

**Department of Mathematics and Statistics Colloquium**

*On the Range of Correlation Between Two Variables*

N. Rao Chaganty  
Old Dominion University

Abstract: Correlation has been in use widely as a measure of dependence between two random variables. It is a common knowledge that correlation falls in the interval  $(-1, 1)$ , and this is true when the two variables are normally distributed. What is not well known is the fact if one or both variables is non-normal the range is a proper subset of that interval. The extreme values of the correlation are determined by the Frechet bounds. In this talk we will discuss the range of the correlation for non-normal, in particular for binary variables. We will also study some extensions to multiple random variables and applications to problems in biostatistics.

**Monday, September 12 at 3:45 in Roop 103**

**refreshments at 3:30**