

## IE Seminar

given by

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**ABSTRACT:** Conservation planners are called upon to make choices and trade-offs about the preservation of natural areas for the protection of species in the face of development pressures. We addressed the problem of selecting sites for protection over time with the objective of maximizing species representation, with uncertainty about future site development, and with periodic constraints on the number of sites that can be selected. We developed a 0-1, linear optimization model with 2 periods to select the sites that maximize expected species coverage subject to budget constraints. The model is based on the idea that development uncertainty can be characterized by a set of scenarios, each of which is a possible second-period development outcome for the set of sites. Results are presented for the Fox River watershed in Chicago.

**BIO:** Stephanie Snyder is an operations research analyst with the USDA Forest Service, North Central Research Station. She previously held positions with the Minnesota Department of Transportation and with the US Army Corps of Engineers as an analyst. She has a BA in geography from Boston University and an MA and Ph.D. in applied operations research from Johns Hopkins University. Her research focus primarily on the development of discrete optimization models applied to problems in timber harvest scheduling and habitat reserve design. She is an active member of INFORMS and has served on the editorial board of Forest Science.

**Thursday, December 2, 2004**  
**Conference Room 4125A&B at 3:30 PM**