

Distinguished **SEMINAR** *Series*



The Minimum Label Spanning Tree Problem: Illustrating the Power and Flexibility of Genetic Algorithms

BRUCE L. GOLDEN



Professor and France-Merrick
Chair in Management Science,
Robert H. Smith School of Business

Affiliate Professor,
*Department of Civil and
Environmental Engineering*

Given a connected, undirected graph G whose edges are labeled (or colored), the minimum label spanning tree (MLST) problem seeks a spanning tree on G with the minimum number of distinct labels (or colors). The MLST problem is motivated by applications in communications network design. It is easy to understand and yet it is a difficult problem to solve optimally.

The MLST has been shown to be NP-hard and an effective heuristic has been proposed and analyzed. In addition, metaheuristics (including genetic algorithms) have been developed. In computational tests, the genetic algorithms perform exceptionally well. In this presentation, we summarize much of this work and discuss some variants, if time allows. One of our key goals is to demonstrate how genetic algorithms work and to illustrate the power and flexibility of genetic algorithms.

WEDNESDAY, APRIL 5, 2006

12:00 PM - 1:00 PM

CEE CONFERENCE ROOM (1179 GLENN MARTIN HALL)

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