Description:
In recent years, high dimensional probability, combinatorics, and geometry have played an increasingly important role in information theoretic applications. For example, non-asymptotic random matrix theory, which has roots in geometric functional analysis, now finds itself at the heart of the fast developing area of compressive sensing. Similarly, metric embedding theory, with its deep connections to nonlinear functional analysis, is extensively studied within theoretical computer science. The reverse flow of ideas and methods - from information theory to high dimensional probability and geometric functional analysis - has also begun to accelerate.

The time is ripe to foster a direct cross-fertilization between the communities in geometric functional analysis, high dimensional geometry and probability and various information theory communities. This workshop will bring together researchers from these communities, including those already at work at the interface, as well as young investigators entering one of the fields.

Speakers:
Francis Bach (Institut National de Recherche en Informatique et en Automatique (INRIA))
Kamalika Chaudhuri (University of California, San Diego)
Ronald Coifman (Yale University)
Alexandre d'Aspremont (Princeton University)
Alfred Hero III (University of Michigan)
Piotr Indyk (Massachusetts Institute of Technology)
Gil Kalai (Hebrew University)
Wenbo Li (University of Delaware)
Mauro Maggioni (Duke University)
Elchanan Mossel (University of California, Berkeley)
Robert Nowak (University of Wisconsin-Madison)
Luis Rademacher (Ohio State University)
Jack Silverstein (North Carolina State University)
Stanislaw Szarek (Case Western Reserve University)
Vladimir Temlyakov (University of South Carolina)
Joel Tropp (California Institute of Technology)
Santosh Vempala (Georgia Institute of Technology)
Van Vu (Yale University)
Martin Wainwright (University of California, Berkeley)
Bin Yu (University of California, Berkeley)
Ofer Zeitouni (University of Minnesota)
Shuheng Zhou (University of Michigan)