



Open PhD position: Analysis of host-pathogen interactions through single-cell RNA sequencing

We have one open PhD position as part of the Manchot Graduate School Molecules of Infection IV (MOI-IV). MOI IV offers an innovative, structured training and research program in a both stimulating and interdisciplinary field of medicine and biology. Highly motivated and excellent candidates holding a MSc degree in bioinformatics, computational biology, biochemistry or related subjects are strongly encouraged to apply. The PhD position is located at Heinrich-Heine-University Düsseldorf. Supervising Investigator is Prof. Dr. Alexander Dilthey, Institut für Medizinische Mikrobiologie und Krankenhaushygiene, UKD.

Aim of the project: To characterize host cell invasion and host-pathogen interactions of *Toxoplasma gondii* and *Chlamydia trachomatis* at high resolution using scRNA-seq; to better characterize the kinetics of host defense mechanisms and the strategies employed by the pathogens to overcome these; and to integrate scRNA-seq data with existing functional data on e.g. the GBP effector molecules.

For further information and detailed project descriptions please visit our website:
<https://www.moi.hhu.de/en/open-positions>.

Qualification profile:

- Master's degree in Bioinformatics, Computational Biology, Biology, Biochemistry, medical Biology or comparable
- Proven skills in the areas of biological data science, computational biology, computer programming, or biological statistics
- Knowledge in the field of infection research
- Good communication and presentation skills
- Good team spirit, motivation and an independence work organisation

We offer:

The scholarship comprises inter alia a monthly allowance of 1,900 € over a period of 3.5 years as well as a budget for material expenses and financial support for the attendance of national and international conferences and for a temporary stay abroad.

The dissertation projects are cross-linked both in content and methodology. Within the scope of the **MOI-IV** qualification program, lectures, seminars and a lab rotation will provide the PhD



students with thorough insight into the infection biology of the three big pathogen groups of viruses, bacteria and fungi/protozoa as well as into the host's immune response. In the course of the study program, the students will be enabled to acquire extensive professional key competences. A temporary stay abroad is an integral part of each dissertation project. Yearly MOI symposia offer a platform for presenting own research results and intensive scientific exchange. An international scientific advisory board accompanies **MOI-IV** and supports the PhD students during their projects.

The Heinrich-Heine-University with more than 34,000 students forms the core of the university town Düsseldorf. As a full university with its five faculties law, economics, humanities, medicine, and mathematics & natural sciences, the HHU promotes close interdisciplinary cooperation on the regional, national and international scale. The HHU has, already for the third time, been awarded with the certificate "TOTAL E-Quality".

Closing Date:

31.01.2021

IMPORTANT: Please follow application instructions of our website and download and full fill the application form. Only complete applications will be accepted. Please use the Letter of Motivation to highlight your skills in the areas of biological data science, computational biology, computer programming, or biological statistics.

<https://www.moi.hhu.de/en/open-positions>

Contact:

Please contact for further information:
Dr. Stephanie Spelberg (moi@hhu.de).