Meeting: 1007, Santa Barbara, California, SS 3A, Special Session on Recent Advances in Combinatorial Number Theory

1007-11-75 **Melvyn B. Nathanson*** (melvyn.nathanson@lehman.cuny.edu), Department of Mathematics, Lehman College (CUNY), Bronx, NY 10468. *Representation functions of additive bases.*

The representation function $r_A(n)$ of a set A of integers counts the number of ways that the integer n can be written as the sum of two elements of A. It has been shown that if $f : \mathbf{Z} \to \mathbf{N}_0 \cup \{\infty\}$ is any function with only finitely many zeros, then there is a set A of integers such that $r_A(n) = f(n)$ for all integers n. It is an open problem to construct a maximally dense set of integers corresponding to an arbitrary function $f(n)$. This talk will describe the use of Sidon sets to construct large sets with a given representation function. This is joint work with Javier Cilleruelo. (Received February 02, 2005)