



Arthur Imperatore School of Sciences and Arts

Department of Mathematical Sciences

Seminar in Stochastic Systems

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Stochastic Optimization with Stochastic Dominance Constraints

Tuesday, October 28, 2003

4:00 pm

Pierce 218

Abstract: In stochastic optimization the decisions affect various outcomes. The relation of *stochastic dominance* is a way to formulate preferences among random outcomes. We consider optimization problems involving stochastic dominance relations as constraints. We develop necessary and sufficient optimality conditions and duality theory for these models. We show that the Lagrange multipliers corresponding to the dominance constraints are concave nondecreasing utility functions. Furthermore, we develop a numerical method for solving the problem when the underlying probability distributions are discrete. The results will be illustrated on a portfolio optimization problem.

This is a joint work with Andrzej Ruszczyński (Rutgers University).

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Refreshments will be served at 3:50 pm.

For more information contact Prof. Darinka Dentcheva at ddentche@stevens-tech.edu or call 201-216-5449.