

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

**Stochastic Programming Approximations and  
Applications to Asset Allocation**

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**Professor, Management Science**  
**College of Business, University of Tennessee**

**FRIDAY, October 19, 2007**  
**1:30 p.m.**  
**218 Lindner Hall**

In this talk, stochastic programming solution methods that utilize bound-based approximations are discussed. The focus is on bounds that use limited moment information of the underlying random vectors to approximate the expected recourse function. Bounds that use first-order moments, as well as higher-order moments are described in the context of saddle functions and specialized for convex recourse functions. Relation of these bounds to generalized moment problems is also addressed. Bounds are applied within sequential approximation schemes to solve the underlying stochastic program to a user-specified degree of accuracy. Appropriate partitioning techniques for the domains of the random variables are described and applied in a financial asset allocation stochastic program. Useful solution characteristics as well as sensitivity analyses are discussed using the bound-based solution procedure.

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Dr. Chanaka Edirisinghe is a Professor and the Ph.D. Director of the Management Science program, College of Business of the University of TN, and he has been with the program since 1991. He holds a BSc degree in Mechanical Engineering, M.Eng degree in Industrial Engineering and Management, and a PhD degree in Management Science from the University of British Columbia. His teaching and research interests include stochastic programming, linear and nonlinear optimization, health care modeling, project management, and investment modeling and financial portfolio optimization. His research articles appear in journals such as Operations Research, Mathematics of Operations Research, Mathematical Programming, Annals of Operations Research, Journal of Financial and Quantitative Analysis, Journal of Banking and Finance, and Journal of Computational Optimization and Applications. He serves as a consultant to the Frank Russell Company, Tacoma, WA, for developing and implementing large stochastic programming models for financial asset allocation. He is also a consultant to Market Research Inc., Bahamas, on developing models for futures and stock trading systems. Dr. Edirisinghe is a former Vice-Chair (stochastic programming) of the Optimization Society of INFORMS.

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