

## Master thesis

### **Identification of activity markers for anaerobic fungi (*Neocallimastigomycota*) - developing new molecular biological tools to screen fungal activity in environmental samples**

The Bavarian State Research Center for Agriculture (LfL) and the Technical University of Munich in Freising are looking for a Master's student to work on the identification of anaerobic fungal activity markers. The work will be part of the international project "Unleashing the hidden potential of anaerobic fungi (*Neocallimastigomycota*)". Participating in this project will provide you with interesting insights in the cellulolytic machinery of anaerobic fungi, their cultivation, their phylogeny, as well as training in molecular biological techniques (e.g. nucleic acid extraction methods, primer and probe development, qPCR and DNA sequencing).

The planned Master thesis will contain the following work packages:

- 1) Search for literature and databases on potential activity markers such as cellulolytic genes and ribosomal pre-cursors.
- 2) Primer design and qPCR assay development.
- 3) Evaluation of anaerobic fungal specific activity markers for the screening of environmental samples.

#### Requirements

- 1) High interest on molecular biology and genetics
- 2) Experience with PCR and possibly Real-Time quantitative PCR
- 3) Experience in working with RNA is of advantage
- 4) Knowledge on anaerobic fungi is of advantage

Potential starting date: January 2021

The work for this thesis will be conducted at the Micro- and Molecular Biology Laboratory at the Central Department for Quality Assurance and Analytics (AQU) at the Bavarian State Research Center for Agriculture (LfL) in Freising and supervised by Dr. Veronika Flad from the LfL and Dr. Christian Wurzbacher from the TUM Chair of Urban Water Systems Engineering in Garching.

If you are interested please send your application (short CV and letter stating your interest and experience) as PDF to M.Sc. Diana Young (diana.young@lfl.bayern.de).