



# ISAG . 2019

37th International Society for  
Animal Genetics Conference

July 7 - 12, 2019 - Lleida, Spain

## Microbiomes

**Organised by a standing committee:** NO

### Meeting information

Date: Thursday 11, 2019

Time: 14:00-17:30

Number of participants: > 80

### Chair

Name: Claire ROGEL-GAILLARD

Affiliation: GABI, INRA, AgroParistech, Université Paris-Saclay, 78350 Jouy-en-Josas, France

Contact email: [claire.rogel-gaillard@inra.fr](mailto:claire.rogel-gaillard@inra.fr)

### Agenda

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|---------|--|
| 2:00 PM | Introduction.  |
| 2:05 PM | <b>O. González-Recio</b> and coll. (INIA, Madrid, Spain). A comprehensive strategy to assemble the rumen metagenome with long reads and detect high methane emitters. OP 199                             |
| 2:30 PM | <b>A. Warr</b> and coll. (The Roslin Institute, Edinburgh, UK). Going Full Circle: Assembly of high-quality, single-contig microbial genomes from the rumen microbiome using long-read sequencing. OP200 |
| 2:45 PM | <b>M. Hess</b> and coll. (AgResearch Ltd., Mosgiel, New Zealand). High-throughput metagenome sequencing for prediction of quantitative traits. OP201   |
| 3:00 PM | <b>M.L. Zingaretti</b> and coll. (CRAG, Bellaterra, Barcelona, Spain). Link-HD: a versatile integrative approach applied to across-kingdom microbial communities. OP202                                  |

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| 3:15 PM | <b>C. Esteban-Blanco</b> and coll. (University of León, Castilla y León, Spain). Metagenomic de novo assembly of <i>Corynebacterium bovis</i> in lactating assaf sheep: a preliminary study. OP203  |
| 3:15 PM | <b>P. Soma</b> and coll. (Agricultural Research Council, Animal Production, Irene, Pretoria, South Africa). Genomic surveillance of gut microbiome of Dohne merino sheep by Minlon sequencing. OP204  |
| 3:30 PM | Break   |
| 4:00 PM | <b>M. Martínez-Álvaro</b> and coll. (Instituto de Ciencia y Tecnología Animal, Universitat Politècnica de València, Valencia, Spain). Correlated responses to selection for intramuscular fat in the metagenomic profile on three gut sites in rabbits. OP205       |
| 4:15 PM | <b>N. Mach</b> and coll. (GABI, INRA, AgroParistech, Université Paris-Saclay, Jouy-en-Josas, France). Unraveling the effects of the gut microbiota composition and function on horse endurance physiology. OP206  |
| 4:30 PM | <b>M. Vázquez-Gómez</b> and coll. (Faculty of Veterinary Medicine, UCM, Madrid, Spain). Gut microbiome, birth weight and productive traits in pigs in Iberian x Duroc crossbred pigs. OP207   |
| 4:45 PM | <b>H. Arguello</b> and coll. (Animal Breeding and Genomics Group, Department of Genetics, University of Córdoba, Córdoba, Spain). Microbiome and metabolome changes occurring in early <i>Salmonella typhimurium</i> infection in pigs. OP208                       |
| 5:00 PM | <b>J. Estelle</b> and coll. (GABI, INRA, AgroParistech, Université Paris-Saclay, Jouy-en-Josas, France). The gut microbiota composition at slaughter as a potential certification tool for the Iberian pig traditional farming system. OP209                        |
| 5:15 PM | <b>J. Gorrochategui</b> and coll. (Department of Genetics, Physical Anthropology and Animal Physiology, University of the Basque Country (UPV/EHU), Leioa, Spain). Identification of microbial profiles that promote honeybee colony health. OP210. Lightening talk |
| 5:20 PM | <b>S. Marcos</b> and coll. (Department of Genetics, Physical Anthropology and Animal Physiology, University of the Basque Country (UPV/EHU), Leioa, Spain). Holofood: A holo'omic solution towards sustainable animal food production. OP211. Lightening talk       |
| 5:20 PM | Discussion  |
| 5:45 PM | End of the workshop   |

### Summary of the meeting

The workshop was co-chaired by Luca Fontanesi (Italy) and Peter Karlskov-Mortensen (Denmark).

#### General comments

- 1) The chair, co-chairs and speakers are grateful to the ISAG executive committee to have renewed the opportunity to propose a workshop on animal microbiomes during the meeting in Lleida. The first workshop was organized during the previous ISAG conference in Dublin.
- 2) The chair and co-chairs thank all speakers for excellent presentations and all attendees for their active participation during the time slots dedicated to questions and discussion.

3) The presentations included three main types of results: i) methodologies for assembling metagenomic sequences and characterizing microbiomes; ii) analysis of microbiome variabilities for assessing health and production traits; iii) use of microbiome information as potential animal survey and diagnostic tools. We also included two lightning talks presented by PhD candidates.

4) The high quality of the abstracts and presentations and the number of attendees have confirmed the relevance to consider animal microbiomes as a research field of interest for the ISAG community. In this respect, the ISAG could be expected to act as a forum for sharing resources, standardization methods and procedures. In addition, the next workshops will foresee how to report on original and front of science issues related to the covariations between host genomes, epigenomes and microbiomes (hologenomics) in a perspective of better understanding the biological steps from genomes to phenomes.

5) The standing committee will interact with scientific networks and project consortia that link animal genetics and microbiomes with the aim to encourage contributions to ISAG activities and conferences.

Discussion and decisions

1) We propose to form a new standing committee on animal microbiomes and we submit this proposal to the ISAG executive committee.

2) The name of the standing committee was discussed during the workshop. Interactions with the ISAG executive committee will be expected to decide what to name the new standing committee. There are two main suggestions that we submit to the ISAG executive committee:

- Hologenomics and animal microbiomes
- Animal genetics and microbiomes

3) Five attendees agreed to volunteer as members of the new standing committee: Melanie Hess (New Zealand), Oscar González-Recio (Spain), Peter Karlskov-Mortensen (Denmark), Jordi Estelle (France), Claire Rogel-Gaillard (France). Claire Rogel-Gaillard was elected as chair.

4) For the next workshop, the Committee members are aware that they will have to propose a program for the next ISAG meeting in 2021 by selecting oral presentations from the submitted abstracts found relevant for the workshop on microbiomes. We will propose flash talks in order for PhD candidates to briefly present their work and advertise on their posters. It would be appreciated to know in advance which abstracts are submitted by PhD candidates.

**Committee chair (the new chair)**

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| Chair: Claire ROGEL-GAILLARD   |
| Term of service: 2022 (2019-2022)  |
| Affiliation: GABI, INRA, AgroParisTech, Université Paris-Saclay, 78350 Jouy-en-Josas, France     |
| E-mail address: <a href="mailto:claire.rogel-gaillard@inra.fr">claire.rogel-gaillard@inra.fr</a> |

**Committee members** (the new committee)

| Other members            | Term of service | E mail address                |
|--------------------------|-----------------|-------------------------------|
| Melanie Hess             | 2022            | melanie.hess@agresearch.co.nz |
| Oscar González-Recio     | 2022            | gonzalez.oscar@inia.es        |
| Peter Karlskov-Mortensen | 2022            | pkm@sund.ku.dk                |
| Jordi Estelle-Fabrellas  | 2022            | jordi.estelle@inra.fr         |

**SIGNATURE**



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**Chair** Claire ROGEL-GAILLARD