

My research philosophy is that of being problem motivated—that is, given a relevant, interesting, real-world application, develop and analyze mathematical models for the related problem. Of particular interest to me is the creation of novel, innovative application areas for Operations Research techniques. My solid Engineering background coupled with an excellent, in-depth knowledge of a broad range of Operations Research techniques give me the tools that are necessary for effectively performing this type of research activity.

**Overall statistics for published (or accepted) journal papers:**

Total count = 109

Accident Analysis and Prevention: 2

Annals of Operations Research: 5

Computers and Industrial Engineering: 2

Computers and Operations Research: 15

Decision Sciences: 1

European Journal of Operational Research: 17

Geographical Analysis: 2

Human Factors and Ergonomics in Manufacturing: 1

IIE Transactions: 5

Information Systems and Operational Research: 1

Interfaces: 2

International Journal of Mathematics of Operations Research: 1

International Journal of Operational Research: 2

International Journal of Production Research: 4

Journal of Simulation: 1

Management Science: 3

Military Operations Research: 3

Naval Research Logistics: 2

Networks: 4

Networks and Spatial Economics: 2

Risk Analysis: 1

SIAM Journal on Applied Mathematics: 1

Socio-Economic Planning Sciences: 7

Theoretical Issues in Ergonomics Science: 1

Transportation Research C: 1

Transportation Research Record: 1

Transportation Science: 9

Operations Research: 7

OR Insight: 4

OR Letters: 1

**Submitted Journal Papers:**

D. Myers, R. Batta and M. Karwan, "Calculating Flight Time for Unmanned Aerial Vehicles in the Presence of Obstacles and the Incorporation of Flight Dynamics," submitted to *Networks and Spatial Economics*.

Y. Kang, R. Batta and C. Kwon, "Value-at-Risk Model for Hazardous Material Transportation," submitted to *Annals of Operations Research*.

W. Yu and R. Batta, "Search for an Immobile Entity on a Unit Graph: A Mathematical Programming Approach," under revision for *Operations Research*.

G. Galindo and R. Batta, "Prepositioning of Supplies for Hurricanes under Spatial Autocorrelation and Demand Uncertainty," revision submitted to *European Journal of Operational Research*.

G. Galindo and R. Batta, "Review of Recent Developments in OR/MS Research in Disaster Management," revision submitted to *European Journal of Operational Research*.

W. Yu and R. Batta, "Search for a mobile entity on a network: An empirical study," under revision for *European Journal of Operational Research*.

M. Henchey, R. Batta, M. Karwan, A. Crassidis, "A Flight Time Approximation Model for Unmanned Aerial Vehicles: Estimating the Effects of Flight Dynamics and Wind," revision submitted to *Military Operations Research*.

R. Batta, M. Lejeune and S. Prasad, "Public Facility Location Using Dispersion and Population Biases," submitted to *Operations Research*.

**In Publication Queue:**

Y-H. Lin, R. Batta, P. Rogerson, A. Blatt and M. Flanigan, "Location of Temporary Depots to Facilitate Relief Operations after an Earthquake," to appear in *Socio-Economic Planning Sciences*.

F. Mufalli, R. Batta and R. Nagi, "Simultaneous Sensor Selection and Routing of Unmanned Aerial Vehicles for Complex Mission Plans," to appear in *Computers and Operations Research*.

N. Bednowitz, R. Batta and R. Nagi, "Dispatching and Loitering Policies for Unmanned Aerial Vehicles under Dynamically Arriving Multiple Priority Targets," to appear in *Journal of Simulation*.

J. Wang, Y. Kang, C. Kwon and R. Batta, "Dual Toll Pricing for Hazardous Material Transport with Linear Delay," to appear in *Networks and Spatial Economics*.

## **2012**

X. Nie, G. Parab, R. Batta and L. Lin, "Simulation-Based Selectee Lane Queueing Design for Passenger Checkpoint Screening," *European Journal of Operational Research*, Vol. 219, No. 1, (2012), pp. 146-155.

P. Berglund and R. Batta, "Placement of Warehouse Cross Aisles," *IIE Transactions*, Vol. 44, No. 2, (2012), pp.107-120.

## **2011**

M. Zhang, R. Batta and R. Nagi, "Designing Manufacturing Facility Layouts to Mitigate Congestion," *IIE Transactions*, Vol. 45, No. 4, (2011), pp. 132-145.

Y-H. Lin, R. Batta, P. Rogerson, A. Blatt, M. Flanigan, and K. Lee, "A Logistics Model for Emergency Supply of Critical Items in the Aftermath of a Disaster," *Socio-Economic Planning Sciences*, Vol. 45, No. 4, (2011), pp. 132-145.

## **2010**

M. Flanigan, A. Blatt, M. Russell, R. Batta and K. Lee, "Emergency Response Technology and Integrated Active Transportation System," *Transportation Research Record*, No. 2189,( 2010), pp. 26-36.

E. Tokar Erdermir, R. Batta, P. Rogerson, A. Blatt and M. Flanigan, "Joint Ground/Air EMS Coverage Models," *European Journal of Operational Research*, 2072, (2010), 736-749.

M. A. Akella, E. Delmelle, R. Batta, P. Rogerson and A. Blatt, "Adaptive Cell Tower Location Using Geostatistics," *Geographical Analysis*, 42:3, (2010), 227-244.

## **2009**

S. Huang, R. Batta and R. Nagi, "Simultaneous Siting and Sizing of Distribution Centers in the Plane," *Annals of Operations Research*, 167:1, (2009), 157-170.

X. Nie, R. Batta, C. Drury and L. Lin, "The Impact of Joint Responses of Devices in an Airport Security System," *Risk Analysis*, 29:2, (2009), 298-311.

A. Jotshi and R. Batta, "Search for Two Immobile Entities on a Network," *International Journal of Mathematics of Operations Research*, 1:1/2, (2009), 37–75.

A. Jotshi, Q. Gong and R. Batta, "Dispatching and Routing of Emergency Vehicles in Disaster Mitigation Using Data Fusion," *Socio-Economic Planning Sciences*, 43:1, (2009), 1-24.

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A. Sarkar, R. Batta and R. Nagi, "Finding Rectilinear Least Cost Paths in the Presence of Convex Polygonal Congested Regions," *Computers & Operations Research*, 36, 3, (2009), 737-754.

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M. Zhang, R. Batta and R. Nagi, "Modeling of Workflow Congestion and Optimization of Flow Routing in a Manufacturing/Warehouse Facility," *Management Science*. 55, (2009), 267-280.

## **2008**

J. Paul and R. Batta, "Models for Hospital Location and Capacity Allocation for an Area Prone to Natural Disasters," *International Journal of Operational Research* 3, (2008), 473-496.

A. Jotshi and R. Batta, "Search for an Immobile Entity on a Network," *European Journal of Operational Research*, 191, (2008), 347-359.

I. Casas, R. Garrity, D. Mandloi, M. Sunm, J. Weaver, R. Nagi and R. Batta, "A Spatial Decision Support System Combining GIS and OR Tools to Optimize District Boundaries and Bus Routes for a Suburban School District," *OR Insight*, 21, 2, (2008) 3-16.

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E. T. Erdemir, R. Batta, S. Spielman, P.A. Rogerson, A. Blatt, M. Flanigan, "Location Coverage Models with Demand Originating from Nodes and Paths: Application to Cellular Network Design," *European Journal of Operational Research*, 190, (2008), 610-632.

## **2007**

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I. Casas, A. Malik, E. Delmelle, M. Karwan and R. Batta, "An Automated Network Generation Procedure for Routing of Unmanned Aerial Vehicles (UAVs) in a GIS Environment," *Networks and Spatial Economics*, 7, (2007), 153-176.

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Q. Gong and R. Batta, "Allocation and Reallocation of Ambulances to Casualty Clusters in a Disaster Relief Operation," *IIE Transactions* 39, (2007), 27-39.

H. Kelachankuttu, R. Batta and R. Nagi, "Contour Line Construction for a New Rectangular Facility in an Existing Layout with Rectangular Departments," *European Journal of Operational Research*, 180, 1, (2007), 149-162.

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## **2003**

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## **1999**

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