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ZIK HIKE – Centre for Innovation Competence
Humoral Immune Response in Cardiovascular Disorders

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Master student biophysics

Dynamic Real-Time Deformability Cytometry:
High-throughput and time-resolved mechanical single cell analysis
University of Greifswald

A master project dedicated to study time-resolved biophysical properties of suspended cells is available from autumn 2017 / spring 2018 at the University of Greifswald, Germany.

We are looking for a highly motivated student in biology, biochemistry, biophysics or a related field for a Master project in single cell mechanics. The student will work in an interdisciplinary team of international scientists at the interface of biology, engineering and physics at the Innovation Center of Humoral Immune Response in Cardiovascular Disorders (ZIK-HIKE), University of Greifswald, Germany.

ZIK-HIKE is an interdisciplinary institute and a joint project of the faculty of natural sciences and the faculty of medicine at the University of Greifswald. Here, the laboratory of Biomechanics headed by Dr. Oliver Otto focuses on studying the mechanical properties of cells. We explore fundamentally relevant biological questions developing and applying state-of-the art biophysical and nanotechnological methods.

The project aims to investigate the mechanical properties of suspended cells at millisecond timescales. By applying real-time deformability cytometry (RT-DC), a label-free method for high-throughput single cell analysis (Otto, 2015), we seek to analyse the dynamic response of cells towards external hydrodynamic stresses. This is highly important to understand fundamental cellular properties, e.g. activation of immune cells, which can ultimately be used as a functional descriptor of rare cell populations. The student will work with suspended cell lines as well as primary cells as a model system and has access to RT-DC, microscopes, flow cytometers as well as cell sorting equipment.

More information can be found at www.biomech-hgw.org. Funds for a part-time student job (Wissenschaftliche Hilfskraft) are available to cover living expenses if applicable.

Please submit your application containing a cover letter and CV to Dr. Oliver Otto via e-mail (oliver.otto@uni-greifswald.de).

GEFÖRDERT VOM
Bundesministerium für Bildung und Forschung

ZENTREN FÜR INNOVATIONSKOMPETENZ
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