

SEMINAR SERIES  
Department of Quantitative Analysis and Operations Management  
College of Business Administration  
University of Cincinnati

**Methods for Continuous Nonlinearities in Discrete Optimization**

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**Friday December 4, 1998**  
**2:30 p.m.**  
**217 Lindner Hall**

Many practical planning problems involve nonlinearity. One source of nonlinearity may be the discrete nature of some choices. Other nonlinearities, often in the criteria that we seek to optimize, have a more continuous nature.

I will discuss three models and associated methods for treating continuous nonlinearities. The first model can be applied to the redesign of an environmental monitoring network. The second model can be used for designing certain telecommunication networks. Finally, I will present methods for treating a very general model using a piecewise-linear approximation method.

The methods used to attack these models include a wide variety of techniques from continuous (convex) as well as discrete (linear) optimization.

Jon Lee is Associate Professor of Mathematics at University of Kentucky, where he has been since 1993. From 1991-92 he was a Research Associate in the Center for Operations Research and Econometrics at the Universite Catholique de Louvain, in Belgium. From 1985-93 he was Assistant and Associate Professor of Operations Research at Yale University. He holds B.S. (1981), M.S. (1984), and Ph.D. (1986) degrees from the School of Operations Research and Industrial Engineering at Cornell University.