**The University of Chicago**
**Department of Statistics**

**Seminar Series**

---


## PETER HOFF

Departments of Statistics and Biostatistics
University of Washington, Seattle


## "Marginal Set Likelihood for Semiparametric Copula Estimation"

**MONDAY, October 2, 2006 at 4:00 PM**
**133 Eckhart Hall, 5734 S. University Avenue**
*Refreshments following the seminar in Eckhart 110.*

## ABSTRACT


Quantitative studies in many fields involve the analysis of multivariate data of diverse of types. For example, a survey may record the sex, education level and income of its participants, thus including measurements that we may consider binary, ordinal and continuous. One approach to the analysis of such mixed data is to use a copula model, in which the associations among the variables are parameterized separately from their univariate marginal distributions. In this talk we discuss a method of semiparametric inference for copula models via the construction of what we call a marginal set likelihood function for the association parameters. This likelihood function can be viewed as a more general type of marginal likelihood, is a function of the association parameters only, and its validity does not depend on any assumptions about the marginal distributions of the data. The resulting likelihood-based method is therefore appropriate for the analysis of mixed continuous and discrete data. Estimation and inference for the copula parameters are available via a straightforward Markov chain Monte Carlo algorithm based on Gibbs sampling. We illustrate the use of this approach with an analysis of the associations among the variables in the 1998 General Social Survey.


---

Please send email to Mathias Drton (drton@galton.uchicago.edu) for further information. Information about building access for persons with disabilities may be obtained in advance by calling the department office at (773) 702-8333.