

# DECrypT Workshop

## Ecological Microbiome Studies

### 5-7 October 2022, Tübingen



**Venue:** [Geo- und Umweltforschungszentrum \(GUZ\)](#), Schnarrenbergstrasse 94-96, room 3U03.  
(Bus 5/13/17/18 to “BG Unfallklinik”)

**Accommodation:** [Konzept Hotel Neue Horizonte](#), Horemer 16.  
(Bus 5 to “Horemer” or bus 3 to “Maria-von-Linden-Strasse”)

#### 4 October

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Arrival & hotel check-in

20:00 Get-together at [Faros](#), [400 m from hotel](#) (optional)

#### 5 October

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08:30 Room open, with coffee & croissants

09:00 **Welcome & introduction**

What are ecological plant-microbiome studies?

Getting to know each other

10:00 **Amplicon sequencing data**

Setting up OTU/ASV tables/metadata.

Evaluating data quality.

Jupyter/Google colabs notebooks

Short intro to R

12:30 Lunch

13:30 **Analyzing microbial community data I**

R packages for microbiome analyses; normalizing data

Simple stats: comparing samples, diversity metrics, etc.

15:30 Coffee & cake

16:00 **Analyzing microbial community data II**

Analysing & visualising networks

Network statistics, hubs, etc.

18:00 End

19:30 Dinner at [An An](#), Aixer Strasse 46 (Bus 13 to “Aixer Strasse”)

## 6 October

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- 08:30 Room open, with coffee & croissants
- 09:00 **Analyzing microbial community data III**  
Network statistics, hubs, etc. continued  
Using machine learning to understand microbial communities
- 12:00 Lunch
- 13:00 **Analyzing inoculation studies I**  
Basic logic of GLM  
Environmental influences  
Plant species/genotype effects
- 15:00 Coffee & cake
- 15:30 **Analyzing inoculation studies II**  
G x E interactions  
Visualizing multifactorial results
- 17:00 Group work – connect with own project(s)
- 18:00 End
- 19:30 Dinner at [Die Wurstküche](#), Am Lustnauer Tor 8 (Bus stop „Nonnenhaus“)

## 7 October

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- 08:30 Room open, with coffee & croissants
- 09:00 Group work – connect with own project(s)
- 10:00 **Analyzing inoculation studies III**  
Functional biodiversity  
Analysing microbial diversity experiments
- 12:00 Farewell

### Some additional infos:

- Bring your laptop, and have [R](#) and [RStudio](#) installed on it.
- From the hotel to the venue it is a [nice half-hour morning/evening walk](#). Alternatively, take bus 5 from “Horemmer” to “BG Unfallklinik” (six stops; every 15 minutes).
- During the workshop, we provide lunch and coffee/cake. We also pay for the two dinners.
- As the hotel does not offer breakfast, we bring coffee, pastries and fruits in the mornings. You can also stop at [Bäcker Meyer](#) in the morning (bus stop “Wanne Kunsthalle”).
- The get-together on Tuesday evening is optional, and you need to pay yourself. It is just a possibility to hang out.