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The IUF – Leibniz Research Institute for Environmental Medicine investigates the molecular mechanisms through which particles, radiation and environmental chemicals harm human health. The main working areas are environmentally induced aging of the cardiopulmonary system and the skin as well as disturbances of the nervous and immune system. Through development of novel model systems the IUF contributes to the improvement of risk assessment and the identification of novel strategies for the prevention / therapy of environmentally induced health damage. The working group “Modern risk assessment and sphere biology” at the IUF - Leibniz Research Institute for Environmental Medicine in Düsseldorf is offering a

**Master Thesis position (f/m/d).**

**Topic: Development of an autonomous, self-regulating  
*in vitro* cultivation platform**

As part of a highly innovative, BMBF-funded, proof-of-concept study together with the Ruhr University Bochum, the Charité Berlin and the Max Delbrück Center for Molecular Medicine we want to establish an autonomous cultivation platform for complex *in vitro* models which will be used for studies on pathophysiological and toxicological endpoints as well as efficiency testing of substances. Therefore, as part of the master thesis, a bioreactor unit will be established in our lab and first proof of concept experiments will be performed using iPSC-derived 3D brain cell cultures in hydrogel. These brain spheres have to be cultured for 4 to 8 weeks in order to form neuronal networks. This process will be monitored either by analysis of different cell physiological parameters over time in the perfused bioreactor platform or analysis of neuronal activity and viability using 3D high content analysis (HCA) or light sheet fluorescent microscopy (LSFM).

We offer a very friendly and inspiring working atmosphere in an international team consisting of toxicologists, cell biologists, bioinformaticians and physicians. For this challenging project, we seek for a highly motivated master student (f/m/d) who has experience either with hydrogel preparation/characterization, stem cells, tissue engineering, or 3D cell culture. Ideally students of Biochemistry or Biomedical Engineering, or others with expertise in the mentioned research fields are welcome. Knowledge in Neurosciences, fluorescence imaging, IT affinity, and previous working experiences with cell cultures is a plus, excellent communication skills in German and English are mandatory. We expect a team player with an outstanding commitment and fun at work. Starting date is January 2019.

Please send your application as one PDF file incl. cover/motivation and your CV to [ellen.fritsche@iuf-duesseldorf.de](mailto:ellen.fritsche@iuf-duesseldorf.de)

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Application documents submitted by post are not returned. Documents for applicants not considered are destroyed appropriately once the procedure is complete.

