

Sommersemester / *Summer Term 2012*

## BayCEER Kolloquium

Vortragsreihe Ökologie und Umweltforschung  
*Lectures in Ecology and Environmental Research***Donnerstag 25.04.2013, 17:00 Uhr, H12**

Anschließend Postkolloquium mit Bier und Brezeln im Foyer H12

### Dr. Laurent Philippot

Director of Research, INRA - French National Institute for Agricultural  
Research, Dijon, France

### **Bridging microbial community ecology and ecosystem functioning: example with a N-cycling microbial guild**

Microbial communities have a central role in many ecosystem functions such as biogeochemical cycling, filtering and climate regulation. This talk will highlight how trait-based approaches can help understanding the role of microbial diversity in ecosystem functioning. For this purpose, denitrification, a microbial process involved in N-cycling, was selected as a model functional trait. Denitrification is a microbial respiratory process during which soluble nitrogen oxides are used as alternative electron acceptor when oxygen is limiting. It is involved in ecosystem services such as filtering but also disservices. Thus, denitrification can result in considerable losses of nitrogen, which is the most limiting nutrient for crop production in agriculture. It is also responsible for emissions of nitrous oxide, one of the six greenhouse gases considered by the Kyoto protocol. In addition to natural variations, agroecosystems are characterized by the use of numerous practices, such as fertilization and tillage, which influence N-fluxes by denitrification. This has been widely documented in the literature, mirroring the complexity of the underlying mechanisms regulating this process. However, in the last decade application of molecular biology approaches has given the opportunity to look beyond denitrification rates and study the ecology of the microorganisms involved in this process, the denitrifying community.

Examples will be provided on how this microbial guild can be used as a model for bridging microbial community ecology, microbial processes and ecosystem functioning.

Do. / Thu. 17 st  
Gebäude / Building  
NW I  
Hörsaal / Lect. hall  
H12

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