1153-60-258 **Varun Jog*** (vjog@wisc.edu). *Bridging the inequality gap.*

Reconstructing probability distributions from projections is a fundamental problem in many scientific applications. Geometric and information theoretic inequalities provide important mathematical tools for understanding the behavior of such projections—in particular, for characterizing extremal distributions with respect to different lower-dimensional properties of interest. This talk will consist of two parts: First, we introduce new methods to bound the size of an unseen geometric object using information derived from its lower-dimensional projections. Second, we present a new information inequality that relates the entropy of a random variable to that of its lower-dimensional marginals. Both parts highlight the advantages of working with information inequalities instead of their equivalent geometric or functional formulations. (Received August 29, 2019)