Mathematical Research at Notre Dame

UNIVERSITY OF NOTRE DAME
Department of Mathematic

Speaker: **David Galvin**
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Tuesday, February 19, 2016
4:00 pm
Room: 231 Hayes-Healy Hall

Title: Equilateral and almost-equilateral sets in ^{n}

Abstract:
Combinatorics may be defined narrowly as "the art of counting", more broadly as the study of discrete (finite or countable) structures, and even more broadly as "[the class of] problems that it is reasonable to attack more or less from first principles" (this last definition is due to Tim Gowers). However it's defined, it's a subject filled with easy to state problems whose solutions require drawing on many areas of non-combinatorial mathematics — probability, linear algebra, differential equations, ... I'll illustrate this by discussing some questions in discrete geometry, including the well-known "how large can a set of points in ^{n} be, if the distance between any pair of points is 1?", and the much less well-known "what if the distance between any pair is merely required to be *close* to 1?" (The answer to this latter may be surprising.)