POSITIONS:

Postdoctoral Associate in Geometric Data Science
We invite applicants for a Postdoctoral Associate position joint in the Departments of Mathematics and Statistical Science at Duke University. The postdoc will work with Professors David Dunson, Paul Bendich and John Harer on developing new data analytic and statistical methodology for analysis of high-dimensional and complex data. A particular focus will be on methods that exploit geometric and topological structure in the data to improve efficiency and insight. In addition, an emphasis will be on probability modeling approaches, which characterize uncertainty in statistical learning and inferences, including Bayesian methods. The research will be driven by important applications in neuroscience, defense and other areas, and will attempt to develop broad new theoretically justified methodology that has a direct practical impact. Requirements include a PhD in mathematics, statistics or a closely related field. In addition, applicants should be citizens or permanent residents of the United States.

Postdoctoral Associate in Neuro Data Science
We invite applicants for a Postdoctoral Associate position focused on developing and applying novel statistical and data science methods for the analysis of complex and high-dimensional data from neuroscience studies. A particular emphasis will be on modern and emerging data sources, ranging from video and image processing to wireless recording devices for brain signals. An ambitious goal is to fundamentally improve insight into the human brain and the mechanisms underlying pathological behavior and neuro-psychiatric disorders. However, background in neuroscience is not required; instead the position requires a PhD in statistics, applied mathematics or a related data science methodology field. Professors David Dunson and Jana Schaich Borg will direct the research, which will involve a combination of novel methods development, justification for the methods through theory and simulation, and applications.

Postdoctoral Associate in Probabilistic Learning
We invite applicants for a Postdoctoral Associate position focused on developing and applying novel statistical and data science methods for dimensionality reduction. A particular focus will be on methods that rely on probability models to characterize lower dimensional structure in high-dimensional data, with an emphasis on Bayesian methods and on improving robustness and reproducibility. In particular, current factor analytic and clustering methods tend to be “brittle”; we seek to develop fundamentally new classes of models and inference algorithms that lead to more interpretable and reproducible structure across data sets and populations. The methods development is directly motivated by applications in biomedical studies, such as nutritional epidemiology, but the over-arching focus is on transformative, general, theoretically supported and practically useful methods development. Candidates should have a PhD in statistics, mathematics or a closely related field. A strong technical background is desirable, and knowledge and experience with Bayesian methods is not required. Professors David Dunson and Amy Herring will direct the research.

Send a CV and inquiries to David Dunson, dunson@duke.edu