



## 2 Master Theses

### - Dynamics of Viral Structures -

The **Heinrich Pette Institute** - Leibniz Institute for Experimental Virology (HPI), is committed to research on the biology of different human viruses as well as the pathogenesis of viral diseases (<http://www.hpi-hamburg.de>). The HPI offers the opportunity to perform cutting-edge research in a world-class research environment with excellent facilities. Two master thesis projects are available in the junior research group “Dynamics of viral Structures” (head: Dr. Charlotte Uetrecht). Our group is an international group with English as the official language.

#### **Project 1: “Monitoring gas phase unfolding”**

Different double cysteine mutants of proteins will be produced and analyzed by CD spectroscopy and native mass spectrometry (MS). These will be used for structural studies by action-FRET in native MS, especially gas phase unfolding, which will be performed in Lyon, France. It is foreseen that the master student spends some time in Lyon to run experiments.

#### **Project 2: “Establishing an HDX MS protocol for murine norovirus”**

The project will include protocol optimization for hydrogen/deuterium exchange (HDX) MS experiments to study interactions and dynamics of murine norovirus. Optimization of digest protocols is required for virions and VLPs. Structural changes in the viral particles are monitored by HDX. Digests will be analyzed by liquid chromatography MS. The project is carried out in collaboration with the University of Lübeck.

#### **We offer:**

- Intellectual and practical supervision by postdoctoral research fellows and last year PhD students
- Independent conduction of the experiments of the research project
- Teaching of state-of-the-art technologies in structural mass spectrometry and/or virology
- Student assistant salary

#### **We seek:**

- Highly motivated, team-oriented master students with interest in virology and mass spectrometry

If you are interested in undertaking a master thesis at the junior research group of Dynamics of viral Structures and have further questions, please do not hesitate to contact Dr. Charlotte Uetrecht ([charlotte.uetrecht@xfel.eu](mailto:charlotte.uetrecht@xfel.eu)) or visit <https://www.hpi-hamburg.de/en/research-teams/junior-research-groups/dynamics-of-viral-structures/> for more information.

The anticipated start date of the project is April 2019 or as early as possible. Please send your application with reference to the project, a short cover letter and CV by April 15<sup>th</sup> 2019 via email to:

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