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# *Simultaneous fMRI, EEG, and TMS to study spatial attention control*

**Tuesday, August 16, 10-11am**

**6363 Alvarado Ct., #250 Conference room**

In noninvasive human neuroscience, functional magnetic resonance imaging (fMRI) has proven to be an excellent tool to investigate the spatial network perspective of human cognition. In contrast, to study the temporal oscillations perspective one requires noninvasive methods with higher temporal resolution such as EEG. While complementary in this respect, both, fMRI and EEG are limited in directly testing the causal relevance of the revealed activation patterns and oscillatory parameters for successful cognitive performance. To this end, noninvasive brain stimulation techniques such as transcranial magnetic or electrical stimulation (TMS, TES) are required. We still understand very little of *how (spatial) network and (temporal) oscillation mechanisms interact, let alone what causal contributions they make to cognition*. We here present a new methodological approach in which these different techniques are combined, also simultaneously, to integrate both the spatial network and temporal oscillation perspective for studying the neural correlates of spatial attention control. Also possible clinical applications for the cognitive recovery of stroke patients will be discussed.