

Date: Friday, October 21 2005

Time: 10:30 a.m. –12:00 p.m.

Place: 102 Business Building

PRESENTATION ANNOUNCEMENT

"Stochastic Models for Joint Stock Replenishment and Outbound Shipment Release Decisions"

To be presented by

Sila Cetinkaya
Industrial and Systems Engineering Department,
Texas A&M University

In this talk, we consider a vendor realizing a sequence of random order arrivals in random sizes from a group of retailers located in a given geographical region. The vendor has the autonomy to hold small orders until an economical dispatch quantity, i.e., outbound load, is consolidated. Consequently, the actual inventory requirements at the vendor are in part determined by the parameters of the shipment-release policy in use. The problem at hand is the simultaneous computation of an optimum order quantity for inventory replenishment at the vendor and an optimum dispatch quantity for outbound shipments. This problem is motivated by vendor-owned/vendor-managed inventory practices and third party warehousing/distribution applications where the vendor/third party has some control over the timing and quantity of the outbound shipment, i.e., re-supply at a downstream supply chain member. We develop renewal-theoretic models that take into account the costs of stock replenishment, inventory carrying, customer waiting, and outbound transportation. We discuss several special cases and extensions of the problem including the case of deterministic demand and implementation of time-based, quantity-based, and hybrid outbound dispatch policies.

Biographical Sketch

Sila Çetinkaya received her BSIE and MSIE degrees in Turkey from Istanbul Technical University and Bilkent University, respectively. She holds a Ph.D. in Management Science from McMaster University in Canada. Her research interests include supply chain management, inventory theory, and applied probability, and her publications in these areas have appeared in various refereed journals such as *European Journal of Operational Research*, *IIE Transactions*, *Management Science*, *Naval Research Logistics*, and *Operations Research* among others. Dr. Çetinkaya's research has been funded by federal and state agencies, including the National Science Foundation, Texas Engineering Education Coordination Board, and Texas Engineering Experiment Station. In 2001, she received the National Science Foundation CAREER Award. She has been named the Outstanding Young Industrial Engineer by IIE in 2003. She serves on the Editorial Board of *IIE Transactions: Logistics and Scheduling*, and she is a member of INFORMS and IIE.