

**Friday, February 21<sup>st</sup>, 11.30am ET (4.30pm UTC)**  
Presentation in Zoom, accessible via the C-STAR website:  
<http://cstar.sc.edu/lecture-series/>

### **Beyond Lesions: Unlocking the Language Disconnectome for Long-Term Predictions**

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Investigating how brain lesions impact mental abilities and disorders offers profound insights into the neurobiology and anatomy of human cognition. While single-case and small-group studies have provided valuable knowledge on the structure-function relationship of the brain, their insights remain limited when it comes to predicting individual outcomes following a specific brain lesion. These conventional methods also fail to adequately account for the significant variability in how neural architecture supports individual differences in cognition.

In recent years, neuroscience has shifted towards harnessing “big data,” recognising variability as an asset rather than a limitation in neurobiology. By leveraging new methodologies and large-scale data sharing, we can refine predictions, improve patient classification, and gain deeper insights into the lesion-symptom relationship, particularly by including white matter structures.

This talk will explore how studying neurological patients has revolutionised our understanding of the neurobiology of language and the brain’s language networks, shedding light on how damage to white matter pathways impacts communication and cognitive function. It will underscore the necessity of multivariate and multimodal approaches, illustrating the progression of lesion-symptom research from isolated case studies to a broader investigation of the language disconnectome, enabling more precise mapping of neural pathways involved in the neurobiology of language and communication. By integrating advanced neuroimaging, clinical data, and computational techniques, this approach enhances our ability to predict long-term language outcomes, informing rehabilitation strategies and offering new insights into neuroplasticity and recovery after brain injury.

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The online lecture can be followed online from your computer, tablet or smartphone, in Zoom. The zoom link is accessible via the C-STAR website: <http://cstar.sc.edu/lecture-series/>

The watch party for the lecture will be in Discovery, room #140 (915 Greene Street, Columbia, SC)

For more information, or to be added to the C-STAR mailing list, contact Dirk den Ouden:  
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