The ability to integrate evidence or alter one’s beliefs is a critical cognitive process in response to changing information. A bias against disconfirmatory belief (BADE) is associated with delusions and delusional ideation, and may be linked to delusion maintenance (Woodward et al., 2007; Eisenacher & Zink, 2017; McLean et al., 2017). In previously published work, constrained principal component analysis for fMRI (fMRI-CPCA) was performed on the scans of 41 healthy individuals during an evidence integration task. It was determined that delusional ideation was associated with decreased activity in the cognitive evaluation network (CEN) during the processing of disconfirmatory evidence and increased visual attention network activity during the processing of confirmatory evidence (Lavigne et al., 2020). The current study builds on these findings by classifying the previously extracted components into brain network exemplars and applying canonical correlation analysis (CCA) to observe any relationships between networks. Voxel-based classification methods revealed the recruitment of the traditional default mode (TDMN), external attention/CEN (EXT/CEN) and EXT/one-handed response (EXT/1RESP) networks during the evidence integration task. By comparing hemodynamic response (HDR) plots through CCA, it was determined that the TDMN shares a negative relationship with the EXT/CEN network as well as the EXT/1RESP network. These patterns of activation and deactivation during evidence integration may underlie delusional ideation and further studies are needed to compare these findings to brain network connectivity in the schizophrenia population.

References: