



ISAG . 2019

37th International Society for
Animal Genetics Conference

July 7 - 12, 2019 - Lleida, Spain



Ruminant Genetics and Genomics

Organised by a standing committee: YES X NO

Meeting information

Date: July 9

Time: 9:00 AM – 12:30 PM

Number of participants: 120 - 130

Chair

Name: Laercio Porto-Neto

Affiliation: Commonwealth Scientific and Industrial Research Organization (CSIRO) Agriculture and Food

Contact email: laercio.portoneto@csiro.au

Agenda

9:00 AM 80050 **Local ancestry and functional genomics of trypanotolerant and trypanosusceptible admixed African cattle breeds.**
Gillian P. McHugo¹, Grace M. O'Gorman², Emmeline W. Hill¹, and David E. MacHugh^{*1,3}, ¹UCD School of Agriculture and Food Science, University College Dublin, Belfield, D04 V1W8, Ireland, ²National Office of Animal Health Ltd., Enfield, EN2 7HF, United Kingdom, ³UCD Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Belfield, D04 V1W8, Ireland.

9:15 AM 80122 **Resequencing the most Northern cattle breeds provides insight into their history and adaptation to cold.**
L. Buggiotti¹, A. Yurchenko², H.D. Daetwyler^{3,4}, C.J. Vander Jagt³, and D.M.



		Larkin* ^{1,2} , ¹ Royal Veterinary College, London, UK, ² Institute of Cytology and Genetics, Novosibirsk, Russia, ³ Agriculture Victoria, Bundoora, Victoria, Australia, ⁴ La Trobe University, Bundoora, Victoria, Australia.
9:30 AM		Trends of CNV research in ruminants. George Liu, <i>Animal Genomics and Improvement Laboratory, ARS, USDA Beltsville, MD, USA.</i>
9:45 AM	79896	Multi-level conservation of chromosome conformation across livestock species reveals evolutionary links between genome structure and function. Sylvain Foissac* ¹ , Sarah Djebali ¹ , Nathalie Vialaneix ² , Matthias Zytnicki ² , Andrea Rau ⁴ , Sandrine Lagarrigue ³ , Hervé Acloque ⁴ , and Elisabetta Giuffra ⁴ , ¹ GenPhySE, INRA, Toulouse Auzeville, FRANCE, ² MIAT, INRA, Toulouse Auzeville, FRANCE, ³ PEGASE, INRA, Rennes, FRANCE, ⁴ GABI, INRA, Paris Jouy-en-Josas, FRANCE.
10:00 AM	77882	Epigenetic factors to face environmental variations in small ruminants. Laure Denoyelle* ^{1,3} , Pierre de Villemereuil ¹ , Frederic Boyer ¹ , Meidhi Khelifi ¹ , Clement Gaffe ¹ , Florian Alberto ¹ , Badr Benjelloun ^{2,1} , and Francois Pompanon ¹ , ¹ Univ. Grenoble Alpes, Univ. Savoie Mont Blanc, CNRS, LECA, F-38000 Grenoble, France, ² Institut National de la Recherche Agronomique Maroc (INRA-Maroc), Centre Régional de Beni Mellal, Beni Mellal 23000, Morocco., ³ GenPhySE, INRA, INPT, ENVT, Université de Toulouse, 31326 Castanet-Tolosan, France.
10:15 AM	79732	A scalable pipeline to scan for selective sweeps in whole-genome sequences: Application to bovine. D. F. Cardoso* ^{1,2} , L. R. Porto-Neto ² , M. Naval-Sánchez ² , H. Tonhati ¹ , and A. Reverter ² , ¹ Department of Animal Science, School of Agricultural and Veterinarian Sciences, Sao Paulo State University (UNESP), Jaboticabal, SP, Brazil, ² CSIRO Agriculture & Food, 306 Carmody Rd., St. Lucia, Brisbane, QLD 4067, Australia.
10:30 AM		Coffee/Tea Break.
11:00 AM	79843	Identification of novel haplotypes and recessive lethal alleles affecting reproduction and its pleiotropic effects in cattle. A. Cánovas* ¹ , S. Id-Lahoucine ¹ , A. Suarez-Vega ¹ , P. Fonseca ¹ , S.P. Miller ² , M. Lohuis ³ , F. Schenkel ¹ , M. Sargolzaei ^{1,4} , F. Miglior ¹ , J.F. Medrano ⁵ , and J. Casellas ⁶ , ¹ University of Guelph, Department of Animal Biosciences, Centre for Genetic Improvement of Livestock., Guelph, ON, Canada., ² Angus Genetics Inc., Saint Joseph, MO, USA., ³ Semex Alliance., Guelph, ON, Canada., ⁴ Select Sires, Inc., Plain City, Ohio, USA., ⁵ University of California-Davis. Department of Animal Science., Davis, CA, USA., ⁶ Universitat Autònoma de Barcelona., Bellaterra, Spain.

11:15 AM 79994 **Involvement of PRAMEY in the bovine sperm development and maturation.**
 Wansheng Liu*, Chandlar Kern, and Weber Feotosa, *Department of Animal Science, Center for Reproductive Biology and Health (CRBH), College of Agricultural Sciences, The Pennsylvania State University, University Park, Pennsylvania, USA.*

11:30 AM 79288 **Investigating emerging inherited diseases in Australian livestock: A snapshot.**
 S.A. Woolley*¹, E.R. Tsimnadis¹, R.L. Tulloch¹, P. Hughes¹, B. Hopkins¹, S.E. Hayes¹, M.R. Shariflou¹, A. Bauer², V. Jagannathan², C. Drögemüller², T. Leeb², M.S. Khatkar¹, C.E. Willet³, B.A. O'Rourke⁴, I. Tammen¹, ¹*The University of Sydney, Faculty of Science, Sydney School of Veterinary Science, Camden, NSW, Australia*, ²*The University of Bern, Institute of Genetics, Vetsuisse Faculty, Bern, Switzerland*, ³*The University of Sydney, Sydney Informatics Hub, Core Research Facilities, Sydney, NSW, Australia*, ⁴*The Elizabeth Macarthur Agricultural Institute, NSW Department of Primary Industries, Menangle, NSW, Australia.*

11:45 AM 79957 **A de novo mutation causes polledness and a modified shape of the skull in Fleckvieh cattle.**
 Lilian Gehrke¹, Maulik Upadhyay*², Kristin Heidrich², Elisabeth Kunz², Doris Seichter³, Alexander Graf², Stefan Krebs², Aurelien Capitan⁴, Georg Thaller¹, and Ivica Medugorac², ¹*Christian-Albrechts-University Kiel, Kiel, Schleswig-Holstein, Germany*, ²*Ludwig Maximilians University Munich, Munich, Bavaria, Germany*, ³*Tierzuchtforschung e.V. München, Grub, Bavaria, Germany*, ⁴*GABI, INRA, AgroParisTech, Paris, France.*

12:00 PM 79911 **Graph-based variant genotyping reveals natural sequence variants (NSVs) for targeted genome editing to enhance genetic resistance to *Mycobacterium bovis* infection in cattle.**
 CN Correia*¹, D Crysnanto², TS Sonstegard³, SV Gordon^{4,5}, TJ Hall¹, J Bostrom³, DF Carlson³, DA Simpson⁶, A Margariti⁶, S Kelaini⁶, H Pausch², and DE MacHugh^{1,5}, ¹*UCD School of Agriculture and Food Science, University College Dublin, Dublin, Ireland*, ²*Animal Genomics, Institute of Agricultural Sciences, ETH Zurich, Zurich, Switzerland*, ³*Recombinetics Inc., St Paul, Minnesota, USA*, ⁴*UCD School of Veterinary Medicine, University College Dublin, Dublin, Ireland*, ⁵*UCD Conway Institute of Biomolecular and Biomedical Research, University College Dublin, Dublin, Ireland*, ⁶*Centre for Experimental Medicine, Queen's University Belfast, Belfast, United Kingdom.*

12:15 PM 80112 **Variants in the bovine X chromosome are relevant to predict bull fertility.**
 M R S Fortes*^{1,2}, L R Porto-Neto³, N Satake⁴, L T Nguyen², A C Freitas⁵, T P Melo⁵, B Hayes², F S Raidan³, A Reverter³, and G B Boe-Hansen⁴, ¹*School of*



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Chemistry and Molecular Biosciences, The University of Queensland, Brisbane, Qld, Australia, ²Queensland Alliance for Agriculture and Food Innovation (QAAFI), The University of Queensland, Brisbane, Qld, Australia, ³CSIRO Agriculture and Food, Brisbane, Qld, Australia, ⁴School of Veterinary Science, The University of Queensland, Gatton, Qld, Australia, ⁵Universidade Estadual de Sao Paulo, Jaboticabal, SP, Brazil.

12:30 PM

Workshop Business Meeting.

Summary of the meeting

The workshop was well-attended, and all the presentations went well and were on time. Most presenters used all the time allocated for the presentation. Therefore not much time for questions was available – this was a little bit unfortunate, as the presentations were interesting and surely would generate some discussion. Hopefully, the discussions were followed up during the coffee break.

We had a “last-minute” cancelation of a talk because the scientist presenting the research was not granted a visa to Spain. This was sad as we were looking forward to that talk. So a bit more than a week to the conference, Dr George Liu (ARS, USDA) kindly agree on presenting a review/future perspective of CNV research in cattle.

At the end we of the talks, we were approached by Gesine Lühken (Chair of the Applied Sheep and Goat Genetics – now Small Ruminants) to discuss a possible joining of the workshops. We felt that, since Ruminants is the workshop that receives the highest number of submissions, we could keep as two separate workshops, and should ask for the next organizing committee not to put both sessions (Ruminant Genetics and Genomics and Small Ruminants) at the same time and day.

Changes in the committee. Dr Tad Sonstegard is retiring from this committee. We would like to thank for his active involvement in the committee for the last conferences. At the same time, we would like to welcome Prof Zhihua Jiang (details below) as he becomes part of the organizing committee.

Committee chair (remains the same)



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Committee members (the new committee)

Other members	Term of service	E mail address
Zhijia Jiang (Washington State University, USA)		jiangz@wsu.edu (NEW Member)
Shannon Clarke (Ag Research, New Zealand)		Shannon.Clarke@agresearch.co.nz
Michelle Mousel (USDA, USA)		Michelle.Mousel@ARS.USDA.GOV
Heather Huson (Cornell University, USA)		hjh3@cornell.edu
George Liu (USDA, USA)		George.Liu@ARS.USDA.GOV

Laercio Porto-Neto
Ruminant Genetics and Genomics (Chair)