

CALIFORNIA STATE UNIVERSITY, LONG BEACH

THE MATHEMATICS COLLOQUIUM

Presents

Mr. Joshua Lamkins

CSULB Student

Speaking on

Checkered Partitions

Friday February 22, 2008

12:00noon – 1:00PM

FO3-200A

Abstract: A partition of a positive integer is a way of expressing that integer as an unordered sum of positive integers. The applications of partitions are far-reaching, ranging from abstract algebra to statistical physics to optimization. Much research has been devoted to developing partitions statistics to prove properties of partitions (such as partition congruences). A partition statistic, the checker value, will be discussed, and is defined as follows: If the Ferrers graph of a partition is imposed on a checkerboard such that the upper-left corner is on a black square, then the number of black squares in the Ferrers graph is called the checker value of the partition. A two-variable generating function will be developed which gives a formula for the number of partitions a given number with a given checker value. A combinatorial approach to finding the same formula will also be presented.