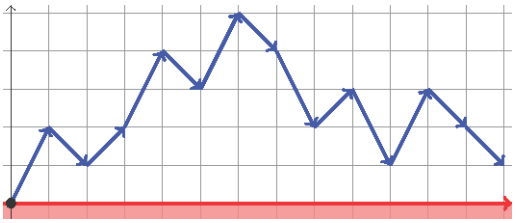
Spring Colloquium Series

Basketball Paths and Random Paths in Life

David Nguyen
Mathematics and Statistics, Cal Poly Pomona

Abstract:

Imagine a game of basketball where only one and two points are awarded. Suppose that the home team won by one point and was always ahead throughout the game. The graph of the difference in scores versus scoring events can be seen as a lattice path that starts at *(0,0)* and ends at *(n,1)* for some *n* and stays above the horizontal axis.



For a given number *n* of scoring events, how many such games are there? In this talk, we will focus on explicit formulas that count such ``basketball paths." We will present both bijective proofs and generating function proofs of our formulas. In the course of doing so, we will introduce important tools such as Lagrange-Bürmann inversion and the so-called "kernel method." Lastly, I would like to share with you my own path, my journey to Mathematics, of how I found and fell in love with the subject. In particular, I wish to emphasize the importance of finding and pursuing what you love to do.

Wednesday, April 20, 1:05 - 1:50pm in 3-1639