DO&IT Seminar Series
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**Speaker:** Monica Gentili, GIT

**Date:** Friday, March 27, 2015

**Time:** 3:00 PM – 4:00 PM

**Location:** VMH 1505

**Applications of Spatial, Mathematical and Simulation Models to Construct Efficient and Equitable Allocation System for Liver Transplantation.**

**Abstract:** This study combined several Geographic Information Systems, mathematical programming models and Discrete Event Simulation to advance existing research on organ allocation system and geographic equity and efficiency in liver transplantation system. The main objectives of the study were: (i) to identify key factors determining geographic disparity in kidney transplantation; (ii) to identify optimal locations for both existing and new liver transplant centers (iii) to identify new OPO boundaries and (iv) to test whether the mathematically produced liver allocation system can perform better than the actual system. We will show the results of our combined approach when applied to liver transplantation in USA.

**Bio:** Dr. Gentili is a Tenured Assistant Professor at the Department of Mathematics, University of Salerno in Italy, and Affiliate faculty Member at the Department of Geography at George Mason University. She is currently Visiting Assistant Professor at the Institute of People and Technology at the Georgia Institute of Technology. Her research interest is in combinatorial optimizations with particular emphasis on location/allocation problems and network flow optimization. In particular, she focuses on the design of mathematical models and algorithm for problems with application in traffic management and healthcare systems. Her research was awarded the bi-annual "UPS-SOLA Best Dissertation Award" (Section On Location Analysis) in 2003, and the "Best Best Paper Award for the Public Sector OR Section" at the INFORMS meeting in San Francisco, November 2014.