



ISAG . 2019

37th International Society for
Animal Genetics Conference

July 7 - 12, 2019 - Lleida, Spain



ISAG Workshop: Genome Edited Animals

Organised by a standing committee: YES NO

Meeting information

Date: Tuesday, July 9, 2019

Time: 14:30-18:00

Number of participants: ~100

Chair

Name: Bruce Whitelaw

Affiliation: University of Edinburgh

Contact email: bruce.whitelaw@roslin.ed.ac.uk

Agenda

Insert agenda

Genome Edited Animals

Chair: **Bruce Whitelaw, University of Edinburgh**
Auditorium 1

- 14:30 **Introduction.**
Bruce Whitelaw, University of Edinburgh.
- 14:45 OP128 **A genome-wide CRISPR library for high-throughput genetic screening in pig cells.**
S. Xie*, C. Zhao, H. Liu, T. Xiao, X. Cheng, X. Nie, X. Han, C. Li, X. Li, D. Zhang, and S. Zhao, *Key Laboratory of Agricultural Animal Genetics, Breeding and Reproduction of Ministry of Education & Key Lab of Swine Genetics and Breeding of Ministry of Agriculture and Rural Affairs, Huazhong Agricultural University, Wuhan, China.*
- 15:00 OP129 **Precision editing for IAV resistance in pig cells.**
Y. Du*^{1,2}, S. Lillico¹, C. Proudfoot¹, and B. Whitelaw¹, ¹*The Roslin Institute, University of Edinburgh, Edinburgh, UK*, ²*Radcliffe Department of Medicine, University of Oxford, Oxford, UK.*
- 15:15 OP130 **Programmable base editing of the goat and sheep genomes for genetic improvement.**
S. Zhou¹, G. Li¹, B. Cai¹, C. Li¹, B. Ma¹, H. Yu², B. Petersen³, T. Sonstegard⁴, X. Huang⁵, Y. Chen¹, and X. Wang*¹, ¹*Northwest A&F University, Yangling, Xianyang, China*, ²*Guilin Medical University, Guilin, China*, ³*Institute of Farm Animal Genetics, Friedrich-Loeffler-Institut, Neustadt, Germany*, ⁴*Recombinetics, Saint Paul, MN, USA*, ⁵*School of Life Science and Technology, ShanghaiTech University, Shanghai, China.*
- 15:30 OP131 **Trio-based deep sequencing reveals rare off-target mutations in Cas9-edited animals and their offspring.**
C. Li¹, S. Zhou¹, Y. Jiang¹, B. Ma¹, T. Sonstegard², X. Huang³, B. Petersen⁴, Y. Chen¹, and X. Wang*¹, ¹*Northwest A&F University, Yangling, China*, ²*Recombinetics, Saint Paul, MN, USA*, ³*School of Life Science and Technology, ShanghaiTech University, Shanghai, China*, ⁴*Institute of Farm Animal Genetics, FLI, Neustadt, Germany.*
- 15:45 OP132 **Efforts to produce genetically edited goats that carry the ovine callipyge mutation.**
T. Hadfield*¹, M. Regouski¹, C. Reichhardt¹, C. Bidwell¹, K. Thornton¹, S. Fahrenkrug², D. Webster², D. F. Carlson², I. A. Polejaeva³, and N. Cockett¹, ¹*Utah State University, Logan, UT, USA*, ²*Recombinetics Inc, St. Paul, MN, USA*, ³*Purdue University, West Lafayette, IN, USA.*
- 16:30 OP133 **Generation of pigs with a Belgian Blue mutation in *MSTN* using CRISPR/Cpf1-assisted ssODN-mediated homologous recombination.**
Y. Zou^{1,2}, Z. Li², Y. Zou³, H. Hao², J. Hu², N. Li², and Q. Li*², ¹*State Key Laboratory of Silkworm Genome Biology, Key Laboratory of Sericultural Biology and Genetic Breeding, Ministry of Agriculture, College of Biotechnology, Southwest University, Chongqing China*, ²*State Key Laboratory for Agrobiotechnology, College of Biological Sciences, China Agricultural University, Beijing China*, ³*College of Veterinary Medicine, China Agricultural University, Beijing China.*
- 16:45 OP134 **Transgene insertion site mapping in a goat TGF- β biomedical model of atrial fibrillation.**
A. J. Thomas^{1,2}, K. P. Morgado^{1,2}, M. Regouski², R. Ranjan³, I. A. Polejaeva², and C. J. Davies*^{1,2}, ¹*Center for Integrated BioSystems, Utah State University, Logan, UT, USA*, ²*Department of Animal, Dairy and Veterinary Sciences, Utah State University, Logan, UT, USA*, ³*Department of Internal Medicine, Division of Cardiovascular Medicine, University of Utah, Salt Lake City, UT, USA.*
- 17:00 OP135 **Loss of GHR in GHR knockout pig model leads to hepatic steatosis via PPAR α signaling.**
Q. Han, H. Chen, and R. Zhang*, *China Agricultural University, Beijing, China.*
- 17:15 OP136 **Transgenic chickens generating through targeting PGC with antibody-directed lentiviral.**
Z. Jiang*^{1,2}, H. Wu^{1,2}, J. Tian^{1,2}, and X. Hu^{1,2}, ¹*College of Biological Sciences, China Agricultural University, Beijing, China*, ²*State Key Laboratory of Agro-biotechnology, China Agricultural University, Beijing, China.*
- 17:30 OP137 **In vitro transfection of chicken primordial germ cells and generation of cell-chimeric chicken using the Sleeping Beauty transposon system.**
S. Altgilbers*, S. Klein, W. A. Kues, and S. Weigend, *Friedrich-Loeffler-Institut, Institute of Farm Animal Genetics, Mariensee, Neustadt, Germany.*
- 17:45 OP138 **Genome modification in chicken for therapeutic protein production.**
Y. M. Kim*, Y. H. Park, J. M. Kim, J. S. Park, H. J. Lee, K. Y. Lee, and J. Y. Han, *Department of Agricultural Biotechnology and Research Institute of Agriculture and Life Sciences, College of Agriculture and Life Sciences, Seoul National University, Seoul, Republic of Korea.*

Summary of the meeting

This Workshop has now successfully run for 4 meetings (Xi'an 2014; Salt Lake City 2016, Dublin 2017, Lleida 2019).

Throughout this time Bruce Whitelaw has chaired the Workshop, with Tad Sonstergard acting as Committee members.

Tad Sonstergard (Committee member 2016-2021) tad@recombinetics.com

Wang Xiaolong (Committee member 2016-2021) xiaolongwang@nwafu.edu.cn

At Lleida in 2019, we had 11 scheduled presentations, with speakers from 5 countries (UK, China, South Korea, Germany and USA) cover various species (pig, sheep, goat and chicken). Attended by ~100 delegates, a lively discussion accompanied most of the presentations.

During the Workshop, the chair (Bruce Whitelaw) indicated that he would stand down and asked for volunteers to take on leadership of the Workshop. Dr Wang Xiaolong was proposed and seconded, with general approval by the delegates present. Dr Tad Sonstergard agreed to stay on the Committee to assist Dr Wang Xiaolong.

Existing Chair: Bruce Whitelaw

13th February 2021

Committee chair (the new chair)

Chair: Wang Xiaolong

Term of service: 2016-2021

Affiliation: Northwest A&F Univ.

E-mail address: xiaolongwang@nwafu.edu.cn

Committee members (the new committee)

Other members	Term of service	E mail address
Tad Sonstergard	2016-2021	tad@recombinetics.com