

Thursday, December 1st, 2pm EDT

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“Predicting aphasia scores from multimodal neuroimaging: an integrated framework”

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Post-stroke aphasia has been traditionally investigated for lesion-to-symptom relationships. In the last 10 years, there have been an increasing number of studies showing that lesion alone is insufficient to explain the variability of aphasia deficits observed after stroke. A brain network perspective, both functional and structural, provides additional evidence of the architectural organization of the brain after stroke, yielding complementary information that might increase our ability to predict aphasia. I will present a predictive framework that uses multimodal data (i.e., virtual tractography lesions, resting state connectivity, lesional information) to produce preliminary single-modality predictions of aphasia severity. These predictions are then combined into a final multimodal prediction. The method was tested on four aphasia scores obtained from 53 chronic stroke patients, and shows a systematic advantage of multimodal integration over the best single-modality prediction. Our results suggest that all neuroimaging modalities carry information potentially useful for the prediction of aphasia scores, and that, rather than comparing modalities and selecting the best one, optimal aphasia predictions can be derived by combining all information sources into a single enhanced multimodal prediction.

Location: University of South Carolina, Discovery I, Room #140
915 Greene Street, Columbia, SC 29208
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Time: 2-3pm EDT

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C-STAR LECTURE SERIES

The Center for the Study of Aphasia Recovery (C-STAR; <http://cstar.sc.edu>) houses researchers who examine the effects of behavioral treatment, brain stimulation, and residual brain function (brain plasticity) on recovery from aphasia. C-STAR is a collaboration between researchers from the University of South Carolina, the Medical University of South Carolina, Johns Hopkins University, and the University of California, Irvine. The Center is funded through the National Institute of Deafness and Communication Disorders (NIDCD) grant #NIH P50 DC014664. Biweekly public lectures, given by members and guests of C-STAR, are accessible live and online. Recordings of the lectures can be viewed via C-STAR YouTube channel: <https://www.youtube.com/channel/UC8p0CuG4He9ngCR4nnzhZ7w>