1163-49-773   **Nicolás García Trillos** and **Ryan Murray***, rwmurray@ncsu.edu, and **Matthew Thorpe**.

Clustering on point clouds: consistency guarantees for Cheeger cuts.

Separating points into clusters based upon geometry is a central problem in data science. This talk will address the problem of partitioning point clouds which are random samples of an underlying manifold. In particular, I will discuss recent work with Nicolás García Trillos and Matthew Thorpe which provides quantified, geometric consistency guarantees between minimizers of discrete Cheeger cut problems and a limiting continuum Cheeger set problem. These consistency guarantees rely upon novel energy estimates and recent results from Riemannian geometry about the stability of isoperimetric sets. (Received September 12, 2020)