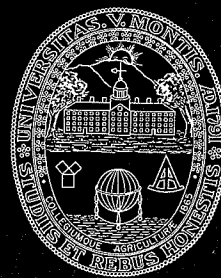


UVM MATHEMATICS COLLOQUIUM



Extremal Problems on Bipartite Graphs

John Schmitt
Middlebury College

Thursday, April 26, 2007
3:30-4:30 PM
Torrey 203

Refreshments to be served at 3:15 PM

Abstract:

In 1938, Erdős asked the following question: how many integers can one choose between 1 and n such that no one divides the product of two others? His solution resulted from reformulating the problem to the following question: how many edges can a bipartite graph contain without containing a quadrilateral? His result was a precursor to the field of Extremal Graph Theory which began a few years later with the celebrated result of Turán. The theory that has followed over the past sixty years has yet to answer a generalization of Erdős' reformulated question, known as the *Problem of Zarankiewicz*. The problem asks for the maximum number of edges in a bipartite graph not containing a copy of $K_{s,t}$. We survey some of the results in this area and introduce a variation on the problem of Zarankiewicz which we can completely solve.

sponsored by the Department of Mathematics & Statistics at the University of Vermont and the Department of Mathematics at St. Michael's College

ADA: Individuals with disabilities requiring accommodations should contact Sally Knight at 656-3166 as soon as possible.