**Cognitive Neuroscience Core**

The Cognitive and Neurobiological Approaches to Plasticity (CNAP) Center—a Phase 2, NIH-funded Center of Biomedical Research Excellence (COBRE)—supports a Cognitive Neuroscience Research Core, which is available to affiliated researchers. The Cognitive Neuroscience (CN) Core was founded as the CNAP Electroencephalography (EEG) Core during Phase 1 of CNAP COBRE support in July of 2019. With the awarding of Phase 2 COBRE in July of 2022, the Core is expanding into the CN Core by adding new modalities of cognitive neuroscience methodology. The CN Core contains a large, shared space (246 sq. feet) for participant preparation (e.g., fitting and applying electrodes) and equipment cleaning. This shared space has a sink station, cabinets for storage, and large monitor for facilitating small meetings. During Summer 2023, this shared space will be renovated and updated with the addition of a second sink station. The CN Core contains a shared Magstim Electrical Geodesic Inc. (EGI) EEG system with six 64-channel Geodesic Sensor Nets (small, medium, and large). Software licenses are provided for E-prime, Psychopy, Matlab, and Experiment Builder to run experiments on a Windows computer. All necessary hardware (e.g., response boxes, microphone, speakers, etc.) are also provided. A separate data analysis room provides two computers (iMac and PC) with the latest software available for data processing. Core project leaders’ meetings take place in a conference room provided by the Department of Psychological Sciences. CN Core staff are currently expanding the core and add the complimentary modalities of transcranial magnetic stimulation (TMS) and repetitive TMS (rTMS) coupled with EEG (also manufactured by Magstim EGI). The former EEG Core allowed CNAP researchers to test hypotheses about how human neural activity correlates with behavior by measuring participants’ behavior and their concurrent EEG waveforms. The addition of TMS/rTMS coupled with low-profile 64-channel EEG will allow CNAP researchers to also test causal hypotheses by altering neural activity with TMS/rTMS and assessing changes in human behavior. Furthermore, by measuring EEG with and without TMS/rTMS stimulation, or before and after such stimulation, researchers can determine how stimulation influences ongoing neural activity. Starting in the fall of 2023, the TMS/rTMS and low-profile EEG systems will be available in one of two rooms attached to the shared set-up space (the other room houses our shared EEG system). The CN Core has expanded access to structural MRI scanning capabilities at a local hospital for CNAP researchers who require MRI scans for greater EEG source localization, or for targeting specific brain regions for TMS/rTMS stimulation. The core will also expand access to functional MRI to provide a more comprehensive set of cognitive neuroscience tools to CNAP researchers.