

# COLLOQUIUM

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## Caps and Probabilistic Methods



Mathematics  
and  
Statistics

Date: Friday June 3, 2022

Time: 3:30 PM

Room: RI 208

**Abstract:** A set of points in a finite projective space  $PG(n, q)$  with no three collinear is called a *cap*. More generally, a set of points in  $PG(n, q)$  such that no  $s$ -space contains more than  $r$  points is called an  $(r, s; n, q)$ -set. In the first (and main) part of the talk we will discuss probabilistic approaches to this classical problem.

In the second part of the talk, if time permits, we will discuss one reason why it is so hard to construct large caps. For this we present parameter restrictions on *approximately strongly regular graphs*. This is joint work with Jacques Verstraëte.