



Joint workshop
Genetics of Immune Response and Disease Resistance
 and
Comparative MHC Genetics
 and the creation of the merged committee
Immunogenetics and Disease Response

Organised by a Standing Committee: ☒ YES NO

Meeting information

Date: 22/07/2025 (22th July 2025)

Time: 13:30 to 18:00

Number of participants: ~ 70 participants

Chair

Name: Romi PENA

Affiliation: University of Lleida, Spain

Contact email: romi.pena@udl.cat

Co-Chair (optional)

Name: Sabine HAMMER

Affiliation: Faculty of Veterinary Medicine, University of Viena

Contact email: sabine.hammer@phylo-dat.net

Agenda

1:30 to 3.00 PM – Presentation of selected communications

- 1:30 PM OP171 **Assessing immune competence phenotypes in New Zealand sheep.** Kathryn M. McRae*¹, K. G. Dodds¹, N. Haack², A. Heiser², J. Peers-Adams¹, S. Coll¹, and P. J. Johnson¹, *1AgResearch Invermay, Mosgiel, New Zealand, 2AgResearch Grasslands, Palmerston North, New Zealand.*
- 2:00 PM OP172 **Cyprinid fish species appear to be both disease resistant and infection resistant to cyprinid herpes virus type 3 (CyHV-3).** Batya Dorfman*¹, J. Marcos-Hadad¹, R. Tadmor-Levi¹, O. Liffmann¹, B. Abd Elkader¹, E. Myara¹, S. Lamichhane², B. Gorgoglione², and L. David¹, *1Dept. of Animal Sciences, R.H. Smith Faculty of Agricultural, The JIBRU Hebrew University of Jerusalem, Israel, Rehovot, Israel, 2Fish Pathobiology and Immunology Laboratory, Dept. Pathobiology and Diagnostic Investigation (CVM)/Dept. Fisheries and Wildlife (CANR), Michigan State University, East Lansing, MI, USA.*
- 2:12 PM OP176 **Validation of genetic biomarkers and immune phenotypes as indicators of the immune response to E2-CD154 subunit classical swine fever virus (CSFV) vaccine.** M. Ballester*¹, C. Hernández-Banqué¹, T. Jové-Juncà¹, O. González-Rodríguez¹, L. Coronado², L. Ganges², J. Reixach³, S. Gol³, R. Quintanilla¹, and J. Tarres¹, *1Animal breeding and genetics Program, Institute of Agrifood Research and Technology (IRTA), Caldes de Montbui, Barcelona, Spain, 2Centre de Recerca en Sanitat Animal (CRESA), Unitat Mixta d'Investigació IRTA-UAB en Sanitat Animal, Campus Universitat Autònoma de Barcelona (UAB), Barcelona, Bellaterra, Spain, 3Selección Batlle SA, Riudarenes, Spain.*
- 2:24 PM OP174 **Effect of Galectin-9 on the expression of genes involved in bovine innate and adaptive immune responses in blood.** Mulumbet Worku*, R. Uzzaman, P. Pande, and S. Ghimre, *North Carolina Agricultural and Technical State University, Greensboro, NC, USA.*
- 2:36 PM OP175 **Decoding the dynamic epigenetic landscapes of Staphylococcus aureus challenged bovine cells and enhancing the genomic selection.** Siqian Chen*, Siyuan Mi, Yue Xing, and Ying Yu, *National Engineering Laboratory for Animal Breeding, State Key Laboratory of Animal Biotech Breeding, Breeding and Reproduction of Ministry of Agriculture and Rural Affairs, College of Animal Science and Technology, China Agricultural University, Beijing 100193, China.*
- 2:48 PM OP179 **Genetic analysis of the major histocompatibility complex class I BF2 gene of Korean native chickens.** Trisha Nicole. Agulto*¹, M. Kim¹, P. Manjula², R. Fernando^{1,3}, and J. H. Lee¹, *1Chungnam National University, Daejeon, Republic of Korea, 2Uva Wellassa University, Badulla, Sri Lanka, 3University of Peradeniya, Peradeniya, Sri Lanka.*

3:00 - 3:30 PM Workshop Joint Activity.

4:00 – 4:00 PM Presentation of selected communications

- 4:00 PM OP178 **The inflammatory state and energy metabolism of porcine immune cells are closely connected.** E. Murani¹, W. Ma^{1,2}, J. Brenmoehl¹, N. Trakooljul¹, F. Hadlich¹, B. Fuchs¹, C. Galuska¹, and K. Wimmers*^{1,2}, *1Research Institute for Farm Animal Biology (FBN), 18196 Dummerstorf, Germany, 2Faculty of Agricultural and Environmental Sciences, University Rostock, 18059 Rostock, Germany.*
- 4:40 PM OP173 **Heat stress effects on the circulating microRNA profile of Iberian purebred and Duroc x Iberian crossbred weaned piglets.** Paula Aranguren-Rivas¹, Ana Heras-Molina², Emilio Gómez-Izquierdo³, Jose Gomez-Fernández³, Fabián García¹, Luca Fontanesi⁴, Cristina Óvilo¹, Juan María García-Casco^{1,5}, and María Muñoz*¹, *1Animal Breeding & Genetics Department, INIA-CSIC, Madrid, Spain, 2Animal Production*

Department, UCM, Madrid, Spain, 3Centro de Pruebas de Porcino-ITACYL, Hontalbilla (Segovia), Spain, 4Department of Agricultural and Food Sciences, Division of Animal Sciences, University of Bologna, Bologna, Italy, 5Centro de I+D en cerdo Ibérico, INIA-CSIC, Zafra (Badajoz), Spain.

- 4:52 PM OP180 **ISAG Bursary Award: Development of a blood-based transcriptional biosignature for accurate discrimination of *M. bovis* infected and control non-infected cattle.** John Francis O'Grady*¹, A. Ivich², G. P. McHugo¹, J. A. Ward¹, T. J. Hall¹, S. L. F. O'Donnell¹, C. N. Correia¹, J. A. Browne¹, M. McDonald¹, A. Khan¹, E. Gormley^{3,4}, V. Riggio^{5,6}, J. G. D. Prendergast^{5,6}, E. L. Clarke^{5,6}, H. Pausch⁷, 1UCD School of Agriculture and Food Science, University College Dublin, Belfield, Dublin, D04 V1W8, Ireland, 2Department of Biomedical Informatics, University of Colorado Anschutz Medical Campus, Aurora, CO, USA, 3UCD School of Veterinary Medicine, University College Dublin, Belfield, Dublin, D04 V1W8, Ireland, 4UCD One Health Centre, University College Dublin, Belfield, Dublin, D04 V1W8, Ireland, 5The Roslin Institute and Royal (Dick) School of Veterinary Studies, University of Edinburgh, Midlothian, EH25 9RG, UK, 6Centre for Tropical Livestock Genetics and Health (CTLGH), Roslin Institute, University of Edinburgh, Midlothian, EH25 9RG, UK, 7Animal Genomics, ETH Zurich, 8006, Zurich, Switzerland, 8UCD School of Mathematics and Statistics, University College Dublin, Belfield, Dublin, D04 V1W8, Ireland.
- 5:05 PM OP181 **Identification and validation of novel SNPs associated with BLV-induced lymphoma and proviral load using genome-wide association study.** Yoko Aida*¹, S. Watanuki¹, Y. Ye¹, F. Nagata¹, R. Matsuura¹, C. Lo¹, S. Saito¹, Y. Matsumoto¹, Y. Miyazaki², S. Sasaki³, and S. Takeshima⁴, 1Laboratory of Global Infectious Diseases Control Science, Graduate School of Agricultural and Life Sciences, The University of Tokyo, Tokyo, Japan, 2Livestock Improvement Association of Japan Inc, Gunma, Japan, 3Faculty of Agriculture, University of the Ryukyus, Okinawa, Japan, 4Department of Food and Nutrition, Jumonji University, Saitama, Japan.
- 5:17 PM OP182 **Genomic basis of the host response to the porcine respiratory disease complex.** H. Laghouaouta*^{1,2}, L. Fraile^{1,2}, and R. N. Pena^{1,2}, 1Departament de Ciència Animal, Universitat de Lleida, Lleida, Spain, 2AGROTECNIO-CERCA Center, Lleida, Spain.
- 5:30 PM OP183 **ISAG Bursary Award: Integration of CRISPR screening and proteomic analysis of WDR91 manipulation of endosome-to-cytosol transport of African swine fever virus.** Hai Long Liu*¹, Y. L. Guo², Z. S. Guo¹, G. Q. Peng², S. H. Zhao¹, and S. S. Xie¹, 1Key Laboratory of Agricultural Animal Genetics, Breeding and Reproduction of Ministry of Education & Key Laboratory of Swine Genetics and Breeding of Ministry of Agriculture and Rural Affairs, Huazhong Agricultural University, Wuhan, Hubei, China, 2State Key Laboratory of Agricultural Microbiology, College of Veterinary Medicine, Huazhong Agricultural University, Wuhan, Hubei, China.

5:45 PM **Genetics of Immune Response and Disease Resistance Business Meeting.**

Summary of the meeting

The session started with six oral presentations related mainly on phenotypes, assays and genes that could be used to characterise the immune competence of animals under different challenges or environments.

A Discussion Session followed where participants expressed their concern on the need to standardise or set some standards or recommendations on the minimal set of information needed to characterise the immunocompetence of animals. Future trends might include, for instance, how to integrate data collected by sensors on animal behaviour or physiological parameters as a source of information. Although there is a general agreement that we have well-optimised tools for genetic studies (including epigenetics, transcriptomics, etc), a efficient pipeline to extract HMC alleles from NGS data is still lacking. Finally, the



participants also acknowledge they are satisfied with the role ISAG is playing at promoting collaboration and knowledge transfer between colleagues.

After a coffee break, the workshop continued with three presentations on the crossroad between stress signals, immune response and productivity. The last four talks of this section explored the genetic basis of infectious diseases in cattle and pigs.

The workshop finished with the business meeting where the merge of the two committees, agreed in Capetown in 2023, was materialised with a new name and a renewed committee composition, which are detailed below.

Name of merged Committee: Immunogenetics and Disease Response

New Committee chair

Chair: Romi Pena
Term of service (<i>add years of first and second term of service</i>): 1 st term of service (2025-2029)
Affiliation: University of Lleida, Spain
E-mail address: romi.pena@udl.cat

New Committee co-chair (optional)

Chair: Kathryn McRae
Term of service (<i>add years of first and second term of service</i>): 1 st term of service (2025-2029)
Affiliation: AgResearch Invermay, New Zealand
E-mail address: Kathryn.mcrae@agresearch.co.nz

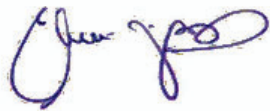
Note: One term runs for two bi-annual conferences (i.e. four years)

New Committee members

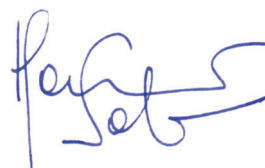
Other committee members	First term of service (from year to year)	Second term of service (from year to year)	Email address
Jim Kaufman Yale University, USA	2025-2029		jim.kaufman@yale.edu
Christa Kühn Friedrich-Loeffler-Institute, Germany	2025-2029		christa.kuehn@fli.de
Jordi Estellé INRAE, France	2025-2029		Jordi.estelle@inrae.fr
Adeniyi C Adeola <i>Kunming Institute of Zoology, China</i>	2025-2029		chadeola@yahoo.com
Ying Yu <i>China Agricultural University, China</i>	2025-2029		yuying@cau.edu.cn
Jiuzhou Song University of Maryland, USA	2025-2029		songj88@umd.edu

COMPARISON TEST (2026-2027) YES ☒ NO

SIGNATURE



Chair



Co-Chair