



Master's Thesis Position Available

(Departments 140a and 140d)

Impact of Meat Consumption on the Microbiome

Background

As part of a project investigating the health effects of consuming white and red meat from different production systems (conventional vs. pasture-based), a feeding trial was conducted with mice. Dietary influences on gut microbiota were assessed via 16S rRNA sequencing of fecal samples.

Thesis Objective

The Master's thesis will focus on bioinformatic analysis of this 16S data. The goal is to identify differences in diversity and microbial composition between experimental groups and interpret these in the context of meat type and origin.

Tasks

- Quality control and processing of sequencing data
- Generation of OTU/ASV tables (e.g., using DADA2 or QIIME2)
- Alpha and beta diversity analyses
- Statistical testing for significant group differences (e.g., mixed-effects models)
- Biological interpretation and visualization of results (in R)

Requirements

- Interest in microbiome research, nutrition & bioinformatics
- Basic experience with microbiome analyses (e.g., from the "Nutrigenomics" module by Prof. Fricke)
- Foundational R programming skills
- Independent and structured work approach

Bioinformatic analysis will be jointly supervised by the Fricke and Giller research groups, with thesis writing supervision by the Giller group. Data for analysis is already available. The thesis can commence immediately or by arrangement and is generally suitable for remote work.

Please submit a brief motivation letter and overview of relevant coursework/experience to Prof. Dr. Katrin Giller: katrin.giller@uni-hohenheim.de