

McMASTER UNIVERSITY  
GRADUATE PROGRAM IN STATISTICS

**STATISTICS SEMINAR**

**Speaker:** Dr. José María Sarabia, Department of Economics, University of Cantabria, Spain

**Title:** *“Bivariate Distributions Based on Conditional Specifications: Examples and Applications”*

**Day:** Tuesday October 26, 2004

**Time:** 3:30 - 4:30 PM

**Place:** HH/217 - Deloitte Colloquium Room (Refreshments in HH/216 at 3:00 PM)

**SUMMARY**

A bivariate distribution can sometimes be characterized completely by properties of its conditional distributions. In this talk we discuss models of bivariate distributions whose conditionals are members of prescribed parametric families of distributions. Some important models with conditionals specified are discussed, including the normal case, the exponential family and the skew normal distribution. Finally, certain conditionally specified densities are shown to provide convenient flexible conjugate prior families in certain multiparameter Bayesian settings.

**REFERENCES**

1. Arnold, B.C., Castillo, E. and Sarabia, J.M. (1999). *Conditional Specification of Statistical Models*. Springer Series in Statistics, Springer Verlag, New York.

2. Arnold, B.C., Castillo, E. and Sarabia, J.M. (2001). Conditionally Specified Distributions: An Introduction (with discussion). *Statistical Science*, **16**, pp. 249-274.

3. Castillo, E. and Galambos, J. (1989). Conditional Distributions and the Bivariate Normal Distribution. *Metrika*, **36**, pp. 209-214.



**ABOUT THE SPEAKER:** Dr. José María Sarabia obtained B.Sc. and M.Sc. degrees, both in mathematics, from University of Valladolid, and a Ph.D. degree in mathematics from university of Cantabria, Spain. He is a Professor of Statistics in the department of Economics at University of Cantabria. Dr. Sarabia has published extensively in the areas of distribution theory (both univariate and multivariate), Bayesian statistics, modeling and analysis of extremes, economic inequality and other areas. He is co-author of two

Springer Verlag books on conditionally specified statistical models. Dr. Sarabia is currently an Associate Editor of the statistical journal *Test*.

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