singles	Bailey Engle	Genomic prediction of lifetime productivity in Brahman cows
					Sarita Guy	Maximising genetic gains with data quantity and quality in Merino flocks	Majid Khansefid	Improving the accuracy of predictions for cow survival by multivariate evaluation model
					Shariful Islam*	The predicted responses to genomic selection in growing pigs	Franziska Weik*	Genetic parameters for structural traits in New Zealand beef cattle and their correlations with production traits
					Bruno Santos	Supporting data-driven sustainable livestock industries in developing countries	Obayed Al Rahman*	Defining longevity and estimating genetic parameters in Australian Merino ewes
					Chanda Nimbkar	Genetic improvement of goats owned by smallholder goat keeper women in Bihar, India with the help of a database tool	Jessica Wallace	Economic analysis of Merino ewe performance from diverse industry sires using GrassGro™
6:30 PM	3:30 PM	4:00 PM	4:30 PM	1:30 PM	Afternoon tea (30')			
7:00 PM	4:00 PM	4:30 PM	5:00 PM	2:00 PM	JOINT SESSION: John Vercoe Memorial Lecture, Ben Hayes: "*Breeding Australian cattle for production in the year 2050*" (Chair: Wayne Pitchford) Poster quick-fire talks & "ads" (next page) (Chair: Cindy Bottema)			
8:00 PM	5:00 PM	5:30 PM	6:00 PM	3:00 PM	Closing remarks			

Tuesday, Nov 2nd, @ 5 pm, SA time: Poster quick-fire talks & "ads" (Chair: Cindy Bottema)

#	Presenter	Title
	Denis Larkin	Genetic history and adaptation of Russian cattle breeds***
1	Panoraia Alexandri	Merits of developing a genetic evaluation for the Australian dairy sheep and goat industries
2	Kim Bunter	Phenotypic trade-offs between lambs and wool reflect weak antagonistic correlations between reproductive and wool traits
3	Jackie Chapman	Growth, body composition and body wrinkle are favourably correlated with reproductive performance in 2-8 year old Merino sheep
4	Bronwyn Clarke	Split paternity is high in twins born from syndicate-mated Merino ewes
5	Schalk Cloete	Genetic parameters for reproduction in intensively and extensively managed Dohne Merino flocks in South Africa
6	Natalie Connors	Addressing scur phenotyping challenges with the Southern Multi-Breed project
7	Christian Duff	Redefining residual feed intake to account for marbling fat in beef breeding programs
8	Kathryn Egerton-Warburton	The importance of early environmental effects on Merino fleece traits across two shearings
9	Mohammad Ferdosi	Evaluation of haplotype diversity of Australian beef populations using medium-density SNP genotypes
10	Johan Greeff	Microbiome analysis of the skin of sheep that are resistant or susceptible to breech flystrike***
11	Sarita Guy	Characterising the quantity and quality of data used in Merino sheep genetic evaluation systems
12	Marnie Hodge	Characterisation of spermatozoal transcriptomes in sheep, and the influence of breed and semen quality***
13	Hyoun Ju Kim	A genome-wide association study (GWAS) for carcass traits in Hanwoo cattle using imputed whole genome sequence data
14	Leah Manning	Investigation of the pathogenesis of suspected inherited neurological diseases in Australian sheep***
15	Emily Mantilla Valdivieso	Effect of bovine reference genome choice in RNA-seq alignment and differential gene expression analysis in Brangus cattle
16	Rudi McEwin	Within breed selection is sufficient to improve terminal crossbred beef marbling: A review of reciprocal recurrent genomic selection
17	Nasir Moghaddar	The effect of *GDF9* on litter size in Australian sheep
18	Sue Mortimer	Ewe reproduction status and its impact on greasy fleece weight breeding values
19	Jo Newton	Reducing lameness and urinary nitrogen excretion through selection on next generation national dairy selection indices***
20	Beth Paganoni	Proximity sensors provide an accurate alternative for measuring maternal pedigree of lambs in Australian sheep flocks under commercial conditions
21	Gertje Petersen	Management tools for genetic diversity in an isolated population of the honeybee (*Apis mellifera*) in New Zealand
22	Judith Pitchford	The use of Hereford sires over mature Angus dams can add value to Angus cattle herds
23	Imke Tammen	Curation of pig traits in the online Mendelian inheritance in animals (OMIA) database
24	Imtiaz Randhawa	Circular genomic permutations can limit the confounding effects of the reference population in the analyses of selection signatures
25	Laura Vargovic	Genetic parameters for urinalysis traits recorded on gestating sows
26	Peter Wahinya	Proposed genetic improvement strategies for dairy cattle in Kenya
27	Cherokee Walters	How are you feeling, girls? Behavioural traits as emergent properties of the community***
28	Luna Zhang	Methane emissions variation among New Zealand dairy farms and herds

***See also extended poster talks on website

QUICK-FIRE TALK: Genetics of horns and scurs in cattle (Tuesday, Concurrent Session 3B)

Presenter	Paper titles for "Genetics of horns and scurs in cattle" presentation
Imtiaz Randhawa	Efficiency of optimized poll testing assay in Australian beef cattle
Imtiaz Randhawa	Genome-wide analyses of scur genetics in cattle

ILLUMINA SPONSORED TALKS (WEBSITE ONLY)

Presenter	Title
Denis Larkin	Interview
Denis Larkin	Genetic history and adaptation of Russian cattle breeds

EXTENDED POSTER TALKS (WEBSITE ONLY)

Presenter	Paper Title
Kathryn Egerton Warburton	The importance of early environmental effects on Merino fleece traits across two shearings
Johan Greeff	Microbiome analysis of the skin of sheep that are resistant or susceptible to breech flystrike
Marnie Hodge	Characterisation of spermatozoal transcriptomes in sheep, and the influence of breed and semen quality
Leah Manning	Investigation of the pathogenesis of suspected inherited neurological diseases in Australian sheep
Jo Newton	Reducing lameness and urinary nitrogen excretion through selection on next generation national dairy selection indices
Cherokee Walters	How are you feeling, girls? – Behavioural traits as emergent properties of the community

AAABG Conference Daily Program-At-A-Glance: Wednesday, Nov 3rd (PRODUCER DAY)

HUB TIMES					
NZ	QLD	SA	NSW/VIC	WA	
10:30 AM	7:30 AM	8:00 AM	8:30 AM	5:30 AM	Hub Registration
11:00 AM	8:00 AM	8:30 AM	9:00 AM	6:00 AM	JOINT SESSION: Welcome address (5') + Plenary session #2: Industry Opportunities (Chairs: Wayne Pitchford, Geoff Lindon; sponsored by AWI) Suzanne Rowe: *"The contribution animal breeding can make to industry carbon neutrality goals"* Kevin Atkins (2019 Helen Newton Turner Oration): "*Genetic evaluation in Merinos: Past and future opportunities*"
12:30 PM	9:30 AM	10:00 AM	10:30 AM	7:30 AM	Morning tea (30')
1:00 PM	10:00 AM	10:30 AM	11:00 AM	8:00 AM	Special joint session: Breeder insights & Panel discussion (Chairs: Wayne Pitchford, Geoff Lindon)
					Peter Blackwood — Performance Corriedale Group genomics project
					Lynton Arney — Ewe lamb joining for selection
					Tim Leeming — Genetics for self-replacing maternals: Paradoo Prime
					Sally Martin — Merinolink/UNE DNA stimulation project: Doubling the rate of genetic gain - where are we after 4 years?
					Greg Popplewell — Popplewell tropical beef composite breeding program
					PANEL DISCUSSION
2:00 PM	11:00 AM	11:30 AM	12:00 PM	9:00 AM	Break (15')
2:15 PM	11:15 AM	11:45 AM	12:15 PM	9:15 AM	Concurrent session 2A: Genomics in practice (Chairs: Daniel Brown, Bailey Engle) / Concurrent session 2B: Causal & predictive variants (Chairs: Imke Tammen, Stefan Hiendleder)
					Pamela Alexandre — Assessment of genomic predictions for feedlot and carcase traits in Australian Angus steers / Phillip Gurman — Multivariate analyses using two genomic relationship matrices to weight predictive SNP markers
					Christian Duff — The value of live-animal ultrasound scanning of breeding candidates for carcase traits in the age of genomics / Li Li — Evaluating the benefits of including predictive SNP markers in single step evaluation in sheep using cross-validation
					Mekonnen Haile-Mariam — Genomic evaluation of male fertility of Australian Holstein-Friesian and Jersey bulls / Ruidong Xiang — Bayesian genome-wide analysis of cattle traits using variants with functional and evolutionary significance
					Brad Hine — Development of Angus SteerSELECT - A genomic based tool to identify performance differences of Australian Angus steers during feedlot finishing: Phase 1 validation / Claire Prowse-Wilkins — Narrowing the search space: Putative causal variants are enriched in annotated functional regions from 6 bovine tissues
					Stephen Lee — Investigating the potential to utilise commercial carcass traits in genetic evaluation / Mehrnush Forutan — Genome wide analysis of bovine enhancers and promoters across developmental stages in liver
3:15 PM	12:15 PM	12:45 PM	1:15 PM	10:15 AM	Lunch (60')
4:15 PM	1:15 PM	1:45 PM	2:15 PM	11:15 AM	Concurrent session 3A: Breeding directions (Chairs: Peter Amer, Penny Schulz) / Concurrent session 3B: Genotype imputation (Chairs: Julius van der Werf, Lloyd Low)
					Daniel Brown — Single step genomic evaluation of lambing ease in Australian terminal sire breed sheep / Iona MacLeod — Current challenges for imputation of SNP chips to whole genome sequence in cattle & sheep
					Kieran Ransom — Ewes for the future: A commercial comparison of ewe breeds for reproduction, wool and lamb growth / Hans Daetwyler — Genotyping dairy cattle with skim-whole-genome sequencing and imputation
					Gemma Jenkins — New Zealand national dairy breeding objective review stakeholder survey / Mohammad Ferdosi — The effects of number of reference individuals on the accuracy of imputation from low and medium densities to high density
					Lee-ann Monks — Dairy farmer perceptions and attitudes to female genomic testing / Hassan Aliloo — The impact of reference composition and genome build on the accuracy of genotype imputation in Australian Angus cattle
					Jen Peart — Identifying the breeding preferences and attitudes of the Australian beef cattle producer / Tuan Nguyen — Exploring imputation accuracy across the bovine X Chromosome
5:15 PM	2:15 PM	2:45 PM	3:15 PM	12:15 PM	Break (15')
5:30 PM	2:30 PM	3:00 PM	3:30 PM	12:30 PM	Concurrent session 4A: Welfare & resilience (Chairs: Jennie Pryce, Sarita Guy) / Concurrent session 4B: Genomic evaluation (Chairs: Dorian Garrick, Evans Cheruiyot)
					Laura Vargovic — Economic benefit of additional recording for welfare traits in maternal breeding objectives for pigs / Karin Meyer — Impact of missing pedigrees in single-step genomic evaluation
					Sam Walkom — Improve your social license - breed sheep for disease resistance / Harry Lamb* — Accuracy of genomic prediction in Brahman cattle using simulated genotypes from low-coverage Nanopore sequencing
					Johan Greeff — Genetic parameters of breech strike, neck wrinkles, dags and breech cover over the lifetime of crutched Merino ewes in a Mediterranean environment / Amali Samaraweera — Estimation of optimum polygenic and genomic weights in single step genetic evaluation of carcass traits in Australian Angus beef cattle
					Cornelius Nel — Genetic parameters and trends for lamb survival following long term divergent selection for number of lambs weaned in the Elsenburg Merino flock / Andre Tan* — Comparing genomic with pedigree relationship matrices and preliminary genome wide association in Santa Gertrudis bulls
					Peter Amer — Genetic progress for environmental outcomes – how do we get it? / Gilbert Jeyaruban — Determination of optimum weighting factors for single step genetic evaluation via genetic variance partitioning
6:30 PM	3:30 PM	4:00 PM	4:30 PM	1:30 PM	Afternoon tea (30')
7:00 PM	4:00 PM	4:30 PM	5:00 PM	2:00 PM	JOINT SESSION: AAABG Fellowships: Awards & Addresses (Chair: Wayne Pitchford)
8:00 PM	5:00 PM	5:30 PM	6:00 PM	3:00 PM	Closing remarks

AAABG Conference Daily Program-At-A-Glance: Thursday, Nov 4th

HUB TIMES					
NZ	QLD	SA	NSW/VIC	WA	
11:00 AM	8:00 AM	8:30 AM	9:00 AM	6:00 AM	JOINT SESSION: Welcome address (5') + Plenary session #3: Addressing livestock well-being (Chairs: Bronwyn Clarke, Evgeny Glazov; sponsored by Illumina) Naomi Wray: *"What can research on the genetics of human well-being tell us about improving livestock well-being?"* Sonja Dominik: "*Advancing livestock well-being: The role of genetic improvement* "
12:30 PM	9:30 AM	10:00 AM	10:30 AM	7:30 AM	Morning tea (30')
1:00 PM	10:00 AM	10:30 AM	11:00 AM	8:00 AM	Concurrent session 1A: Genomics of reproduction (Chairs: Bec Hickson, Maddy Facy) / Concurrent session 2B: Breeding objectives (Chairs: Sam Walkom, Timothy Bilton)
					Laurie Piper — An evaluation of the effect of the Booroola gene, *Fec B* , on productivity in a Border Leicester x Merino prime lamb production system / Michelle Axford — Impact of a multiple-test strategy on breeding index development for the Australian dairy industry
					Babatunde Olasege* — Genetic parameter estimates for female and male fertility traits using genomic data to improve fertility in Australia beef cattle / Luna Zhang — The application of a sub-index weighted percent emphasis method to Australian dairy selection indexes
					Marina Fortes — Phenobank: A platform to facilitate collaboration and genomic selection for female fertility in beef cattle / Stephen Miller — A new tool to select Angus bulls to breed to dairy cows
					Laercio Porto-Neto — Multi-breed genomic prediction for male fertility in tropical beef cattle / Ireti Balogun* — Trait prioritization methods used in animals also work in plants
					Yutao Li — Ranking Brahman bulls for female reproductive performance in northern Australian commercial environments using DNA pooling / Gertje Petersen — Industry consultation as the basis of a breeding objective for the New Zealand beekeeping industry
2:00 PM	11:00 AM	11:30 AM	12:00 PM	9:00 AM	Break (15')
2:15 PM	11:15 AM	11:45 AM	12:15 PM	9:15 AM	Concurrent session 2A: Improving reproduction (Chairs: Juca Porto Neto, Rhiannon Handcock) / Concurrent session 2B: Optimising genetic gains (Chairs: Gertje Petersen, Laura Vargovic)
					Susanne Hermesch — Economic values for farrowing rate to improve seasonal fertility / Brian Kinghorn — Management of inbreeding and co-ancestry to target short-term and long-term genetic gains
					Andrew Swan — Deriving breeding values for net reproduction rate from component traits in sheep / Torsten Pook — The Modular Breeding Program Simulator (MoBPS) allows efficient simulation of complex breeding programs
					Katarzyna Stachowicz — New model for genetic evaluation of fertility in New Zealand dairy cattle / Beth Scott* — Does selecting for the A2 β-casein allele increase inbreeding?
					Matt Wolcott — Genetics of heifer age at puberty in Australian Angus cattle / Yuandan Zhang — Genetic diversity and trends of Australian Japanese Black cattle
					Kirsty Moore — Genetic analysis of body condition and growth traits in beef females within and across ages and physiological states / Mark Henryon — Group records with genomic prediction convert accuracy into genetic gain more efficiently than pedigree prediction
3:15 PM	12:15 PM	12:45 PM	1:15 PM	10:15 AM	Lunch (60')
4:15 PM	1:15 PM	1:45 PM	2:15 PM	11:15 AM	Concurrent session 3A: Sustainability (Chairs: Suzanne Rowe, Mette Madsen) / Concurrent session 3B: Genetic evaluation (Chairs: Andrew Swan, Franziska Weik)
					Timothy Bilton — Impact of breeding for divergent methane yield on milk composition in breeding ewes / Matt Reynolds — EBVs predict progeny performance differences
					Melanie Hess — Across-country prediction of methane emissions using rumen microbial profiles / Christie Warburton* — Breed-adjusted genomic relationship matrices as a method to account for population stratification in multi-breed populations of tropically adapted beef heifers
					Caeli Richardson* — A method for implementing methane breeding values in Australian dairy cattle / Madeliene Facy* — Evaluation of dominance in tropically adapted composite beef cattle
					Boris Sepulveda* — Genomic breeding values for residual feed intake in Australian maternal composite ewes / Tom Granleese — Is sex determination in Merinos heritable?
					Sunduimijid Bolormaa — Next generation feed saved Australian breeding values evaluated in Holstein dairy cattle / Uddhav Paneru* — Investigation of methods for inclusion of fixed effects for ultrasound scan traits in large scale sheep genetic evaluation
5:15 PM	2:15 PM	2:45 PM	3:15 PM	12:15 PM	Break (15')
5:30 PM	2:30 PM	3:00 PM	3:30 PM	12:30 PM	Concurrent session 4A: Production traits (Chairs: Johan Greeff, Pamela Alexandre) / Concurrent session 4B: Resource populations (Chairs: John McEwan, Beth Scott)
					Panoraia Alexandri — Genetic association between ultrasound and carcass muscle dimension measures in sheep / Ken Dodds — A genomic comparison of Australian, New Zealand and Norwegian dairy goat populations
					Sue Mortimer — Variation between Merino sires in lamb carcass value / Wayne Pitchford — Genomic analysis of purebred and crossbred Angus cattle demonstrates opportunity for multi-breed evaluation
					Nipa Sarker* — Improving carcase value by incorporating primal weights into pig breeding objectives / Brad Walmsley — Initiating the Southern Multi-Breed resource population
					Ee Cheng Ooi* — Identification of genetic variants linking dairy fertility and milk production traits / Sam Walkom — Using MATESEL to aid sire allocation in genomic reference populations - Southern Multi-Breed an example
					Cheryl Quinton — Indexes supporting genomic tools for selecting commercial Angus heifer replacements and identifying steers for long-fed programmes in Australia / Kath Donoghue — Southern Multi-Breed resource population: Generation of cohorts one and two
6:30 PM	3:30 PM	4:00 PM	4:30 PM	1:30 PM	Afternoon tea (30')
7:00 PM	4:00 PM	4:30 PM	5:00 PM	2:00 PM	JOINT SESSION: General meeting (including 2021 Helen Newton Turner Oration & Conference awards) (Chair: Forbes Brien)
8:00 PM	5:00 PM	5:30 PM	6:00 PM	3:00 PM	Closing remarks