

# UWM Math Colloquium

## M.S. Defense

Tuesday, April 29, 2008, 3:00 PM, EMS E423

### *"A Comparison of Different Methods of Simulating Bivariate Copula Data"*

*by*

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#### Abstract:

We introduce the concept of copulas, a tool for understanding relationships among multivariate outcomes. A copula is a function that links univariate marginals to their full multivariate distribution. Today, copulas play an important role in applications in finance and insurance and applications of copulas has been developing rapidly in recent years.

Since copulas have many applications, we often need data of a given copula family. Therefore the objective of this thesis is to present and analyze effective algorithms for random variate generation from the various copula families studied. After an introduction to copulas we consider two different approaches to simulate copula data, the conditional distribution method and the rejection method, and a special focus will be on the generation of bivariate data.