Title: **Biochemistry of important gut prokaryotes**

Abstract:
The human gut microbiota has been proposed as a crucial factor that plays a major role in host physiology. Increasing evidence indicates the impact of changes in the composition of the human gut prokaryotes on host metabolism and a variety of diseases. To estimate and judge the influence and importance of microbes in the human gut a comprehensive understanding of their physiology and metabolism, especially their mode of energy conservation, is necessary. Two of these gut microbes are in the focus of this talk. 1. *Prevotella copri* is one of the main players in the human gut The Human Microbiome Project has revealed samples of humans that contained up to 80 % *P. copri* thereby displaying an intestinal fermentation almost fully executed by a single organism. Furthermore, these samples showed a significant reduction of bacteria which are generally described as beneficial for their host. Data on the central metabolism and the respiratory chain of *P. copri* will be presented. 2. *Methanomassiliicoccus luminyensis* is discussed in the context of the so-called "Archaebiotics". These therapeutic agents were proposed as a treatment for patients suffering from "fish odor syndrome". The metabolism of *M. luminyensis* is unique from other methanogenic archaea. Evidence will be presented that this organism is a hybrid of the common methanogenic groups with respect to its mode of energy conservation.