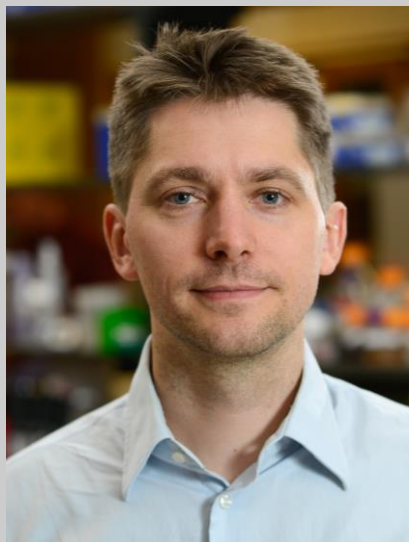




Manuel Kleiner



Assistant Professor in  
Microbiomes and Complex  
Microbial Communities

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### Functional interactions in host-microbe systems

**Research emphasis:**

His research focuses on metabolism, physiology and functional interactions in host-microbe systems. His lab is at the forefront of developing novel tools and approaches to study host-microbe interactions. In particular, Dr. Kleiner and his team develop metaproteomic approaches, which use high-end mass spectrometry to identify and quantify tens of thousands of host and microbial proteins in microbiota samples. He applies these tools to establish links between specific dietary components and the microbial metabolizers in the intestinal tract that consume them, as well as to study the fate of dietary protein from different sources in the intestinal tract and its impact on the intestinal microbiota.

**Selected publications:**

Kleiner, M. (2019). Metaproteomics: Much more than measuring gene expression in microbial communities. *mSystems* 4(3): e00115-19.

Hinzke, T., A. Kouris, R.-A. Hughes, M. Strous and M. Kleiner (2019). More is not always better: Evaluation of 1D and 2D-LC-MS/MS methods for metaproteomics. *Frontiers in Microbiology* 10(238).

Duerkop, B. A., M. Kleiner, D. Paez-Espino, W. Zhu, B. Hassell, S. E. Winter, N. C. Kyrpides and L. V. Hooper (2018). Murine colitis reveals a disease-associated bacteriophage community. *Nature Microbiology* 3: 1023–1031.

**Application:**

- Interactions between diet and intestinal microbiota
- Host-microbiota interactions

**Collaboration potential:**

- Proteomics and Metaproteomics
- Metagenomics
- Defined microbial communities for gnotobiotic animals