# MATH and PIZZA

## Curious Catalan Numbers

Speaker

## Alissa Crans

Loyola Marymount University

Sponsored by

UK Department of Mathematics

Biography:

Alissa S. Crans earned her B.S. in mathematics from the University of Redlands in 1999 and her Ph.D. in mathematics from the University of California at Riverside in 2004, under the guidance of John Baez. She is currently an Associate Professor of mathematics at Loyola Marymount University and has held positions at Pomona College, The Ohio State University, and the University of Chicago.

Alissa's research is in the field of higher-dimensional algebra and her current work, funded by an NSA Young Investigator Grant, involves categorifying algebraic structures called *quandles* with the goal of defining new knot and knotted surface invariants. She is also interested in the connections between mathematics and music, and enjoys playing the clarinet with the Santa Monica College wind ensemble.

Alissa is extremely active in helping students increase their appreciation and enthusiasm for mathematics through co-organizing the Pacific Coast Undergraduate Mathematics Conference together with Naiomi Cameron and Kendra Killpatrick, and her mentoring of young women in the Summer Mathematics Program (SMP) at Carleton College, the EDGE program, the Summer Program for Women in Mathematics at George Washington University, the Southern California Women in Mathematics Symposium, and the Career Mentoring Workshop.
In addition, Alissa was an invited speaker at the MAA Spring Sectional Meeting of the So Cal/Nevada Section and the keynote speaker at the University of Oklahoma Math Day and the UCSD Undergraduate Math Day. She is a recipient of the 2011 Merten M. Hasse Prize for expository writing and the Henry L. Alder Award for distinguished teaching.

*All students*
*with an interest in Mathematics*
*are welcome to attend* !!

**Date:** Wednesday, February 22, 2012

**Time:** 5:00pm - 6:00pm

**Room:** 204, Classroom Building


Abstract:

We are all familiar with Fibonacci's famous sequence that begins 1, 1, 2, 3, 5, 8, … as well as other popular sequences such as the perfect squares 1, 4, 9, 16, 25, … or the triangular numbers 1, 3, 6, 10, 15, …

But what about the sequence 1, 1, 2, 5, 14, …? These are the Catalan numbers, named after the Belgian mathematician Eugène Catalan (1814–1894), despite having been described by Leonhard Euler 100 years earlier.

It turns out these numbers take a variety of different guises as they provide the solution to numerous combinatorial problems!
After introducing this sequence, we will explore some of the many ways in which the Catalan numbers are hidden throughout mathematics.


## UK Math Club

www.math.uky.edu/~mathclub