

Postdoc and PhD Positions in Microbial Ecology and Evolution

Division of Microbial Ecology (www.microbial-ecology.net)
Department of Microbiology and Ecosystem Science
University of Vienna

A postdoc and a PhD position are available as part of the Austrian Science Foundation (FWF) funded project:

**“Interplay of ecology and evolution in the gut microbiota:
A case study of polysaccharide-degrading *Bacteroides*”**

The human intestine harbors a rich microbial ecosystem with a tremendous number and density of microorganisms collectively referred to as the gut microbiota. These organisms perform important services such as breakdown of refractory dietary polysaccharides and production of vitamins. The gut microbiota of each person has a distinct composition that is relatively stable over time, but how the microbiota is assembled is not well understood. This project explores how the assembly and interactions of the gut microbiota are affected by rapid evolution of microbial populations due to competition for niche space. Co-evolution can occur on ecologically meaningful time scales, and the resulting adaptation can fine-tune populations to their environment and to other populations. The resulting community is thus shaped by the interplay of ecological and evolutionary processes, which can affect community-level properties such as ecosystem productivity, stability, and invasibility by other microbes (pathogens or commensals).

This idea and specific questions related to it will be addressed using an experimental evolution approach that explores a key process in the gut: polysaccharide degradation by members of the genus *Bacteroides*. Fundamental questions will be addressed about adaptation, diversification, and community assembly under controlled environments with well-defined niche spaces. Results from model systems will be complemented by study of real gut microbial communities with stable isotope probing. These studies will provide a picture of the interplay of ecological and evolutionary processes in the gut microbiota and refine our conceptual understanding of how microbial communities assemble.

Required and preferred qualifications. We are looking for highly motivated and independent scientists interested in microbial ecology and evolution. Applicants should have a strong background in gut microbiology, environmental microbiology, or microbial evolution. Experience in one or more of the following areas/techniques is advantageous: intestinal microbiology, cultivation of anaerobic microorganisms, genomics, bioinformatics, stable isotope probing, and isotope analytics. Proficiency in spoken and written English is mandatory.

Conditions of appointment. We offer up to 3 years of appointment 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** to David Berry, 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** (for postdoc position), and **contact details of at least two references** (letters of recommendation are optional).

Application deadline is 15. May 2015.

Job start is Summer 2015.