#### Department of Mathematics, University of California San Diego

# Food For Thought Seminar

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### How to Not Do Combinatorics

#### Abstract:

Are you tired of graphs, paths, and flags on staffs? Have all those Dyck paths finally crossed the line? Are you ready to make a full binary tree and "leaf" the Catalan numbers behind? Then this is the talk for you! We are going to talk about concepts in combinatorics that have connections to areas of applied mathematics such as compressed sensing, quantization, and convex optimization; in particular, we're going to discuss some magnificent ways in which we can either solve (or approximately solve) certain problems in combinatorics by applying techniques from these areas. Conversely, we present cases where we can use ideas from combinatorics to prove results in applied math!

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