1129-60-367 **Kavita Ramanan*** (kavita_ramanan@brown.edu). *Tales of Random Projections: where Geometry meets Probability Theory.*

The structure of high-dimensional measures is a fascinating subject whose study leads to an interesting interplay between geometry and probability. Classical theorems in probability theory such as the central limit theorem and Cramér's theorem can be viewed as providing information about certain scalar projections of high-dimensional product measures. This talk will focus on the behavior of random projections of more general (non-product) high-dimensional measures, which are of interest in diverse fields, ranging from asymptotic convex geometry to high-dimensional statistics. Although the study of (typical) projections of high-dimensional measures dates back to Borel, only recently has a theory begun to emerge that identifies the role of certain geometric assumptions that lead to better behaved projections. We will review past work on this topic, including a striking central limit theorem for convex sets, and show how it leads naturally to questions on the tail behavior of random projections, and the study of large deviations on the Stiefel manifold. We will describe our recent results in this direction, their implications and several open questions. (Received March 20, 2017)