The CONMEM Project (Cognitive and Neural Dynamics of Memory Across the Lifespan) at the Centre for Lifespan Psychology of the Max Planck Institute for Human Development, Berlin, seeks interested applicants for a

**Master thesis in psychology, cognitive neuroscience (or related disciplines)**
on the topic of

**Noradrenergic modulation of cognitive control and sensory processing in a selective attention task**

**Description:**
Threatening situations trigger phasic norepinephrine (NE) release in the brain which promotes the processing of behaviorally relevant stimuli and suppresses the processing of distracting information in the cortex. By this, NE enhances the selectivity of neural processing which, in the laboratory, is reflected in a better performance in selective attention tasks. However, NE’s effect on selective attention crucially depends on the timing, locus and level of NE release (cf. Mather et al., 2015).

In the proposed study, the differential effects of triggering NE release in cognitive control (anticipatory) and sensory processing (post-stimulus) phases of an auditory selective attention paradigm are investigated. During the task, NE release is monitored online, using pupil dilation. In addition, electrophysiological markers of selective attention (e.g., P300, α-oscillations) can be assessed.

The study is incorporated in a larger project investigating the interplay of brain norepinephrine and α-oscillations in selective attention across the lifespan. The study is conducted as part of the research project Cognitive and Neural Dynamics of Memory Across the Lifespan (ConMem; PIs: Dr. Markus Werkle-Bergner, Dr. Myriam C. Sander) at the Centre for Lifespan Psychology of the Max Planck Institute for Human Development (Director Prof. Dr. Ulman Lindenberger) in collaboration with Prof. Mara Mather (University of Southern California, USC).

**Requirements:**
A successful applicant needs to hold a B.Sc. degree in psychology, cognitive neuroscience or related fields. Applicants should have experience with conducting experimental research, knowledge in neuroimaging methods (preferably eye tracking and/or EEG), and a solid background in at least one programming language (preferably Matlab). In addition, the ability to work independently as well as a high proficiency of the English language is required.

**Contact:**
M.Sc. Psych. Martin Dahl
Center for Lifespan Psychology
Max Planck Institute for Human Development
dahl@mpib-berlin.mpg.de