Department of Mathematics and Statistics Colloquium

Numerous Results Related to m-ary Partitions

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Abstract: The focus of this talk will be on arithmetic properties satisfied by various integer partition functions. I will share some history, starting with Ramanujan's groundbreaking work in the 1910's on the unrestricted partition function p(n) and moving rapidly to work by Robert Churchhouse in the late 1960's on the binary partition function. I will also discuss work of Oystein Rodseth, George Andrews, and Hansraj Gupta in the 1970's on results for m-ary partitions which are natural generalizations of binary partitions. (An m-ary partition of a positive integer n is a nonincreasing sequence of powers of m which sum to n.) I will then discuss work I completed with Rodseth which generalizes the results of Andrews and Gupta from the 1970's. I will discuss a set of "applications" of m-ary partitions to Neil Sloane's questions on non-squashing stacks of boxes, and then I will close by discussing recent (and unexpected) results obtained with George Andrews and Aviezri Fraenkel on the characterization of the number of m-ary partitions of n modulo m.

Thursday, October 2 at 3:45 in Roop 103

refreshments at 3:30