## Exploring Human Host-Microbiome Interactions in Health and Disease

23-25 October 2019

Wellcome Genome Campus, Hinxton, Cambridge, UK

### Conference Programme

**Wednesday, 23 October 2019**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>12:00-13:00</td>
<td>Registration with lunch</td>
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<tr>
<td>13:00-13:15</td>
<td><strong>Welcome and introduction</strong></td>
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<td><em>Programme Committee: Julian Marchesi, Imperial College London and Cardiff University, UK</em></td>
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<tr>
<td>13:15-14:15</td>
<td><strong>Keynote lecture</strong></td>
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<td></td>
<td><em>Chair: Julian Marchesi, Imperial College London and Cardiff University, UK</em></td>
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<td>Twins, microbiomes and personalised health</td>
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<td><em>Tim Spector</em></td>
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<td><em>King’s College London, UK</em></td>
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<td>14:15-15:45</td>
<td><strong>Session 1: Microbiome in early life – development and modulation</strong></td>
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<td><em>Chair: Patricia Hibberd, Boston University, USA</em></td>
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<td>14:15</td>
<td>The paediatric microbiome – opportunities for diagnostics and treatment</td>
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<td><em>Nigel Klein</em></td>
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<td><em>University College London, UK</em></td>
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<td>14:45</td>
<td>Infant gut microbiota development is shaped by perinatal experience</td>
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<td><em>Catherine Stanton</em></td>
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<td><em>Teagasc, Ireland</em></td>
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<td>15:15</td>
<td>Human placenta has no microbiome but can contain potential pathogens</td>
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<td><em>Marcus de Gaffau</em></td>
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<td><em>Cambridge University, UK</em></td>
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</table>
Preterm infants harbour diverse Klebsiella populations, including atypical species that encode and produce an array of antimicrobial resistance- and virulence-associated factors
Lesley Hoyles
Nottingham Trent University, UK

**15:45-16:15**

**Afternoon tea**

**16:15-17:45**

**Session 2: Skin microbiome**
*Chair: Reetta Satokari, University of Helsinki, Finland*

16:15 The human skin microbiome: metagenomes to therapeutics
*Julia Oh*
The Jackson Laboratory, USA

16:45 Application of microbiome science to the development of new therapies for skin health
*Cath O’Neill*
University of Manchester, UK

17:15 Staphylococcus aureus strains co-occur in atopic dermatitis and are associated with severe disease
*Helen Alexander*
King’s College London, UK

17:30 Study of the skin microbiome and the potential of topical Lactobacillus-based probiotics for chronic inflammatory skin conditions
*Lize Delanghe*
University of Antwerp, Belgium

**17:45-18:15**

**Lightning talks**
*Chair: Colin Hill, University College Cork, Ireland*

**18:15-19:45**

**Poster session 1 (odd numbers) with drinks reception**

**19:45**

**Dinner**
Thursday, 24 October 2019

09:00-10:30  **Session 3: Human microbiome in health and disease**  
*Chair: Julian Marchesi, Imperial College London and Cardiff University, UK*

09:00  **Population-based studies of the human microbiome in health and disease**  
*Lars Engstrand*  
*Karolinska Institute, Sweden*

09:30  **Can the gut microbiota act as an endogenous radiosensitiser?**  
*Anne Kiltie*  
*University of Oxford, UK*

09:45  **Development of a 3D-organoid model of methotrexate-induced mucositis**  
*Jeroen van Bergenhenegouwen*  
*Danone Nutricia Research, The Netherlands*

10:00  **Human adaptation by symbiotic bacteria is a trade-off between dispersal range and metabolic specialisation**  
*Hilary Browne*  
*Wellcome Sanger Institute, UK*

10:15  **Fecal transplantation in the treatment of Irritable Bowel Syndrome**  
*Jonna Jalanka*  
*University of Helsinki, Finland*

10:30-11:00  **Morning coffee**

11:00-12:00  **Keynote debate**  
*Chair: Colin Hill, University College Cork, Ireland*

Language, logic and numeracy in microbiome science  
*Fergus Shanahan*  
*APC Microbiome, Ireland*

12:00-13:30  **Lunch**

13:30-15:15  **Session 4: Immune influences on the microbiome**  
*Chair: Patricia Hibberd, Boston University, USA*

13:30  **Gnotobiotic mice as a powerful model for studying host-microbe interactions**  
*Jillian Waters*  
*Max Planck Institute for Developmental Biology, Germany*

14:00  **Impact of the living environment on microbe-host interaction in immune homeostasis and its dysregulation in allergy**  
*Harri Alenius*  
*University of Helsinki, Finland*
14:30 Interaction between the nasal microbiota and S. pneumoniae in the context of live-attenuated influenza vaccine
Wouter de Steenhuijsen Piters
UMC Utrecht/RIVM, The Netherlands

14:45 Impact of the gut microbiota on rotavirus vaccine response in Indian, African and European infants: a prospective cohort study
Edward Parker
London School of Hygiene and Tropical Medicine, UK

15:00 Quantitative microbiome profiling links gut microbial load to host inflammatory conditions
Verónica Lloréns Rico
VIB - KU Leuven Center for Microbiology, Belgium

15:15-15:45 Afternoon tea

15:45-17:30 Session 5: New tools and approaches for microbiome analysis
Chair: Jillian Waters, Max Planck Institute for Developmental Biology, Germany

15:45 A bioelectronic in vitro model of the microbiome-gut-brain axis
Roisin Owens
University of Cambridge, UK

16:15 Emergent behavior in a synthetic gut community
Karoline Faust
KU Leuven, Belgium

16:45 Universal patterns of dynamical variation in human intestinal microbiota
Leo Lahti
University of Turku, Finland

17:00 A new phage lysin isolated from the oral microbiome targeting Streptococcus pneumoniae
Imme van der Kamp
APC Microbiome, Ireland

17:15 Genome-wide associations of human gut microbiome variation and causal inference analyses
Rodrigo Bacigalupe
VIB-KU Leuven Center for Microbiology, Belgium

17:30-18:00 Lightning talks
Chair: Reetta Satokari, University of Helsinki, Finland

18:00-19:30 Poster session 2 (even numbers) with drinks reception

19:30 Conference dinner
Friday, 25 October 2019

09:00-10:30  
Session 6: Gut phagome and virome  
Chair: Cath O’Neill, University of Manchester, UK

09:00  
Global phylogeography and ancient evolution of the widespread human gut virus crAssphage  
Bas Dutilh  
Utrecht University, The Netherlands

09:30  
Massive-scale prediction of high-quality viral genomes sheds light on the biology and worldwide epidemiology of human gut bacteriophages  
Luis Fernando Camarillo Guerrero  
Wellcome Sanger Institute, UK

09:45  
Turning in silico data into in vivo reality – a crAssphage story  
Andrey Shkoporov  
University College Cork, Ireland

10:00  
“Viral dark matter” of the human oral cavity and gut microbiome  
Victoria Carr  
King’s College London, UK

10:15  
Long-term colonisation with donor bacteriophages following successful faecal microbial transplantation  
Lorraine Draper  
APC Microbiome Ireland, Ireland

10:30-11:00  
Morning coffee

11:00-12:00  
Keynote lecture  
Chair: Julian Marchesi, Imperial College London and Cardiff University, UK

The ecology of respiratory infections: what’s well begun is half done  
Debby Bogart  
University of Edinburgh, UK

12:00-12:15  
Closing remarks  
Programme Committee: Patricia Hibberd, Boston University, USA, and Reetta Satokari, University of Helsinki, Finland

12:15  
Take away lunch

12:30  
Coach to Heathrow airport via Stansted airport departs

12:45  
Coach to Cambridge departs