



PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

**Open PhD Position at Freie Universität Berlin,
offered only to Chinese CSC scholarship candidates 2024**

Department/Institute: | Institute for Animal Hygiene and Environmental Health |

Subject area: | Microbiology |

Name of Supervisor: | Prof. Dr. Uwe Rösler |

Number of open PhD positions: | 1 |

Type of the PhD Study: | Full-time only |

Project title: | Impact of wood compounds on disinfection of adhering
bacteria |

PhD Project description:

Wood is a desirable material in animal stable construction due to its renewability and is used for stable construction worldwide. However, the biological nature of wood poses challenges for maintaining hygiene standards in animal husbandry. As a result, the use of wood in stable construction has been controversial in the past. During our recent work on disinfection of bacterial contamination of wood surfaces, we found that effective disinfection of wood surfaces is possible in principle. However, disinfection is much more effective when the bacterial contamination is present as planktonic (non-adherent) cells, rather than as biofilms. As biofilms in stables are likely to be complex multi-species communities, we anticipate even higher disinfection resistance in practice. Our data show that the choice of wood makes a material contribution to keeping bacterial growth in check, with certain woods being substantially easier to disinfect, likely due to soluble components in the wood. We therefore aim to identify the soluble components that convey antimicrobial effects to these wood types and to analyse their impact on bacterial contamination. Furthermore, the longevity of this effect will be of great interest in a construction context. We hope to identify microbial community composition in wood-adherent biofilms in situ in animal stables to enable a deeper understanding of the interaction between different woods and disinfectants. A candidate on this project will be involved with techniques ranging from analytical biochemistry and genomics to classic microbiology and biofilm assays with an applied focus.

Language requirements:

- IELTS: 6,5 or TOEFL: 95 ibt

Academic requirements:

Bachelor or Master degree (Master preferred) in biology, microbiology, biochemistry, or a related field. Alternatively, a degree in veterinary medicine with experience in microbiology.

Information of the professor or research group leader (website, awards etc.):

Prof. Dr. Uwe Rösler, DVM, Dipl. ECVM, Dipl. ECVPH; Managing Director of the Institute for Animal Hygiene and Environmental Health; Dean of the School of Veterinary Medicine of FUB; Deputy Head of FAO RC AMR of FUB Berlin; Ellenberger Prize for the best doctoral thesis in veterinary medicine at the University of Leipzig in 2002, Stockmeyer Science Prize in 2007. Website:

https://www.vetmed.fu-berlin.de/einrichtungen/institute/we10/mitarbeiter/roesler_uwe/index.html

Please Note: In a first step, the complete application should be uploaded to the [online portal](https://fuberlin.moveon4.de/form/60acfece5d328710e40bdbd5/eng) (<https://fuberlin.moveon4.de/form/60acfece5d328710e40bdbd5/eng>) for evaluation by January 15th, 2024. Please do not contact the professor before. He/she will get in contact with you after having received the complete application via the International Office of Freie Universität Berlin in January.