

BayCEER Kolloquium

Lectures in Ecology and
Environmental Research

Summer 2018



UNIVERSITÄT
BAYREUTH

Thursday

21.06.2018

12:00 in H6, GEO

Dr. Vincent Merckx

Understanding Evolution Group,
Naturalis Biodiversity Center, Leiden,
The Netherlands

The tangled evolutionary history of plants and fungi

Land plants and fungi have coevolved for over 500 million years, and showcase a myriad of interdependencies. Among these, the interaction between plants and root-associated mycorrhizal fungi is one of the most ancient, abundant, and ecologically important mutualisms on earth. Plants supply their mycorrhizal fungi with carbohydrates, essential for fungal survival and growth. In return, the fungi provide their host plants with mineral nutrients and water from the soil. This ancient mutualism enables massive global nutrient transfer and critical carbon sequestration. Despite their importance, we know little about the evolution of these complex underground interactions. Here I focus on how the interplay of evolutionary and ecological processes structure mycorrhizal interactions. Topics include the deep evolutionary dynamics of the mycorrhizal mutualism, the ecophylogenetics of mycorrhizal interactions, and the evolutionary pathways to the breakdown of the mutualism. The presented results highlight the importance of an evolutionary framework to understand the dynamics of mycorrhizal interactions.