

## **Working Group 6**

### **How do probiotics and prebiotics work at distant sites?**

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Overview of what we would like to discuss.

- Some of the most exciting applications of probiotics and prebiotics are to metabolic disease and brain functions. We will discuss some of the mechanisms, their level of evidence, and the extent to which early life programming influences how the gut microbiota communicates with distant sites. Experts:
  - Laure Bindels, Belgium – probiotics and prebiotics in metabolic disease
  - Michael Bailey, Ohio State University – influence of prebiotics on brain.
  - Kriston Ganguli, Harvard University, USA - mechanistic work on the metabolites and the premature gut.
  - Rostyslav Bubnov, National Academy of Sciences of Ukraine – probiotics and immunity in relation to metabolic disease and allergy
  
- Probiotics and perhaps prebiotics are unlikely to be administered directly to certain areas of the body, such as the lung, skin, liver and heart, yet when given orally they have an impact. How does this happen? If prebiotics were applied, how would this be done? Experts:
  - Mike Surette, McMaster University, Canada – probiotics for lungs
  - Thomas Abrahamsson, Linköping University, Sweden, systemic allergic responses
  - Catherine O'Neill, University of Manchester, UK - skin microbiome and probiotics.
  - Kieran Tuohy, IASMA Research and Innovation Centre, Italy – prebiotics and heart health