

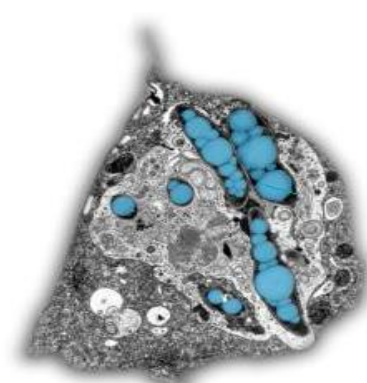
The Molecular Infection Biology Division at Osnabrück University invites applications
for
One PhD Researcher
to work on

“Role of Membrane Contact Sites in Mycobacterial Infection”

PROJECT BACKGROUND - Tuberculosis is caused by *Mycobacterium tuberculosis* (*Mtb*) and is responsible for 1.6 million deaths worldwide every year. The high lipid content of this pathogen accounts for many of its unique clinical manifestations. One of the main characteristics of Tb is the formation of lipid-loaded, foamy macrophages during chronic infection. A growing body of evidence indicates that *Mtb* mobilizes lipid droplets (LDs) to scavenge lipids from their host cell. However, how this pathogen remodels the lipid metabolic network of the host to support its persistent lifestyle is so far poorly understood.

An emerging concept is that bulk lipid transport inside eukaryotic cells largely occurs at membrane contact sites (MCSs), specialized microcompartments where two organelles are closely apposed to facilitate a functional integration of compartmentalized cellular processes. MCSs are typically enriched in lipid biosynthetic enzymes and transport machinery, notably cytosolic lipid transfer proteins (LTPs) that enable lipids to reach their destination independent of vesicular trafficking. Intriguingly, pathogens like tombusviruses and *Chlamydia* have been reported to co-opt LTPs from their hosts to build MCSs between the inclusion membrane and host organelles for the acquisition of lipids needed for their replication (Barajas et al., 2014; Laufman et al., 2019).

This project seeks to unravel the role of pathogen-induced MCS during *M. marinum* infection of *Dictyostelium*.



***Dictyostelium* cell infected with *M. marinum* (blue), from Barisch and Soldati 2017 (PLOS Pathogens).**

Refs: Barisch et al. (2015), Cell Microbiol; Barisch and Soldati (2017), PLoS Pathog, Barisch and Soldati (2017), Biochimie

HOST INSTITUTE - The successful candidate will join an international team of researchers with expertise in lipid and molecular biology as well as a diversity of imaging techniques. The UOS is a young university located in the historical town of Osnabrück, the only German city situated in a national park. The Molecular Infection Biology Division, headed by Dr. Caroline Barisch, is embedded in the recently established interdisciplinary Research Institute CellNanOS (www.cellnanos.uni-osnabrueck.de) and the Collaborative Research Center “SFB944: Physiology and Dynamics of Cellular Microcompartments”, which comprises 25 research groups from the Universities of Osnabrück and Münster whose common focus is thematically and methodologically linked to the projects. The Division and Research Centers offer outstanding scientific environments as well as direct access to state-of-the-art facilities in synthetic chemistry, chemical biology, biomolecular mass spectrometry and super-resolution microscopy (<https://www.ibios.uni-osnabrueck.de>).

REQUIREMENTS - We are looking for an ambitious and interactive individual with a master degree in cell biology or biochemistry. A solid background in diverse microscopy techniques and molecular biology and a general interest in cellular microbiology and host-pathogen interactions would be advantageous. Perseverance and the aspiration to work in a strongly interdisciplinary research environment are essential.

CONDITIONS OF EMPLOYMENT - The application deadline is **9th of April 2020**. The position will be filled as soon as possible. The initial period of employment is 3 years. An extension is anticipated. Salary is at the E13/65% level according to the German TV-L scale. The UOS is an equal-opportunity employer and especially encourages women to apply. Applications from handicapped persons will be favoured if all other qualifications are equal.

HOW TO APPLY - Please send applications including your Curriculum Vitae, a cover letter describing your motivation, publication list, copies of certificates and contact details of three academic references as a **single PDF file** to: caroline.barisch@uni-osnabrueck.de. Further information can be obtained from Dr. Caroline Barisch, phone: +49 (0) 178 9048867 or by visiting our website: <https://www.barischlabuos.com>.