Women in OR/MS sponsored a session Monday featuring presentations by women authors of papers in top OR journals that covered a variety of topics: sequential sampling procedures in stochastic programming, network design in liner shipping, and pricing games in decentralized assembly systems.

Güzin Bayraksan, professor at The Ohio State University, presented first on a sequential sampling procedure for stochastic programming. The method determines the number of samples necessary to solve stochastic programming problems to a given level of optimality by progressively adding samples to the optimization problem. Rules for stopping were also discussed. Under certain conditions, the algorithm is proven to converge with a probability of one in the limit of the confidence interval of the optimality gap estimator at least as large as a user-determined level.

The second presentation, by Özlem Ergun of the Georgia Tech, discussed carrier collaborations with resource sharing. Operational synergies are possible through cooperation of buyers and sellers via economies of scope. In particular, the researchers study containerized liner shipping in which assets (ships) are pooled among carrier companies. They design a mechanism to obtain solutions close to a centralized optimum despite decentralized decisions in a game theoretic framework. Behavior of companies is modeled as profit maximizing; side payments to shippers are used as incentives to obtain strategic, sustainable, and cooperative behavior.

Basak Kalkanci, also of Georgia Tech, closed the session with a presentation titled "Pricing Games and Impact of Private Demand Information in Decentralized Assembly Systems." The work combines decentralized assembly systems, common agency, and information asymmetry. Manufacturers who contract with multiple suppliers face more complexity than those who do not, but they also have private information unknown to any of the suppliers. Suppliers with limited information of demand may provide complex contracts to increase their overall benefits. This gain is achieved primarily through the supplier who contracts with the manufacturer first.