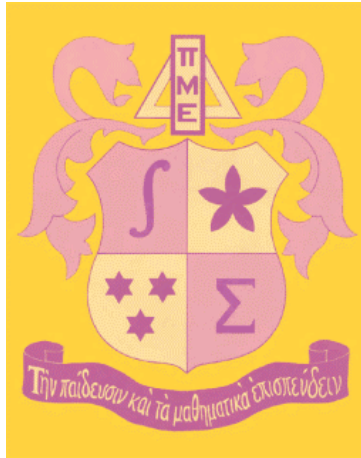# Pi Mu Epsilon

Thursday, October 18th
12:15 PM in Hume 101

Drunk Cops and Robbers: How To Catch A Thief... Slowly

The game of Cops and Robbers can be played out, in a mathematical sense, on a graph—i.e., on a set of vertices and edges, like a square, star, hexagon, or other figure. In the game, the players designated as "cop" and "robber" take turns, respectively, moving from vertex to vertex along graph edges. Should the players ever occupy the same vertex at the same time, the robber is captured and the cop wins.

The theory behind these graph pursuit-evasion games has been well studied. In 2011, a version of this game was investigated where the robber is moving randomly; a "drunk" robber. This talk will explore the reversed role: the cop is now "drunk" while the robber moves perfectly. The expected capture time will be demonstrated for the simplest 1-cop win graphs (paths), 2-cop win graphs (cycles) and, time permitting the k-d-regular tree.

If this talk were a movie, then the plot would be:

How would the movie Taken (or Taken 2, the sequel) work out if Liam Neeson's character had been drinking constantly?

We will provide pizza and drinks. For those interested in membership, please bring $10 for semester dues.
Hope to see you on Thursday!