Symposium questions

Knowledge

- Whilst the gut microbiota has become quite well characterised in terms of bacterial taxa by age, diet/treatments, etc., to what extent do we understand who the core and/or key members are, and their function, for optimal health and/or growth performance? Do we have robust biomarkers?
- Strength of evidence for intestinal colonisation before birth/hatch?
- Defining 'good' and 'bad' bacteria? Conflicting role of e.g. lactobacilli? Benefits are species or strain dependent?
- There have been difficulties replicating donor growth performance in recipient animals through microbiome transfer. Thoughts on the potential and way forward?
- What do we know about non-bacterial components of the microbiota?
- Key components or functions of the microbiome for gastrointestinal tract (immune) development?
- When is the microbiome most amenable to interventions?
- Importance of microbiota resilience to perturbations? How well do we understand this?
- Antibiotic growth promoters (AGPs), regarded as the gold standard of performance-enhancing feed or water additives, are sometimes associated with a degree of dysbiosis, reduced diversity, etc of the gut microbiome? How does this fit with our current understanding of a desirable microbiome and assessment of AGP alternatives?
- What are the key immune responses in the context of host(gut)-microbiome interactions? How can we manipulate these to promote health and/or productivity but limit potentially pathological consequences? Do we have robust biomarkers? Could information gained from artificial, experimental settings be misleading for commercial production?
- Which immune-related cells, and what responses, should be influenced and how?

Methodology

- Is the faecal microbiome an acceptable proxy for the 'gut' microbiome?
- Thoughts on the selection of animals (e.g. random, parameter-based, etc.), minimum number, sites (including mucosa and lumen) to be sampled and frequency to enable clear conclusions from host-microbiome studies?
- To pool or not to pool samples?
- Do we need standardised protocols?
- Guidance on moving from correlations/associations to more predictive information?
- Greater use of gnotobiotic and intestinal organoid models?

Practical

- Are we reaching the physiological limits (governing the growth performance) of pigs and poultry?

- What progress is being made in reducing the use of antibiotics on farm? What is the best way to measure usage and which products and/or strategies are proving most effective to reduce usage in practice?
- Strategies to reduce the environmental impact of livestock production?
- Traditionally, monogastric diets have evolved to help maximise the digestion and absorption of host-relevant nutrients in the small intestine. How much focus should we put on 'feeding' the gut microbiome?
- What risks do some of the 'antibiotic alternative products' have for resistance development?
- Recent developments in vaccine technologies? What are the greatest challenges and approaches to overcome these?
- How close are we to accurately manipulating host-microbiome interactions through feed composition, additives or vaccines to achieve a desired phenotype in pigs and poultry?