

## **MARK D. HICKMAN, Ph.D., P.E.**

Associate Professor, Department of Civil Engineering and Engineering Mechanics  
Director, ATLAS (Advanced Transportation and Logistics Algorithms and Systems) Center  
Associate Professor, Department of Systems and Industrial Engineering (courtesy appointment)  
University of Arizona

### **Summary**

Dr. Mark Hickman is an associate professor in transportation engineering within the Department of Civil Engineering and Engineering Mechanics at the University of Arizona. He is the current director of the ATLAS Center, a transportation research center in the College of Engineering at the University. Dr. Hickman has taught courses and performed research in public transit planning and operations, travel demand modeling, and traffic engineering. His areas of research interest and expertise include public transit planning and operations, urban transportation planning, and the application of remote sensing technology for traffic flow management. In these areas, Dr. Hickman has been involved in numerous research activities at the University of Arizona, and in previous academic and consulting positions.

### **Education**

B.S., Civil Engineering, Massachusetts Institute of Technology, 1988  
M.S., Transportation, Massachusetts Institute of Technology, 1988  
Ph.D., Transportation Systems, Massachusetts Institute of Technology, 1994

### **Experience**

Senior Associate, Charles River Associates, Inc., 1988 – 1990 and 1991  
Assistant Research Engineer, PATH Program, University of California, Berkeley, 1993 – 1996  
Assistant Professor, Texas A&M University, 1996 – 1999  
Assistant Professor, University of Arizona, 2000 – 2005  
Associate Professor, University of Arizona, 2005 – Present  
Visiting Associate Professor, Hong Kong Polytechnic University, January 2007 – May 2007  
Visiting Scientist, German Aerospace Center (DLR), June – August 2007

### **Awards**

Invited Participant in the annual Frontiers in Engineering Workshop sponsored by the National Academy of Engineering, September 2001 (held in March 2002)  
Professor of the Year, ASCE Student Chapter, University of Arizona, 2002, 2004, 2005, 2009, 2011  
Senior's Choice Professor of the Year, ASCE Student Chapter, University of Arizona, 2003, 2010  
Award for Excellence at the Student Interface, College of Engineering, University of Arizona, 2003, 2005, 2006, 2009, 2010  
Educator of the Year, Southern Arizona Branch of ASCE, 2009  
Recipient of the Delbert R. Lewis '51 Distinguished Professorship in Civil Engineering and Engineering Mechanics, University of Arizona, 2005-2008  
Faculty Fellow in Research, University of Arizona College of Engineering, 2011-2012

### **Professional Registration**

Registered Professional Engineer in Arizona and in Texas (Inactive)

## Research Activities

- Evaluation and Implementation Strategy of the National Intelligent Transportation Systems (ITS) Architecture, funded by the USDOT, Federal Highway Administration (Co-PI, \$662,000, 1993-1996)
- Comparable Systems Analysis of Automated Highway Systems: San Francisco's BART, funded by the USDOT, Federal Highway Administration (PI, \$40,000, 1993-1994)
- An Evaluation Taxonomy for Congestion Pricing, funded by the California PATH Program (Co-PI, \$85,000, 1994-1995)
- Strategies for Influencing Choice of Urban Travel Mode, funded by the Transit Cooperative Research Program of the Transportation Research Board (Co-PI, \$250,000, 1994-1996)
- Institutional and Information Inventory of California Transit Agencies, funded by the California PATH Program (PI, \$72,000, 1994-1995)
- Functional and Interface Requirements for Advanced Public Transportation Systems, funded by the California PATH Program (PI, \$87,288, 1995-1997)
- Real-Time Dispatching Algorithms for Integrated Transit Services, funded by the Southwest University Transportation Center (PI, \$36,250, 1997-1998)
- Evaluation of the Katy Freeway High-Occupancy / Toll Program, funded by Houston METRO (Co-PI, \$120,000, 1998-1999)
- Economic Evaluation of Transit Bus Design Standards, funded by the Southwest University Transportation Center (PI, \$40,000, 1998-1999)
- Traffic and Transit Management Integration, funded by Houston METRO (Co-PI, \$111,000, 1996-1999)
- Strategies for Improved Traveler Information, funded by the Transit Cooperative Research Program of the Transportation Research Board (Co-PI, \$78,000, 1997-2000)
- Methods for Real-Time Fleet Management and Customer Information, funded by the National Science Foundation (CAREER Award, PI, \$211,998, 2000-2004)
- Remote Sensing of Transportation Flows, funded by the USDOT, Research and Special Projects Administration (Co-PI, \$501,243, 2000-2004)
- ATLAS – ITS Phase IV, funded by the USDOT through the Arizona Department of Transportation (Co-PI, \$793,614, 2001-2004).
- Incorporating Safety into Long-Range Transportation Plans, funded by the National Cooperative Highway Research Program (Co-PI, \$500,000, 2002-2004)
- ATLAS – ITS Phase V, funded by the USDOT through the Arizona Department of Transportation (Co-PI, \$413,659, 2002-2004)
- Evaluation of the 511 Model Deployment, funded by the Arizona Department of Transportation (PI, \$50,000, 2003-2005)
- Development of a BRT System Architecture, funded through the California PATH Program (Co-PI, \$3750 sub-contract, 2005)
- ATLAS – ITS Phase VI, funded by the USDOT through the Arizona Department of Transportation (Co-PI, \$60,000 sub-project, 2005-2007)
- Platform for Evaluating Emergency Evacuation Strategies (Phase I), funded by the Arizona Department of Transportation (Co-PI, \$100,000, 2007-2008)

- Technical Support for DYNASMART-P, funded by the USDOT, Federal Highway Administration (Co-PI, \$165,363, 2007-2008)
- Integrated Corridor Management Tools, Strategies, and Deployment Support, funded by the USDOT, Federal Highway Administration (Research Team Member, \$306,423 subcontract to the University of Arizona, 2007-2009)
- Consortium for Remote Sensing of Traffic Activities (CRESTA), funded by the USDOT, Research and Innovative Technology Administration (PI, \$349,742, 2007-2009)
- Integrated Modeling of the Urban Continuum, funded by the USDOT, Federal Highway Administration (Research Team Member, \$230,000 subcontract to the University of Arizona, 2008-2012).
- Platform for Evaluating Emergency Evacuation Strategies (Phase II), funded by the Arizona Department of Transportation (Co-PI, \$200,000, 2011-2012).
- Partnership to Develop an Integrated, Advanced Travel Demand Model and a Fine-Grained, Time-Sensitive Network, Project C-10B, funded by the SHRP 2 program (Research Team Member, \$599,600 subcontract to the University of Arizona, 2009-2012).
- Enhanced Monitoring and Planning of Network Infrastructure with Remote Data Collection, funded by the USDOT, Research and Innovative Technology Administration (PI, \$507,538, 2010-2012).
- Evolutionary Agent-based System for Transportation Outlook (VASTO), funded by the USDOT, Federal Highway Administration (Research Team Member, \$1,224,170, 2011-2013).
- Civil Engineering Upper Division Core Cluster Online Program Development, funded by the Arizona Board of Regents, through the Anyplace Access for Arizonans (AAA) Technology Research Infrastructure Fund (TRIF) (Co-PI, \$40,000, 2010-2011).
- Civil Engineering Upper Division Core and Technical Elective Online Academic Program Build Out, funded by the Arizona Board of Regents, through the Anyplace Access for Arizonans (AAA) Technology Research Infrastructure Fund (TRIF) (Co-PI, \$60,000, 2011-2012).
- The Grand Challenges of Engineering: Transforming Undergraduate Education in Science, Technology, Engineering and Mathematics, funded by the National Science Foundation, (Investigator, \$290,000, 2011-2013).

## **Scholarly Publications**

### **Edited Book**

M. Hickman, P. Mirchandani, and S. Voss (eds.), Computer-Aided Systems in Public Transport, Lecture Notes in Economics and Mathematical Systems 600, Springer (Heidelberg), 2008.

### **Book Chapters**

M. Hickman, *Evaluating the Benefits of Bus Automatic Vehicle Location (AVL) Systems*, Chapter 5 in D. Levinson and D. Gillen (eds.), Assessing the Benefits and Costs of Intelligent Transportation Systems, Kluwer: Boston, 2004.

G. Desaulniers and M. Hickman, *Public Transit*, Chapter 2 in G. Laporte and C. Barnhart (eds.), Handbooks in Operations Research and Management Science: Transportation Systems. pp. 69-127, North-Holland, 2007.

Five modules as an introduction to public transit, published as a WikiBook. Modules are:

- Characteristics of Public Transit in the US
- Measures and Methods for Transit Demand
- Transit Operations and Capacity
- Transit Service Planning: Introduction and Strategic Decisions
- Transit Service Planning: Tactical Decisions

Each module represents one 50-minute lecture. The WikiBook provides an introduction suitable for a junior-level course in transportation engineering and planning. The last four modules are integrated into the WikiBook *Fundamentals of Transportation* under the “Transit” heading at [http://en.wikibooks.org/wiki/Fundamentals\\_of\\_Transportation](http://en.wikibooks.org/wiki/Fundamentals_of_Transportation).

### Refereed Journal Publications

- M. Hickman, H. Koutsopoulos, and N. Wilson, *A Strategic Model for Operator Workforce Planning in the Transit Industry*, Transportation Research Record No. 1165, pp. 60-68, 1988.
- M. Hickman, *A Comparable Systems Analysis of San Francisco’s BART: Lessons for Automated Highway Systems*, Transportation Research Record No. 1516, pp. 29-37, 1995.
- M. Hickman and N. Wilson, *Passenger Travel Time and Path Choice Implications of Real-Time Transit Information*, Transportation Research - Part C, Vol. 3C, No. 4, pp. 211-226, 1995.
- M. Hickman and T. Day, *An Assessment of Information Systems and Technologies at California Transit Agencies*, Transportation Research Record No. 1521, pp. 49-57, 1996.
- M. Hickman and D. Bernstein, *Transit Service and Path Choice Models in Stochastic and Time-Dependent Networks*, Transportation Science, Vol. 31, No. 2, pp. 129-146, 1997.
- H. Lo and M. Hickman, *Toward an Evaluation Framework for Road Pricing*, Journal of Transportation Engineering, Vol. 123, No. 4, pp. 316-324, 1997.
- M. Hickman, S. Tabibnia, and T. Day, *Evaluating Interface Standards for the Public Transit Industry*, Transportation Research Record No. 1618, pp. 172-179, 1998.
- A. Khattak and M. Hickman, *Automatic Vehicle Location and Computer Aided Dispatch Systems: Commercial Availability and Deployment in Transit Agencies*, Journal of Public Transportation Vol. 2, No. 1, pp. 1-26, 1998.
- S.W. Shin and M. Hickman, *The Effectiveness of the Katy Freeway HOV Lane Pricing Project: A Preliminary Assessment*, Transportation Research Record No. 1659, pp. 97-104, 1999.
- M. Hickman, Q. Brown, and A. Miranda, *Katy Freeway High-Occupancy Vehicle Lane Value Pricing Project, Houston, Texas: Evaluation of Usage*, Transportation Research Record No. 1732, pp. 32-41, 2000.
- D. Burdette and M. Hickman, *Investigation of Information Needs of Departing Air Passengers*, Transportation Research Record No. 1744, pp. 72-81, 2001.
- M. Hickman, *An Analytic Stochastic Model for the Transit Vehicle Holding Problem*, Transportation Science, Vol. 35, No. 3, pp. 215-237, 2001.
- A. Angel, M. Hickman, P. Mirchandani, and D. Chandnani, *Methods of Analyzing Traffic Imagery Collected from Aerial Platforms*, IEEE Transactions on Intelligent Transportation Systems, Vol. 4, No. 2, pp. 99-107, 2003.

- A. Sun and M. Hickman, *Scheduling Considerations for a Branching Transit Route*, Journal of Advanced Transportation, Vol. 38, No. 3, pp. 243-290, 2004.
- A. Sun and M. Hickman, *The Real-Time Stop-Skipping Problem*, Journal of Intelligent Transportation Systems, Vol. 9, No. 2, pp. 91-109, 2005.
- C. Cherry, M. Hickman, and A. Garg, *Design of a Map-Based Transit Itinerary Planner*, Journal of Public Transportation, Vol. 9, No. 2, pp. 45-68, 2006.
- J. Goldberg, K. Lansley, and M. Hickman, *Web-Based Engineering Economics – A Multi-semester Experiment*, International Journal of Engineering Education, Vol. 23, No. 2, 2007.
- Y. Lee, M. Hickman, and S. Washington, *Household Type and Structure, Time Use Pattern, and Trip Chaining Behavior*, Transportation Research – Part A, Vol. 41A, No. 10, pp. 1004-1020, 2007.
- H. Noh, Y.-C. Chiu, H. Zheng, M. Hickman, and P. Mirchandani, *Approach to Modeling Demand and Supply for a Short-Notice Evacuation*, Transportation Research Record No. 2091, pp. 91-99, 2009.
- H. Zheng, Y.-C. Chiu, P. Mirchandani, and M. Hickman, *Evacuation Modeling for a No-Notice Event in Phoenix, Arizona*, Transportation Research Record, No. 2196, pp. 65-74, 2010.
- J.-Q. Li, P. Mirchandani, and M. Hickman, *A Macroscopic Model for Integrating Bus Signal Priority with Vehicle Rescheduling*, Journal of Public Transport: Planning and Operations, Vol. 2, No. 3, pp. 159-172, 2010.
- N. Nassir, A. Khani, S. Lee, H. Noh, and M. Hickman, *Transit Stop-level Origin-Destination Estimation Through Use of Transit Schedule and Automated Data Collection System*, Transportation Research Record, No. 2263, pp. 140-150, 2011.
- S. Lee, M. Hickman, and D. Tong, *Stop Aggregation Model (SAM): Development and Application*, Paper accepted for publication in Transportation Research Record, 2012.
- X. Du and M. Hickman, *Estimating a Road Mask to Improve Vehicle Detection and Tracking in Airborne Imagery*, Paper accepted for publication in Transportation Research Record, 2012.
- A. Khani, S. Lee, M. Hickman, H. Noh, and N. Nassir, *An Intermodal Shortest and Optimal Path Algorithm Using a Transit Trip-Based Shortest Path*, Paper accepted for publication in Transportation Research Record, 2012.
- H. Noh, M. Hickman, and A. Khani, *Hyperpaths in a Transit Schedule-Based Network*, Paper accepted for publication in Transportation Research Record, 2012.
- N. Nassir, A. Khani, M. Hickman, and H. Noh, *An Intermodal Optimal Multi-Destination Tour Algorithm with Dynamic Travel Times*, Paper accepted for publication in Transportation Research Record, 2012.
- R. Pendyala, K. Kondhuri, Y.-C. Chiu, M. Hickman, H. Noh, P. Waddell, L. Wang, D. You, and B. Gardner, *Integrated Land Use-Transport Model System with Dynamic Time-Dependent Activity-Travel Microsimulation*. Paper accepted for publication in Transportation Research Record, 2012.
- S. Lee, M. Hickman, and D. Tong, *Development of a Temporal and Spatial Linkage between Transit Demand and Land Use Patterns*, Paper accepted for publication in Journal of Transportation and Land Use, 2012.

## Papers under Review

C.P. Chan and M. Hickman, *A Single Source Capacitated Facility Location Model with Stochastic Demand for the Carless Evacuation Problem*, Paper to be submitted to European Journal of Operational Research, March 2012.

## Refereed Conference Proceedings

M. Hickman, *Modeling Transit Path Choice in the Presence of Real-Time Information*, Paper presented at the 72<sup>nd</sup> Annual Meeting of the Transportation Research Board, January 1993.

H. Lo, M. Hickman, S. Weissenberger, B. Ran, and J. Larson, *Route Planning and Guidance: Potential Benefits and Implications for Public-Private Partnerships*, Proceedings of the 1995 Annual Meeting of the Intelligent Transportation Society of America, Washington, March 1995, Vol. 2, pp. 767-775.

M. Hickman and T. Day, *Organization and Use of Spatial Data at California Transit Agencies*, Proceedings of the GIS for Transportation (GIS-T) Symposium, Reno, April 1995, pp. 354-370.

S. Weissenberger, H. Lo, and M. Hickman, *A Methodology for Evaluating Systems Architectures*, Proceedings of the IEEE 6th International Conference on Vehicular Navigation and Information Systems, Seattle, July 1995, pp. 397-403.

H. Lo, M. Hickman, and S. Weissenberger, *A Structured Approach for ITS Architecture Representation and Evaluation*, Proceedings of the IEEE 6th International Conference on Vehicular Navigation and Information Systems, Seattle, July 1995, pp. 442-449.

M. Hickman, S. Weissenberger, H. Lo and R. Ice, *A Methodology for Systems Architecture Evaluation*, Proceedings of the Second World Congress on Intelligent Transportation Systems, Yokohama, November 1995.

H. Lo and M. Hickman, *Evaluation Taxonomy for Road Pricing*, Paper presented at the 75<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, January 1996.

M. Hickman and T. Day, *Advanced Information Technologies at California Transit Agencies*, Proceedings of the 1996 Annual Meeting of the Intelligent Transportation Society of America, Houston, April 1996, Vol. 1, pp. 9-17.

M. Hickman, S. Weissenberger, and J. Dahlgren, *Assessing the Benefits of a National ITS Architecture*, Proceedings of the Third World Congress on Intelligent Transportation Systems, Orlando, October 1996.

J. Dahlgren, S. Weissenberger, M. Hickman, and H. Lo, *Lessons from Case Studies of Advanced Transportation and Information Systems*, Proceedings of the Third World Congress on Intelligent Transportation Systems, Orlando, October 1996.

S. Weissenberger, J. Dahlgren, M. Hickman, and H. Lo, *Research and Testing for ITS Deployment and Operation*, Proceedings of the Third World Congress on Intelligent Transportation Systems, Orlando, October 1996.

- M. Hickman and K. Blume, *A Method for Scheduling Integrated Transit Service*, Papers from the 8<sup>th</sup> International Conference on Computer-Aided Scheduling of Public Transport, pp. 233–251, in Stefan Voss and Joachim Daduna (eds.), Lecture Notes in Economics and Mathematical Systems No. 505, Berlin: Springer-Verlag, 2001.
- J. Goldberg, M. Hickman, and K. Lansey, *Web-Based Engineering Science Course Modules: Overview and an Experiment in Engineering Economics*, Proceedings of the 2001 American Society for Engineering Education Annual Conference and Exposition, Session 2793, 2001.
- M. Hickman, *Perspectives on ITS Standards for Public Transit*, Proceedings of the IEEE Intelligent Transportation Systems Conference, pp. 1177-1182, 2001.
- A. Angel and M. Hickman, *Experimental Investigation of Travel Time Estimation Using Geo-referenced Aerial Video*, Paper presented at the 81st Annual Meeting of the Transportation Research Board (CD-ROM), January 2002.
- K. Mastako, L. Rilett, M. Hickman and E. Sullivan, *Commute Strategies, Choice Sets, and Revealed Strategy Choices in a Value-Priced Corridor*, Paper presented at the 81st Annual Meeting of the Transportation Research Board (CD-ROM), January 2002.
- A. Angel, M. Hickman, D. Chandnani, and P. Mirchandani, *Application of Aerial Video for Traffic Flow Monitoring and Management*, in Applications of Advanced Technology in Transportation, Proceedings of the Seventh International Conference, C.P. Wang, S. Madanat, S. Nambisan, and G. Spring (eds.), ASCE, Reston, VA, 2002, pp. 346-353.
- A. Angel, M. Hickman, P. Mirchandani, and D. Chandnani, *Methods of Traffic Data Collection Using Aerial Video*, Proceedings of the IEEE Intelligent Transportation Systems Conference, pp. 31-36, September 2002.
- M. Hickman, *Robust Passenger Itinerary Planning Using Transit AVL Data*, Proceedings of the IEEE Intelligent Transportation Systems Conference, pp. 840-845, September 2002.
- P. Mirchandani, M. Hickman, A. Angel and D. Chandnani, *Application of Aerial Video for Traffic Flow Monitoring and Management*, Proceedings of the Pecora 15 Conference (CD-ROM), November 2002.
- A. Angel and M. Hickman, *A Method for Analyzing the Performance of Signalized Intersections from Airborne Imagery*, Paper presented at the 82nd Annual Meeting of the Transportation Research Board (CD-ROM), January 2003.
- C. Cherry, A. Garg, and M. Hickman, *Map-Based Transit Itinerary Planning*, Proceedings of the GIS for Transportation (GIS-T) Symposium, March 2003.
- C. Cherry, A. Garg, and M. Hickman, *Development of a Map-Based Transit Itinerary Planner*, Paper presented at the 83<sup>rd</sup> Annual Meeting of the Transportation Research Board (CD-ROM), January 2004.
- Y. Lee and M. Hickman, *Household Type and Structure, Time Use Pattern, and Trip Chaining Behavior*, Paper presented at the 83<sup>rd</sup> Annual Meeting of the Transportation Research Board (CD-ROM), January 2004.
- A. Sun and M. Hickman, *The Holding Problem at Multiple Holding Stations*. In: M. Hickman, P. Mirchandani, and S. Voss (eds.), Computer-Aided Systems in Public Transport, Lecture Notes in Economics and Mathematical Systems 600, Springer (Heidelberg), 2008.
- A. Agrawal and M. Hickman, *Automated Extraction of Queue Lengths from Airborne Imagery*. Paper presented at the IEEE Intelligent Transportation Systems Conference, October 4-7, 2004.

- A. Sun and M. Hickman, *Vehicle Travel Time Prediction Using Primitive AVL Data*, Paper presented at the 85<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2006.
- A. Sun and M. Hickman, *Using Primitive AVL Data for Bus Travel Time Estimation*, Paper presented at the 10<sup>th</sup> International Conference on Computer-Aided Scheduling of Public Transport, June 2006.
- M. Hickman and P. Mirchandani, *Uses of Airborne Imagery for Microscopic Traffic Analysis*, in Applications of Advanced Technology in Transportation, Proceedings of the 9<sup>th</sup> International Conference, K. Wang, B. Smith, D. Uzarski, and S.C. Wong (eds.), ASCE, Reston VA, 2006, pp. 238-243.
- M. Hickman, C.-W. Tan, P. Lau, and W.-B. Zhang, *Development of a Hierarchical BRT System Architecture*, Paper presented at the IEEE Intelligent Transportation Systems Conference (CD-ROM), September 2006.
- P. Mirchandani, J.-Q. Li, and M. Hickman, *Macroscopic Model of Combining Bus Signal Priority and Vehicle Rescheduling*, Paper presented at the 86<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2007.
- A. Angel and M. Hickman, *Estimating Occupant Injury Severity in Two-Vehicle Crashes*, Paper presented at the 88<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2009.
- F. Ladron de Guevara, M. Hickman, and K.L. Head, *Evaluation of Resonant Cycles*, Paper presented at the 88<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2009.
- H. Noh, Y.-C. Chiu, H. Zheng, M. Hickman, P. Mirchandani, *Approach to Modeling Demand and Supply for a Short-Notice Evacuation*, Paper presented at the 88<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2009.
- M. Hickman and Y.-C. Chiu, *An Approach for Integrated Dynamic Transit and Traffic Simulation and Assignment*, Paper presented at the 11<sup>th</sup> International Conference on Advanced Systems in Public Transport, July 2009.
- P. Mirchandani, J.-Q. Li, and M. Hickman, *A Macroscopic Model for Integrating Bus Signal Priority with Vehicle Rescheduling*, Paper presented at the 11<sup>th</sup> International Conference on Advanced Systems in Public Transport, July 2009.
- D. Anjos, P. Mirchandani, M. Hickman, S. Lee, and Y.-C. Chiu, *Data Collection and Calibration of Simulation Models of Border Inspection Facilities*, Paper presented at the 89<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2010.
- N. Nassir, A. Khani, S. Lee, H. Noh, and M. Hickman, *Transit Stop-level O-D Estimation Using Transit Schedule and Automated Data Collection System*, Paper presented at the 90<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2011.
- S. Lee and M. Hickman, *Travel Pattern Analysis Using Smart Card Data of Regular Users*, Paper presented at the 90<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2011.
- S. Lee, M. Hickman, and D. Tong, *Development of a Temporal and Spatial Linkage between Transit Demand and Land Use Patterns*, Paper to be presented at the First World Symposium on Transport and Land Use Research, Whistler, BC, August 2011.

**Presentations** (in addition to conferences listed previously)

*The Impact of Real-Time Information on Transit Passenger Behavior*, Submitted presentation, INFORMS Annual Meeting in Chicago, May 17, 1993.

*Departure Time Choice Modeling in Public Transit*, Submitted presentation, INFORMS Annual Meeting in Phoenix, November 3, 1993.

*Transit Path Choice Modeling with Real-Time Information*, Presented at the INFORMS Annual Meeting in Boston, April 26, 1994.

*A Stochastic and Time-Dependent Transit Path Assignment Model*, Submitted presentation, INFORMS Annual Meeting in Detroit, October 26, 1994.

*Modeling Transit Mode Shift from Peak Period Roadway Pricing*, Submitted presentation, INFORMS Annual Meeting in Washington, May 8, 1996.

*A Model for Transit Real-Time Control*, Submitted presentation, INFORMS Annual Meeting in Dallas, October 28, 1997.

*Techniques for Scheduling Integrated Transit Service*, Submitted presentation, INFORMS Annual Meeting in Seattle, October 26, 1998.

*Public Transit and ITS*, Invited presentation, Advanced Institute for Transportation Management and Information Systems, University of Texas at Austin, February 28, 1997.

*Remote Sensing for Traffic Flows*, Invited presentation, North American Travel Monitoring Exposition and Conference (NATMEC), Madison (WI), August 26, 2000.

*Rethinking Holding as a Transit Operations Control Strategy*, Submitted presentation, INFORMS Annual Meeting in San Antonio, November 6, 2000.

*HOV and HOT Lanes: Experience and Opportunities*, Invited presentation, Arizona Roads and Streets Conference, Tucson, April 15, 2001.

*ATIS and User Behavior in Transit Path Choice*, Invited presentation, Advanced Course on Transit Networks, University of Rome “Tor Vergata”, May 23–25, 2001.

*Air- and Space-Based Remote Sensing of Traffic Flows*, Invited presentation, IEEE Intelligent Transportation Systems Conference, August 27, 2001.

*Using Current Bus Location Information in Passenger Itinerary Planning*, Submitted presentation, INFORMS Annual Meeting in Miami Beach, November 4, 2001.

*Where’s the Bus? Or, Useful Things to Do with New Bus Location Technology*, Invited presentation, Department of Civil Engineering, University of Illinois – Chicago, November 16, 2001.

*Are Shortest Paths Always the Shortest?* Invited presentation, Department of Systems and Industrial Engineering, University of Arizona, April 18, 2002.

*An Investigation of the Use of Aerial Video for Traffic Data Collection*, Invited presentation, NATMEC, Orlando, May 13, 2002.

*Traffic Flows from Airborne Platforms*, Invited presentation, International Workshop on Satellite-Based Traffic Measurement, Berlin, September 9, 2002.

*Airborne Imagery for Traffic Monitoring and Management*, Invited presentation, Workshop on Remote Sensing of Transportation Flows, Budapest, September 13, 2002.

*Where’s the Bus? Or, Useful Things to Do with New Bus Location Technology*, Invited presentation, Institute of Transportation Studies, University of California - Berkeley, April 25, 2003.

*Application of Time-Dependent, Stochastic Shortest Paths for Improved Passenger Itinerary Planning*, Invited presentation, GERAD, University of Montreal, August 13, 2003.

*Sun Tran Real-Time Transit Data: Where is the Bus?* Invited presentation, ITS-Arizona Annual Meeting, Phoenix, October 8, 2003.

*Real-Time Vehicle Dispatching at a Transit Transfer Terminal*, Submitted presentation, INFORMS Annual Meeting in Atlanta, October 19, 2003.

*Travel Time Reliability Measures for Transit Itinerary Planning*, Invited presentation, Hong Kong Polytechnic University, March 18, 2004.

*Incorporating Safety into Project Planning*, Invited presentation, Arizona Roads and Streets Conference, Tucson, April 9, 2004.

*Automated Microscopic Traffic Data from Aerial Video*, Invited presentation, NATMEC, San Diego, June 28, 2004.

*A Method for Incorporating Reliability in Transit Itinerary Planning*. Submitted presentation, 9<sup>th</sup> International Conference on Computer-Aided Scheduling of Public Transport, August 10, 2004.

*Traffic Data Collection Using Airborne Platforms*, Workshop on Traffic Modeling and Simulation, Sedona, September 20, 2005.

*Turning Transportation Research into Practice: Transportation Engineering at the University of Arizona*, Invited presentation, Annual Meeting of the Arizona Section of ASCE, Tucson, November 4, 2005.

*The Good, the Bad, and the Ugly...and, What Are We Doing About It?* Invited presentation, Arizona Roads and Streets Conference, Tucson, April 14, 2006.

*Uses of Airborne Imagery for Traffic Analysis*, Invited presentation, NATMEC, Minneapolis, June 6, 2006.

*Planning for Evacuation of Low-Mobility Groups*, Submitted presentation, INFORMS, Pittsburgh, November 6, 2006.

*Planning for the Use of Public Transport in Evacuations: Model Framework and Selection of Evacuation Sites* (presented by co-author Chi Pak Chan), Submitted presentation, Hong Kong Society of Transportation Studies, Hong Kong, December 2006.

*Challenges and Opportunities to Incorporate Transit in Integrated Corridor Models* (presented by co-author Yi-Chang Chiu), Invited presentation, Workshop for Simulation Practices, Needs, and Challenges for Corridor Management, Presented at the 86<sup>th</sup> Annual Meeting of the Transportation Research Board, January 2007.

*An Investigation of the Capacity to Evacuate the Carless* (presented by co-author Chi Pak Chan), Submitted presentation, National Conference on Disaster Planning for the Carless Society, New Orleans, February 9, 2007.

*Human-Centered Transport in Hong Kong: Public Transport*, Invited presentation, International Symposium of the Implementation of Humanity-Oriented Transportation Development Concept, Taipei, Taiwan, March 8, 2007.

*Modeling the Use of Public Transport in Evacuations*, Invited presentation, Chinese University of Hong Kong, May 18, 2007.

*History and Overview of Network Modeling, Transit Network Modeling, and Transit Service and Operations Planning* (3 presentations), Short Course on Multi-Modal Traffic and Transit Network Modeling, Hong Kong Polytechnic University, May 28-29, 2007.

*Modeling the Use of Public Transport in Evacuations*, Invited presentation, University of Hamburg, July 12, 2007.

*Transit Vehicle Routing for the Evacuation of the Carless*, Submitted presentation, INFORMS, Seattle, November 4, 2007.

*Revisiting Dynamic Transit Assignment*, Submitted presentation, INFORMS, Seattle, November 5, 2007.

*Airborne Traffic Flow Data and Traffic Management*, Submitted presentation, Symposium on the 75th Anniversary of Greenshields, Transportation Research Board, Traffic Flow Theory Committee, Woods Hole, July 8-10, 2008 (with P. Mirchandani).

*Truck Flow Management Through Remote Sensing*, Submitted presentation, North American Traffic Monitoring Exhibition and Conference (NATMEC), Washington DC, August 6-9, 2008 (with P. Mirchandani).

*Use of Various ITS Technologies for BRT*, Invited presentation, International Workshop on Bus Rapid Transit, Santiago, Chile, August 28, 2008.

*Stochastic Transit Assignment with Boarding Decisions*, Submitted presentation, INFORMS, Washington DC, October 14, 2008.

*Short-notice, Multi-modal Evacuation Modeling*, Submitted presentation, INFORMS, Washington DC, October 15, 2008 (with Y.-C. Chiu and H. Noh).

*OR Challenges in the Evacuation of the Carless*, Invited presentation, INFORMS, Washington DC, October 13, 2008.

*Modeling Port-of-entry Through Multi-resolution Traffic Simulation and Remote Sensing Techniques*, Submitted presentation, INFORMS, Washington DC, October 12, 2008 (with Y.-C. Chiu, D. Anjos, B. Bustillos, Y. Jang, P. Mirchandani, and Y. J. Son)

*Modeling the Use of Public Transport for Evacuations*, Invited presentation, Department of Management Information Systems, University of Arizona, February 13, 2009.

*Large Scale Simulation Modeling of Events for Phoenix*, Invited presentation, ITE National Conference on Transportation for Planned and Unplanned Events, March 25, 2009.

*Dynamic Transit and Traffic Assignment*, Submitted presentation, INFORMS, San Diego, October 11, 2009.

*Emergency Transportation for Low-Mobility Groups*, Submitted presentation, INFORMS, San Diego, October 11, 2009 (with C.-P. Chan).

*Arc Routing for Evacuation*, Submitted presentation, INFORMS, San Diego, October 14, 2009 (with M. Dror).

*Dynamic Transit and Traffic Assignment: Preliminary Thoughts on Match-making*, Invited Presentation, Northwestern University, October 29, 2009.

*ITS Technologies for Public Transit*, Invited Presentation, Indo-US Workshop on Emerging Trends in Intelligent Transportation Systems (ITS), Indian Institute of Technology (IIT) – Madras, Chennai, India, February 11-13, 2010.

*Thoughts on Transit and ITS Research*, Invited Presentation, US Department of Transportation, ITS Joint Program Office Strategic Research Workshop, April 28, 2010.

*Identifying and Tracking Individual Vehicles from Low-Cost Airborne Platforms*, Invited Presentation, 90<sup>th</sup> Annual Meeting of the Transportation Research Board, Washington, DC, January 23, 2011 (with P. Mirchandani).

*Using Transit ITS Data to Understand Demand Patterns*, Invited Presentation, Spring Conference, Arizona Section of ITE, Phoenix, March 9, 2011.

*Understanding Traffic Behaviors from Video*, Invited Presentation, Southern Arizona Chapter of ITE, Tucson, April 15, 2011.

*Understanding Traffic Behaviors from Video*, Invited Presentation, Arizona Roads and Streets Conference, Tucson, April 21, 2011.

*A Logit-based Transit Assignment Using Gradient Projection with the Priority of Boarding on a Transit Schedule Network*, Submitted presentation, INFORMS, Charlotte, November 14, 2011 (with Hyunsoo Noh).

*Transit Vehicle Routing Methods for Large-Scale Evacuation*, Submitted presentation, INFORMS, Charlotte, November 15, 2011 (with Moshe Dror).

*Concepts from Public Transit Applications*, Submitted presentation, INFORMS, Charlotte, November 15, 2011.

*Inferring Transit Passenger Behavior*, Invited Presentation, Institute of Transportation Studies, University of California, Berkeley, March 9, 2012.

### **Courses Taught**

CVEN 307 Transportation Engineering (Texas A&M University)  
CVEN 422 Civil Engineering Systems II (Texas A&M University)  
CVEN 632 Transportation Systems Management (Texas A&M University)

ENGR 102 Introduction to Engineering  
CE 363 Transportation Engineering and Pavement Design  
CE 462A / 562A Public Transit Planning and Operations  
CE 463 / 563 Traffic Flow and Capacity Analysis  
CE 466 / 566 Highway Geometric Design  
CE 467 / 567 Highway Safety and Operations  
CE 468 / 568 Urban Transportation Planning  
CE 469 / 569 Travel Demand Modeling  
CE 596A Civil Engineering Graduate Seminar  
CE 663 Advanced Transportation Modeling and Analysis  
CE 664 Transportation Economics

CSE 561 Public Transport: Operations & Service Planning (Hong Kong Polytechnic University)

### **Student Research Supervision** (at the University of Arizona, unless otherwise noted)

#### Ph.D.

Aichong Sun (May 2005)  
Alejandro Angel (December 2008)  
Chi-Pak Chan (Systems and Industrial Engineering) (May 2010)  
Sarah Simpson (August 2010)  
Hyunsoo Noh (expected August 2012)  
Sanggu Lee (expected August 2012)  
Felipe Ladrón de Guevara (expected December 2012)  
Neema Nassir  
Alireza Khani  
Xueyan Du  
Ehsan Jafari

#### M.S. (with Thesis)

Srikanth Ojili (1999, Texas A&M University)  
Debra Burdette (2000, Texas A&M University)

Rachel Donovan (2000, Texas A&M University)  
Dena Jackson (2000, Texas A&M University)  
Kelly Blume (2001, Texas A&M University)  
Alejandro Angel (2002)  
Christopher Cherry (2003)  
Ashish Agrawal (2004)  
Yuhwa Lee (2004)  
Felipe Ladrón de Guevara (2005)  
Shuo Wang (2011)  
Michelle Bording (expected May 2012)

M.S. (with Project Report)

Jason Vaughn (1998, Texas A&M University)  
Sung Woong Shin (1998, Texas A&M University)  
Troy Rother (1999, Texas A&M University)  
Kollan Pillay (1999, Texas A&M University)  
Sung Shik Shin (1999, Texas A&M University)  
William Hanson (2005)  
Frank Pierson (2005)  
Radhika Mothkuri (2005)  
Adina Alpert (2006)  
Steven Wilson (Systems and Industrial Engineering, 2011)  
Kurt Lehan (expected May 2012)

Graduate Research (not for a degree)

Theodore Day (1996, University of California, Berkeley)  
J. Pierce Gould (1996, University of California, Berkeley)  
Sam Tabibnia (1997, University of California, Berkeley)  
Michaela Buch (1998, Texas A&M University)  
Anirudh Garg (2003, Computer Science)  
Supratik Maitra (2003, Computer Science)  
Fan Wu (2004, Systems and Industrial Engineering)

Undergraduate Research

Roberto Rivera (1997, Texas A&M University)  
Matthew Hotelling (1998, Texas A&M University)  
Quanta Brown (1999, Texas A&M University)  
Alejandro Miranda (1999, Texas A&M University)  
Carlos Sanchez Soria (2001-2003)  
(Ryan) James Hatch (2002-2004)  
Katharine Borg (2012)

## **Service Activities**

### International

Associate Editor, Transportation Science, 2007-Present

Area Editor, Journal of Transportation Engineering, 2009-Present

Editorial Board, Public Transport Planning and Operations, 2009-Present

Area Editor for Mass Transit, Journal of Intelligent Transportation Systems, 1999-2006

Program Committee, IEEE Intelligent Transportation Systems Conference, 2001 and 2002

INFORMS Transportation Science and Logistics Society, Dissertation Award Committee, 2003-2006

Chair of Committee, 2006

Conference Chair, 9<sup>th</sup> International Conference on Computer-Aided Scheduling of Public Transport (CASPT), August 2004

Program Committee, International Conference on Advanced Systems in Public Transport (CASPT), 2006, 2009, 2012

### National

Transit Communications Interface Protocols, Technical Advisory Group Member, 1997-2004

Passenger Information Systems sub-group, Co-chair, 1997-2003

Technical Working Group 2 Member, 2003-2004

Leadership Team, National Consortium on Remote Sensing in Transportation – Flows, 2000-2004

Leadership Team, Consortium for Remote Sensing of Traffic Activities (CRESTA), 2007-2010

Transit Cooperative Research Program (TCRP), Transportation Research Board

Panelist, Project A-31; Transit, Call Centers, and 511: A Guide for Decision Makers

Panelist, Project SA-17; AVL Systems for Bus Transit Update

### State/Local

Program Committee, Arizona Roads and Streets Conference, 2000, 2001, 2005, and 2006

Arizona Section of ITE, Treasurer (2009-2010), Secretary (2010-2011), Vice President (2011-Present)

### College

Member, Millenium Committee, 2002-2004

Faculty Representative, Master of Engineering Partnership, Coordinating Board, 2004-2006

Member, Search Committee, Associate Director of Development, 2006

Chair, Search Committee, Interim Associate Dean for Academic Affairs, 2008

Member, Research Committee, School of Sustainable Engineered Systems, 2009-Present

Member, Faculty Status Audit Committee, 2009-2010

Member, Sabbatical Leave Review Committee, 2009-2011

Department (Civil Engineering and Engineering Mechanics, unless otherwise noted)

Member, Undergraduate Curriculum Studies Committee, 2000-2006, 2008-Present

Member, Graduate Curriculum Studies Committee, 2000-2001, 2006-2007

Member, Undergraduate Labs Committee, 2000-2001, 2008-Present

Member, Faculty Search Committee (Transportation), 2000-2001

Member, Faculty Search Committee (Transportation), 2000-2001, Systems & Industrial Engineering  
Member, Scholarship Committee, 2003-Present; Chair, 2003-2007, 2009-Present  
Member, ABET Committee, 2003-2004, 2009-2010  
Faculty Advisor, Student Chapter of the Institute of Transportation Engineers (ITE), 2003-Present  
Chair, Faculty Search Committee (Transportation), 2005-2006  
Member, Strategic Planning Committee, 2005-2008  
Faculty Associate, University-wide ADVANCE Program, 2007-2009  
Member, Faculty Promotion and Tenure Review Committee, 2009-Present  
Member, Annual Performance Evaluation Committee, 2009-Present

### **Professional Affiliations**

Member, Institute of Transportation Engineers  
Member, Institute for Operations Research and Management Science (INFORMS)  
Member, Transportation Science and Logistics Society  
Transportation Research Board  
Member, Network Modeling Committee, 1997-2009  
Member, Transit, Freight and Logistics Modeling Subcommittee, 2002-Present  
Chair of Sub-committee, 2007-2011  
Member, Public Transportation Planning and Development Committee, 2002-2008  
Member, Transit Management and Performance Committee, 1999-2008  
Member, Transportation Economics Committee, 1999-2002

### **Paper Reviews (on a regular basis)**

IEEE Transactions on Intelligent Transportation Systems  
Journal of Intelligent Transportation Systems  
Transportation Science  
Transportation Research, Parts B and C  
Transportation Research Record: Journal of the Transportation Research Board  
Public Transport Planning and Operations  
ASCE Journal of Transportation Engineering  
European Journal of Operational Research  
Computer-Aided Civil and Infrastructure Engineering