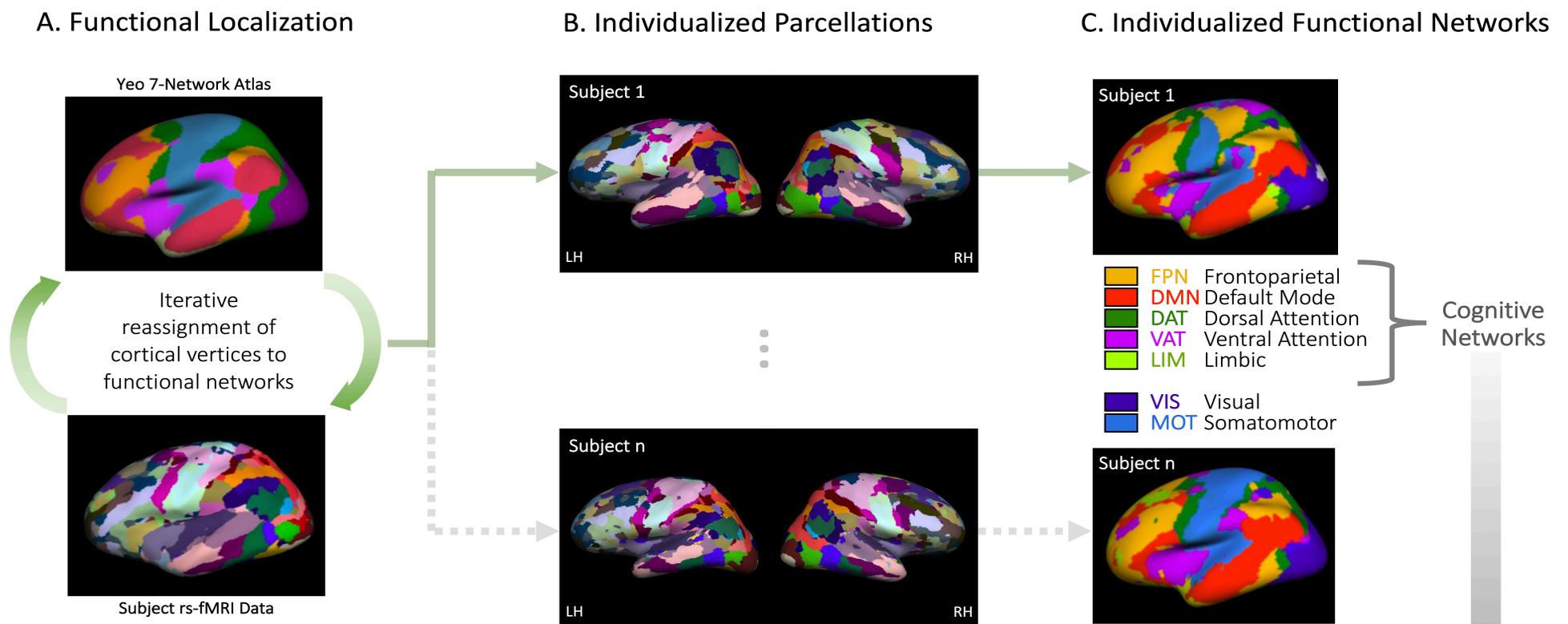
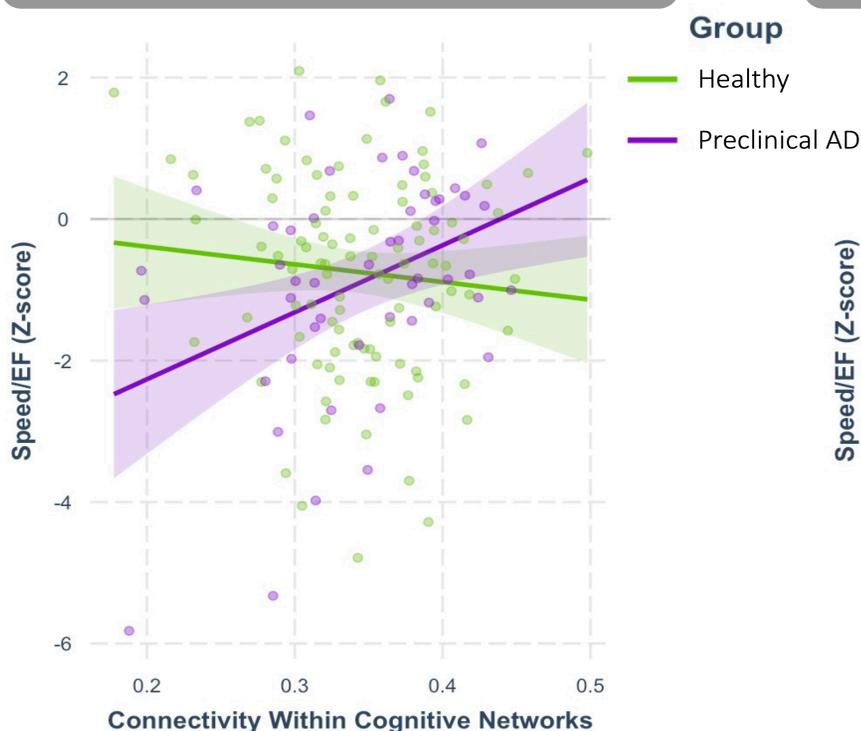


CBI Featured Image – Summer, 2022

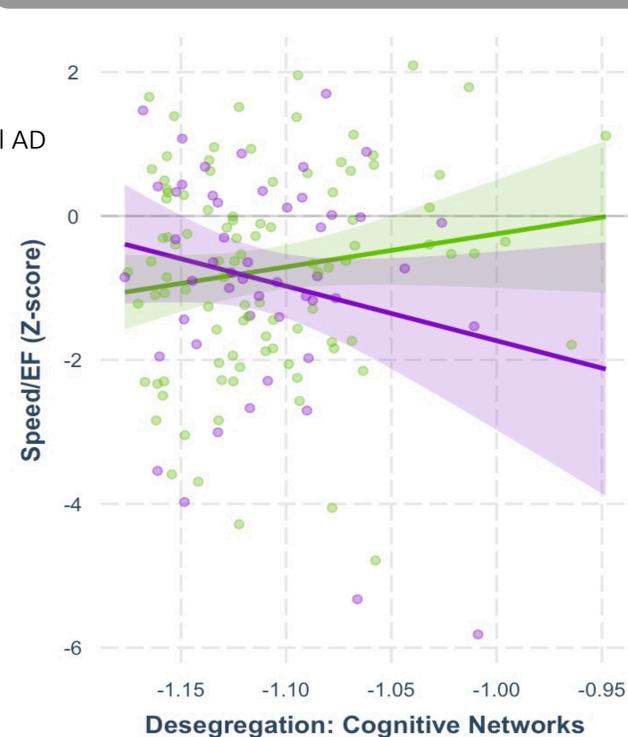
Courtesy of Stephanie Fountain-Zaragoza, Ph.D., Department of Health Sciences and Research, College of Health Professions



Preserved Integrity of Cognitive Networks Associated with Intact Cognition



Breakdown of Cognitive Networks Associated with Poorer Cognition



Using Individualized Functional Networks to Detect Cognitive Deficits in Preclinical Alzheimer's Disease. The analysis pipeline involved A) an iterative process of mapping a population-based network atlas to the individual's functional topology, which resulted in B) subject-specific functional parcellations with C) regions belonging to seven functional networks. Associations between connectivity and cognition were most apparent for cognitive networks (i.e., the frontoparietal [FPN], default mode [DMN], dorsal attention [DAN], ventral attention [VAN], and limbic [LIM] networks). We observed brain-behavior dissociations between healthy adults and those with preclinical AD, defined as the presence of elevated cerebral amyloid. In individuals with preclinical AD, preserved network integrity (i.e., greater connectivity *within* cognitive networks) was associated with better cognition, whereas network desegregation (i.e., greater connectivity *between than within* cognitive networks) was associated with worse cognition (bottom panel). This work was done in collaboration with CBI faculty, Drs. Hesheng Liu and Andreana Benitez.