

Retreat Programme

Start (BST)	Finish (BST)	Presenter details
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Monday 17 April 2023

12:00	13:00	Registration, lunch and networking
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13:00	13:15	Welcome: Overview of scope and goals of the retreat
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Scientific Programme Committee:

*Hilary Browne, Wellcome Sanger Institute UK
Najeeha Iqbal, The Aga Khan University, Pakistan
Majdi Osman, OpenBiome, USA, Wellcome Sanger Institute and University Cambridge UK.
Caroline Tigoi, Kemri Wellcome Trust, Kenya*

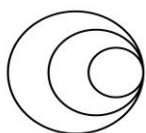
13:15	14:00	Participant Introductions - goals and challenges in microbiome research
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14:00	15:40	Session 1: The microbiome in early-life
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This session will provide background to the intestinal microbiota with a focus on early-life. Topics to be discussed include intestinal microbiota composition in early life, the factors that shape normal development and the perturbations associated with adverse health outcomes. Approaches to study the intestinal microbiota will be discussed with a focus on using metagenomic and genomic approaches to profile the microbiome in health and disease. By discussing the variables that impact the intestinal microbiota and using case studies to highlight potential therapeutic interventions, this session will provide context to the audience and start to outline the challenges and opportunities for increasing early-life microbiome research capacity.

Chairs: Hilary Browne & Ovokeraye Oduaran

14:00	14:20	First contact: exploring early life microbiota interactions and considerations for next stage clinical <i>Lindsay Hall, Technical University of Munich, Germany</i>
14:20	14:40	Early-life and Bifidobacteria: Learnings and Opportunities <i>Douwe Van Sinderen, University College Cork, Ireland</i>
14:40	15:00	Bifidobacterium infantis in the treatment of young infants with severe acute malnutrition in Bangladesh <i>Tahmeed Ahmed, icddr,b, Bangladesh</i>
15:00	15:40	Discussion Lead by Hilary Browne & Ovokeraye Oduaran
15:40	16:10	Refreshment break and networking



16:10 17:50 Session 2: Enteric diseases and the microbiome

This session will focus on malnutrition studies and enteric infections in children. The session will discuss the impact of enteric diseases on normal immunological and metabolic functioning and the subsequent effects on health outcomes and long-term childhood development. It will also discuss current targeted therapies to resolve dysbiosis and recovery from infection. By highlighting the type of studies conducted and the importance of study design in capturing disease outcomes, this session will identify and prioritise ways we can harness the intestinal microbiota to identify therapeutic interventions to treat malnutrition and enteric infections and reduce the health burden of antimicrobial resistance.

Chairs: Najeeha Iqbal & Louise Afran

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| 16:10 | 16:30 | The CHAIN Network – opportunities to understand pathways to child mortality and growth in Africa and S. Asia
<i>James Berkley, University of Oxford, UK</i> |
| 16:30 | 16:50 | Mesentery-microbiota crosstalk following gut infection and nutrient restriction
<i>Denise Fonseca, University of Sao Paulo - Institute of Biomedical Sciences, Brazil</i> |
| 16:50 | 17:10 | Drug-Resistant Enteric pathogens in Africa and the Microbiome management option
<i>Samuel Kariuki, Kenya Medical Research Institute, Kenya</i> |
| 17:10 | 17:50 | Discussion Lead by Najeeha Iqbal & Louise Afran |

17:50 18:00 Comfort break

18:00 18:50 Keynote Lecture

Introduced and chaired by Bonface Gichuki

Our Washington University-icddr,b partnership and the development of microbiome-directed therapeutics for undernutrition

Jeff Gordon, Washington University School of Medicine, USA

19:00 21:00 Dinner

19:00 Bar open (card payments only)

Tuesday 18 April 2023

07:30 09:00 Breakfast

09:00 10:40 Session 3: Diet and Maternal Health

Session 3 will discuss the importance of diet and maternal health in early-life intestinal microbiota development. Topics to be discussed include the role of breastmilk in promoting growth of beneficial bacteria and resistance to pathogens, and how birth mode and maternal health status can influence long-term infant health. Approaches to modulate the intestinal microbiota through dietary supplementation such as prebiotics will be discussed as will the design of clinical trials appropriate to different geographical settings. The session will also cover how we can identify priority research questions and evaluate interventions through well-designed studies that lead to measurable improved health outcomes.

Chairs: James Njunge and Rhona Baingana

09:00 09:20 Milk & Microbes in the Canadian CHILD Cohort: How Breastfeeding Supports Infant Microbiome Development and Health (... and how this research sparked the new International Milk Composition Consortium)
Meghan Azad, University of Manitoba, Canada

09:20 09:40 Building maternal and newborn research capacity for microbiome science in Sub-Saharan Africa; a case study from a busy maternity consortium in Uganda
Annetee Nakimuli, Makerere University, Uganda

09:40 10:00 Building an enabling microbiome research environment in a developing context: challenges and success stories from Burkina Faso
Laetitia Celine Toe, IRSS-DRO, Burkina Faso / Ugent, Belgium

10:00 10:40 **Discussion Lead by James Njunge and Rhona Baingana**

10:40 11:10 Refreshment break and networking

11:10 12:50 Session 4: Translating microbiome research

This session will focus on translating microbiome research into tangible benefits for improving child health outcomes. The session will dive into the development of new interventions for child health (e.g. microbiome-directed foods and probiotics) based on the scientific advances discussed earlier in the meeting. Participants will discuss their ongoing efforts to translate microbiome science into real-world benefits, and the barriers to translation will be explored. Themes that we aim to cover in the session will include identifying and prioritising target indications for microbiome-based interventions, developing product profiles, clinical development (including clinical trial design), regulatory considerations, community engagement, and stakeholder involvement (including the private sector) to enable the successful translation of microbiome research into health benefits in African, South Asian and South American settings.

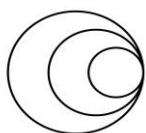
Chairs: Majdi Osman & Arox Kaming'ona

11:10 11:30 Maternal Microbiome directed Interventions to Improve Pregnancy and Infant Outcomes in LMIC Geographies
Vanessa Ridaura, Bill and Melinda Gates Foundation, USA

11:30 11:50 Overview of Wellcome's new Infectious Disease strategy
Ana Cehovin, Wellcome, UK

11:50 12:10 Building Capacity for microbiome research in Africa
Billo Tall, Institut Pasteur de Dakar, Senegal

12:10 12:50 **Discussion Lead by Majdi Osman & Arox Kaming'ona**



12:50 14:00 Lunch

14:00 16:00 Session 5: Capacity Sharing for Microbiome Research

This session will focus on capacity sharing for microbiome research in different geographical settings. Microbiome research is interdisciplinary and requires collaboration, integration of skills and sharing of best practice across many areas, including microbiology and bioinformatics. There is need for knowledge exchange between scientists working on different microbiomes, such as those in humans, animals, and the environment. This session will focus on support for infrastructure development and training for researchers to perform cutting edge microbiome analysis and interpretation of results generated, in a reproducible manner in different settings.

Chairs: Caroline Tigoi & Judd Walson

14:00 14:20 Generating of Large Scale Genomic Resources from LMIC and Training of Future Local Leaders
Trevor Lawley, Wellcome Sanger Institute UK

14:20 14:40 The best bang for your buck. Capacity building and training for Microbiome research in Latin America
Alejandro Reyes, Universidad de los Andes, Colombia

14:40 15:00 Capacity building for microbiome research
Faisal Fadlemola, Kush Centre for Genomics & Biomedical Informatics, Sudan

15:00 15:20 Illumina's partnerships in building genomics capacity in LMICs
Amadou Gueye, Illumina, UK

15:20 15:40 Global Microbiome Conservancy: Building and sharing a representative microbiome resource through global partnerships
Julie O' Brien, OpenBiome, USA

15:40 16:20 **Discussion Lead by Caroline Tigoi & Judd Walson**

16:20 16:40 Refreshment break and networking

16:40 18:10 Session 6: Outputs/paper from the retreat/ collaborations/network formation

Chairs: Hilary Browne, Najeeha Iqbal, Majdi Osman, Caroline Tigoi

18:10 18:30 Comfort break

18:30 19:00 Retreat summary

Scientific Programme Committee:

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Majdi Osman, OpenBiome, USA, Wellcome Sanger Institute and University Cambridge, UK

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19:00 21:00 Dinner

19:00 Bar open (card payments only)

Wednesday 19 April 2023

07:30 09:00 Breakfast and departures