



The German Resilience Center (Deutsches Resilienz Zentrum gGmbH, DRZ) is an independent research institute aiming for a better understanding of resilience, i.e., an individual's ability to successfully adapt to stress or adversity without developing stress-related psychiatric conditions. The DRZ investigates the molecular/cellular, systemic, and cognitive/behavioral mechanisms mediating resilience and develops effective interventions, combining basic neuroscience, clinical neuroscience and social science.

Within the newly established DRZ research group *Neurostimulation* we currently offer a

#### PhD position (salary scale 65% TV-UM E13)

The **Neurostimulation group (PI: Dr. Til Ole Bergmann)** uses non-invasive transcranial brain stimulation techniques (TMS, TDCS, TACS) in combination with electrophysiological (EEG/MEG) and imaging (fMRI) methods to study the general function of neuronal oscillations for regulating information processing and synaptic plasticity during wakefulness and sleep, and in particular the oscillatory underpinnings of resilience. The group's methodological focus is on the simultaneous application of multimodal recording and stimulation techniques (e.g., EEG-fMRI, TMS-EEG, TMS-fMRI) and the development of real-time brain state-dependent brain stimulation (e.g., real-time EEG-triggered TMS). The PhD student will work on projects **combining TMS, fMRI and EEG to identify and causally manipulate brain networks and oscillations that mediate the encoding, consolidation, and recall of (emotional) memories**, and regulate the activity of emotion- and memory-related neuronal circuits. The methodological focus will be on **brain connectivity-guided concurrent TMS-fMRI to indirectly stimulate the relevant subcortical target structures via connected neocortical entry sites** (including entrainment of network oscillatory activity through frequency-specific rhythmic TMS) and thereby manipulate emotional memory processing.

**The ideal candidate** holds a Master degree in neuroscience, psychology, biology, or related fields, and has solid background knowledge in cognitive neuroscience, good technical skills, and programming experience (MATLAB). Fluency in written and spoken English, an independent but collaborative working style, and training in experimental methods and statistics are required. Experience with the recording and analysis of (f)MRI data (particularly regarding functional and/or structural connectivity) is highly desirable, prior experience with TMS and EEG is a plus but not mandatory.

The DRZ closely collaborates with the Johannes Gutenberg University Mainz and its University Medical Center. It is an integral part of the thriving neuroscience landscape in Mainz, which includes a Collaborative Research Center on Resilience (SFB 1193) and the Focus Program Translational Neuroscience (FTN), providing a Neuroimaging Center (NIC) and a PhD program in Translational Biomedicine (TransMed). The DRZ has access to three state-of-the-art neurostimulation labs (neuronavigated TMS, TCS, EEG), two 3T MRI scanners, specialized equipment for concurrent TMS-fMRI, TCS-fMRI, EEG-fMRI, and TMS-EEG, several behavioral and psychophysiology labs, as well as a Mouse Behavior Unit (MBU) and Mainz Animal Imaging Center (MAIC).

The DRZ promotes gender equality and therefore particularly encourages female scientists to apply. Preferential status will be given to handicapped persons, if equally qualified. The position opens immediately and will be filled as soon as a suitable candidate has been found.

For research related questions, please contact **Dr. Til Ole Bergmann** ([til-ole.bergmann@drz-mainz.de](mailto:til-ole.bergmann@drz-mainz.de)). For questions regarding employment and salary details at the DRZ gGmbH, as well as compatibility of family and work, please contact **Dr. Alexandra Heidle-Chhatwani** ([alexandra.heidle@drz-mainz.de](mailto:alexandra.heidle@drz-mainz.de)).

**Applications** should be addressed to Dr. Til Ole Bergmann, written in English, include a detailed CV, a brief (max 500 words) personal statement of research motivation/interest/experience, university degrees with grades, as well as names and contact details of two persons willing to provide letters of reference.

Please compile your application into one single PDF-file and email it to [personal@drz-mainz.de](mailto:personal@drz-mainz.de).