

Slippery Rock University
Department of Mathematics and Statistics

Presents

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**“Statistical Issues in the Analysis of
Neuroimaging Data”**

Abstract

Structured spatiotemporal data arise in many applications, ranging from geology to medical imaging. These different motivating contexts give rise to interesting statistical questions, which are often amenable to common analysis approaches. In this talk, I will use one such example of data containing both a spatial and a temporal aspect - functional neuroimaging - to highlight the statistical challenges, not least of which are intricate problems of multiplicity, and some ways of tackling them. Disparate features of the different applications may necessitate the development of novel methodologies, even when the underlying questions are similar. In the physical landscape, for example, the concept of distance has a precise meaning. In the brain, by contrast, there are two different types of distance - a physical distance and a functional distance between activation patterns in different areas of the brain. If the unique spatial structure in brain space is ignored, modeling is less efficient and the multiple testing problem is exacerbated. Hence it is crucial to pay attention to the particularities of the context in addition to the commonalities.

Friday, February 5th

3:00 p.m.

<https://sru.zoom.us/j/98352961875>

Students are welcome!