

# COLLOQUIUM

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**The game of cops &  
robbers on graphs**

The logo for Mathematics and Statistics features a large orange circle in the center, containing the text "Mathematics and Statistics" in a bold, black, sans-serif font. This circle is set against a background of four blue squares arranged in a 2x2 grid, with the circle overlapping the center of these squares.

**Mathematics  
and  
Statistics**

Date: Friday, January 30, 2015

Time: 3:30 - 4:30 PM

Room: RIC 209

**Abstract:** The title of this talk is taken from that of the excellent book by Anthony Bonato and Richard Nowakowski. We imagine a game played by two players, the cop and the robber, who each control a playing piece which rests on vertices of a given graph. On each player's turn, they either move their piece along an edge to a neighbouring vertex, or they leave it where it is. The robber is captured, and the game ends in victory for the cop, if the two pieces ever simultaneously occupy the same vertex. A graph is called *copwin* if the cop player has a strategy which always results in capture of the robber; in addition to an introduction to the subject, we will produce a complete characterisation of copwin graphs.