Collegium Helveticum
Swiss Institute for Advanced Study

Workshop

Manipulating Microbiomes
Microbiota-based Interventions for Pathogen Control

September 18, 2024, 9:00–17:45
Meridian Hall, Collegium Helveticum

Organized by

Georgia Drew
Early-Career Fellow 2023–2024

Details

Venue & accessibility info: Meridian Hall, Collegium Helveticum

Please register here. Participation is free of charge

Conventional strategies to control pathogens have been weakening. In clinical settings, faecal microbiota transplants are now being used to treat patients with resistant gut infections. For vector control, symbiotic microbes are utilised to block the transmission of pathogens such as Dengue virus. But what are the implications–from the evolutionary to the ethical–of manipulating host microbiota?

The event will bring together workers from different disciplines and systems to discuss the approaches and potential consequences of microbiota-based interventions for pathogen control. Join us for a day of talks and discussions.

Program

09:00
Arrival to the venue

09:15
Opening & welcome remarks

Sebastian Bonhoeffer
Collegium Helveticum

09:25
The Power and Consequences of Harnessing Protective Symbioses

Georgia Drew
Collegium Helveticum & Eawag, CH

09:50
Session I
Applying Protective Microbes for Growing Disease Threats

Engineering Defined Bacterial Consortia Based on Trophic Interactions

Gabriel Leventhal
Pharmabiome, CH

Advances in the Development of a Microsporidia MB Endosymbiont-Based Plasmodium Transmission Blocking Strategy

Jeremy Herren
International Centre of Insect Physiology and Ecology, KE

European Medicines Agency (EMA) Perspective on Non-traditional Medicinal Products to Tackle Antimicrobial Resistance

Marco Cavaleri
European Medicines Agency, EU

12:15
Lunch break

13:45
Session II
Potential Implications of Microbiota-Based Interventions

Endosymbionts in Biological Control
Problems, Solutions, and the Question of Robustness to Evolution

Christoph Vorburger
Eawag & ETH Zurich, CH

From Worms to Edible Insects
Defensive Microbes and Their (Co)Evolutionary and Ecological Implications

Charlotte Rafaluk-Mohr
Freie University Berlin, DE

The Influence of the Gut Microbiota on Honeybee Cognition, Social Behavior, and Behavioral Maturation

Joanito Liberti
University of Geneva, CH

15:35
Coffee break

15:50
Session III
Mechanistic Insights and Interactions with Host Immune Systems

Tracking Real-Time Interactions of Pseudomonas Aeruginosa with Co-infecting Pathogens in the Host Model Zebrafish

Daniela Rovito
University of Zurich, CH

The Role of Early-Life Diet, Gut Microbes, and Microbial Metabolites in Allergy Prevention in Children

Remo Frei
Bern University Hospital, CH

16:55
Open discussion

17:15
Closing remarks

followed by a small reception