

SEMINAR SERIES
Department of Quantitative Analysis and Operations Management
College of Business Administration
University of Cincinnati

“Composite Variable Models for Large Transportation and Logistics Problems”

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Transportation and logistics problems are abundant today, both in the private and public sectors. Determining the best way to flow raw materials, finished products, and services through complex and constrained networks can pose a significant challenge. Math programming approaches can be very helpful in tackling such problems, but traditional models often end up being either too simplistic or too slow for practical use. We discuss how the use of *composite variables* – that is, variables that encompass multiple decisions – can often allow us to develop more realistic models while maintaining tractability. We present two case studies, one from airline planning and one from service parts logistics, to demonstrate the potential benefits of this approach.

Amy Cohn is currently completing her PhD in the Operations Research Center at MIT. Her primary research interest is in modeling and solution approaches for large-scale transportation and logistics problems. She has conducted research in application areas including airline planning, printed circuit board manufacturing, and service parts logistics. Prior to her enrollment at MIT, Amy worked at Princeton Transportation Consulting Group, a company providing decision support software to the freight transport industry.