

Thursday, November 7th 2019, 2pm ET
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Residual white matter integrity predicts post-stroke aphasia severity and recovery: the importance of long-range fibers and indirect pathways

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Language processing is mediated by a complex and widespread cortical network. Several grey matter regions located in the left hemisphere have been identified to be part of the language system and contribute to different degrees in language comprehension and production. Communication between those brain regions is essential for successful language processing as demonstrated by severe language deficits occurring after white matter lesions alone despite entirely intact grey matter regions.

Because of the importance of intact connections between brain regions, the preservation of white matter tissue after a stroke is a crucial determinant of an individual's outcome and recovery from aphasia. Comorbidities such as small-vessel brain disease that affect white matter integrity outside the stroke lesion have been identified as detrimental for the severity of language impairment after stroke. This talk will provide an overview of the underlying white matter pathophysiology associated with post-stroke aphasia by focusing on recent research that our group performed to deepen our understanding of the importance of 1) long-range white matter fibers and 2) indirect white matter connections in the undamaged brain tissue. We will discuss that 1) age-related white matter hyperintensities affect aphasia severity through a change of the proportions of long- and short-range fibers, and that 2) indirect connections between crucial grey matter regions affect aphasia severity and recovery. These findings demonstrate that the preservation of long-range fibers and indirect connections outside the lesion explain in part why the integrity of white matter tissue is a crucial determinant for post-stroke aphasia severity and recovery.

Room #140, Discovery I, 915 Greene Street, Columbia, SC 29208

Date: Thursday November 7th, 2019, Time: **2pm – 3pm EDT**

The viewing event will be catered!

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