

# Postdoc Position in Intestinal Microbial Ecology

Department of Microbial Ecology ([www.microbial-ecology.net](http://www.microbial-ecology.net)),  
Faculty of Life Sciences, University of Vienna

A postdoc PhD position is available within the Vienna Science and Technology Fund (WWTF) project “**Nutrition and the intestinal microbiota-host symbiosis: A holistic stable isotope-labeling approach to decipher key microbial players and quantitatively link single cell activity to system function**”

The symbiotic intestinal microbiota is a fundamental part of the animal and human body, with manifold implications for host nutrition, health, and disease. The composition and metabolic capacity of an individual's intestinal microbiota has a significant impact on the nutritional value of food and the amount of extractable energy through provision of short chain fatty acids to the intestinal epithelial cells. Genomic and postgenomic studies have revealed exciting insights into the diet-mediated metabolic potential of intestinal microorganisms in animals and humans. However, the physiological network of cooperation and competition among the various members of the diverse intestinal microbiota that determine the amounts of individual short chain fatty acids available to host cells are far from being completely understood. This project aims at closing this gap by establishing a novel approach to decipher the metabolic interplay between microbial and host cells in the harvest of dietary energy. The carbon-driven intestinal food chain will be elucidated with high-resolution by integrating experiments with mice harboring a natural, full-complexity microbiota or defined, low-complexity assemblages of known microorganisms in their intestinal tracts, in vitro and in vivo isotope-labeling, molecular biology methods, and cutting-edge single cells analyses. A deeper understanding of the intestinal microbial ecology of dietary carbon degradation will be gained by unraveling (i) key microorganisms that modify intestinal function in vivo, (ii) the physiological heterogeneity among individual cells of target populations, and (iii) the synergistic and antagonistic metabolic relationships between microbial and host cells.

**Required qualifications.** We are looking for highly motivated and independently working scientists with interest in collaborative & applied microbial ecology research. Applicants should have a strong conceptual and practical background on the application of molecular and isotope-labelling techniques for characterizing the identity and ecophysiology of microbial community members. Experience in one or more of the following areas/techniques will be of advantage: intestinal microbiology, rRNA amplicon pyrosequencing, genomics, bioinformatics, stable isotope probing of uncultivated microbes, isotope analytics, and cultivation of anaerobic microorganisms. Proficiency in spoken and written English is mandatory.

**Conditions of appointment.** We offer up to 3 years of appointment as a postdoctoral scientist according to the salary scheme of the University of Vienna. The University of Vienna is an equal opportunity employer.

**Mode of application.** To apply, please **send an email** (subject: **Postdoc WWTF**) to Alexander Loy, [loy@microbial-ecology.net](mailto:loy@microbial-ecology.net) or David Berry, [berry@microbial-ecology.net](mailto:berry@microbial-ecology.net) containing a **single pdf-file** with a **short letter of motivation**, a **detailed CV** (including a brief description of research interests, previous employments, and publication list), **reprints of your two most important published articles**, and **contact details of at least two references** (letters of recommendation are optional).

**Application deadline** is 1. April 2013.

**Job start** is Summer 2013.