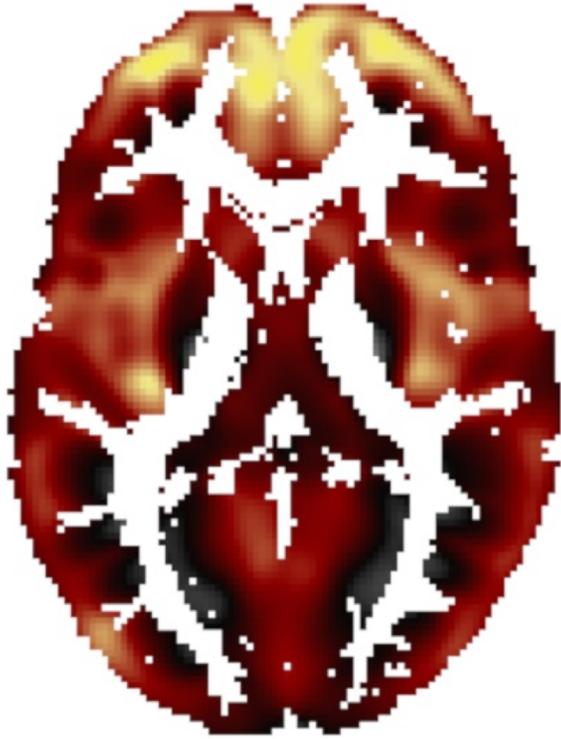


# CBI's Image of the Month

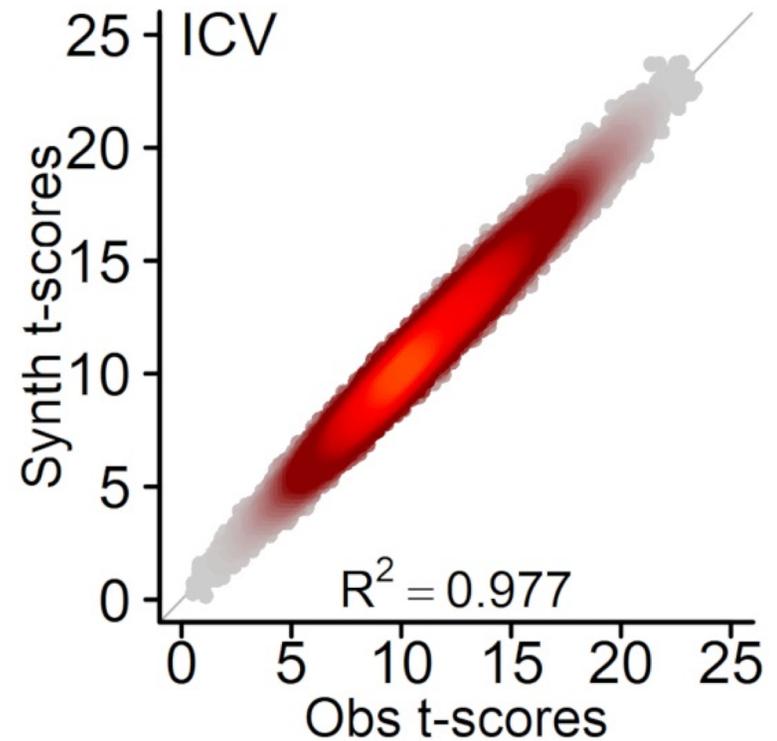
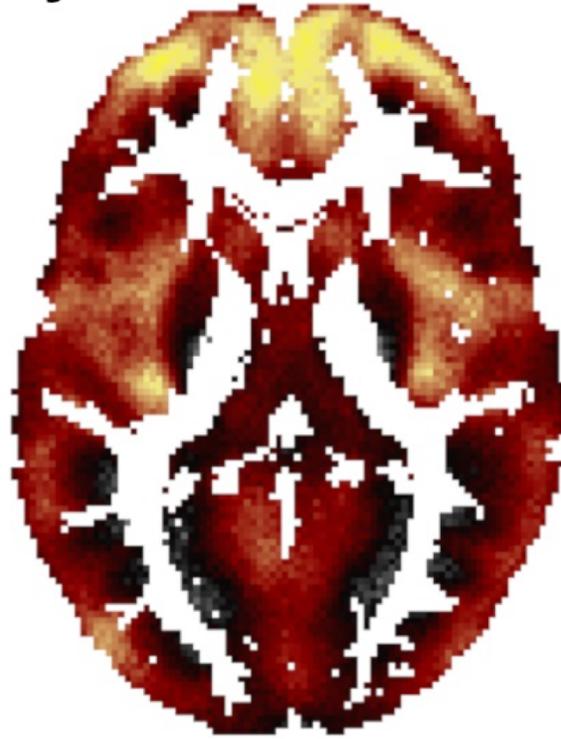
October, 2020

Courtesy of the Eckert Lab

Observed t-scores



Synthetic t-scores



Vaden, Gebregziabher, & Eckert (2020) demonstrate a novel approach for creating fully synthetic neuroimaging datasets, based on the principles and methods of multiple imputation. Fully synthetic data can accurately represent real/observed group-level associations, by replacing subject data with simulants that preserve the observed covariance structure in the real. Axial slices from observed and synthetic statistic maps show a nearly identical spatial distribution of effects. The density scatterplot shows voxel-level t-scores from spatially corresponding voxels in the observed statistic maps (Obs) were well-approximated by the synthetic results (Synth). Fully synthetic neuroimaging data has the potential to facilitate data-sharing for scientific review, replication, discovery, and education.

Reference: Vaden Jr, K. I., Gebregziabher, M., Eckert, M. A., & Dyslexia Data Consortium. (2020). Fully synthetic neuroimaging data for replication and exploration. *NeuroImage*, 117284.