

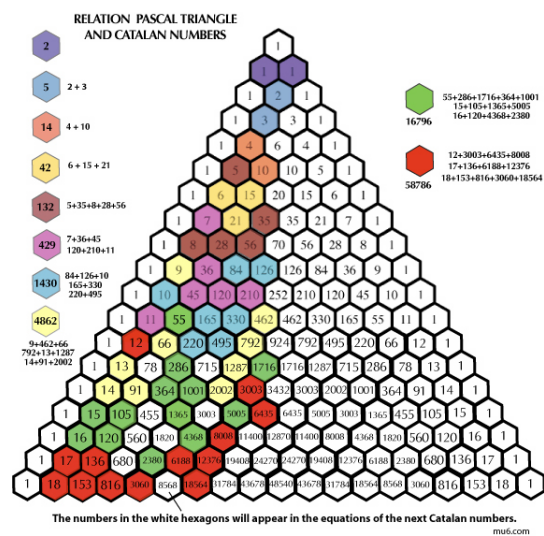


COLLOQUIUM SPEAKER SERIES

Mathematics & Computer Sciences

Monday, November 30

12:00-12:50 in W565



Dr. Shahadat Hossain

University of Lethbridge

Research interests:

Numerical optimization and its applications,
design of efficient algorithms for sparse matrix problems.

Computing with Pascal's Triangle

Many interesting combinatorial identities can be derived from the "Pascal's arithmetic triangle", the triangle of binomial coefficients named after Blaise Pascal.

In this introductory talk I will emphasize the computational aspects of this famous triangle of numbers.

I will first discuss the LU factorization of the Pascal's matrix and review some related calculations.

I will then introduce a sparse matrix determination problem in numerical optimization whereby the $n \times \rho$ real matrix with $\rho \ll n$ defining a compression- reconstruction procedure must satisfy the Haar condition. Properties of this Pascal-like compression-reconstruction matrix will be presented.

Everyone is welcome!