The Binomial Essence of Lecture Hall Partitions

ABSTRACT: A lecture hall partition is a sequence $x_1, x_2, \ldots, x_n$ of nonnegative integers satisfying the linear inequalities: $x_1/n \geq x_2/(n-1) \geq \ldots \geq x_n/1$. Lecture hall partitions were introduced in 1997 by Bousquet-Mélou and Eriksson who showed that they are in one-to-one correspondence with partitions into odd parts less than $2n$. Since then, several generalizations and refinements of this result have been discovered.

In this talk we view lecture hall partitions from three different perspectives (integer-analogs, $q$-series identities, and Sylvester’s bijection) to uncover some new connections.

3:00 - 3:50 pm   HA 335

Faculty and Students are invited to attend.