



The Mathematical Association of America

**Math Department Colloquium/
Math Club/MAA Student Chapter presents**

**Ramanujan Graphs and Zeta Functions of Graphs
Tony Shaheen, CSULA**

**Wednesday, May 23, 2007
3 – 4 pm, Simpson Tower 213
Refreshments 2:30 - 3**

Abstract: The eigenvalues of a graph tell you about the expansion properties of a graph. A problem in this area of mathematics is to construct infinite families of expander graphs. It turns out that Ramanujan graphs make excellent expanders. Also, the zeta function of a Ramanujan graph satisfies the Riemann hypothesis for graphs.

We will begin this talk by explaining how the eigenvalues of a graph tell you about the expansion properties of the graph. We will then talk about Ramanujan graphs. Afterwards we will introduce the zeta function of a graph and talk about the Riemann hypothesis. If there is time, we will discuss other properties of the zeta function of a graph (such as the fact that it can tell you how many spanning trees a graph has).

This will be the last talk of the quarter.

For more information, contact Mike “Quimby” Krebs at mkrebs@calstatela.edu or Tony Shaheen at ashahee@calstatela.edu.

Math Club website: http://www.calstatela.edu/academic/math/Math_Club/mathClub.htm

