

# Geomicrobiological and Geochemical Colloquium seminar series

November 07<sup>th</sup> 2023 – 3 PM



## Microbiomes in Agricultural Ecosystems – Their Roles for a Sustainable Land Use

Prof. Dr. Steffen Kolb  
Leibniz Center for Agricultural Landscape Research (ZALF),  
Müncheberg, Germany

In person: A71 seminar room 513/515

### Abstract

Agricultural ecosystems in central Europe are impacted by the societal decisions made and practices applied in land use. About 50% of the land surface of Germany are grass- and croplands. Soils contain a huge and complex biodiversity of microorganisms that interacts with other soil life and plants - the microbiome. Soil microbiomes are fundamental for ecosystem functions that include greenhouse gas sink and source functions, and nutrient cycling. The latter is the basis for plant productivity. I will present recent research from my group Microbial Biogeochemistry at ZALF (Leibniz Center for Agricultural Landscape Research) and will give insights into two recent research topics that are linked to land management and land use intensity in plant production: (a) The role of microbiomes for the methane sink in managed temperate grasslands and (b) microbiomes' adaption to nitrogen input and productivity in cereal cropping systems.



# GFZ

Helmholtz-Zentrum  
POTSDAM

HELMHOLTZ CENTRE POTSDAM  
GFZ GERMAN RESEARCH CENTRE  
FOR GEOSCIENCES