

# Lecture Series & Workshops 2019-2021

From Single Organisms to Systems Ecology and Evolution

## Population-level microbiome monitoring - the Flemish Gut Flora project

**Dr. Rodrigo BACIGALUPE**

Raes lab

VIB-KU Leuven Center for Microbiology

- 5<sup>th</sup> of February 2020, 12 PM
- Campus Belval, Maison du Savoir; Amphi 3.510

For individual afternoon meetings with Dr. Bacigalupe, please **register** by mail to [secretary@microbiology.lu](mailto:secretary@microbiology.lu).

Alterations in the gut microbiota have been linked to various pathologies, ranging from inflammatory bowel disease and diabetes to cancer. Although large numbers of clinical studies aiming at microbiome-based disease markers are currently being performed, our basic knowledge about the normal variability of the human intestinal microbiota and its determining factors remains limited. Here, I will discuss our findings studying a large-scale study (Flemish Gut Flora Project; n=3400) of the gut microbiome variation in a geographically confined region (Flanders, Belgium), in which analysis of microbiome variability in health identified the primary parameters associated to microbiome composition. In this presentation, I will discuss our experiences in large-scale microbiome monitoring, show how the development of dedicated computational approaches can assist in microbiome analysis and interpretation, and which confounders are essential for inclusion in microbiome disease research. Finally, I will show how microbiome genome-wide association studies, which combine human genetic and microbiome data, can identify host genetic variation linked with microbiome variation.

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