Curriculum Vitae – David John Lovell

Notarization. I have read the following and certify that this *curriculum vitae* is a current and accurate statement of my professional record.

Signature__  _____ Date__12/06/2022_____

I. Personal Information

I.A. UID, Last Name, First Name, Middle Name, Contact Information

1. UID 104978250
2. Lovell, David John
3. Department of Civil and Environmental Engineering
4. 1173 Martin Hall
5. College Park, MD 20742
6. lovell@umd.edu, www.eng.umd.edu/~lovell

I.B. Academic Appointments at UMD

2020 – present	Director, Gemstone Honors Program, University of Maryland, College Park
2016 – present	Professor, Department of Civil and Environmental Engineering and Institute for Systems Research, University of Maryland, College Park
2003 – 2016	Associate Professor, Department of Civil and Environmental Engineering and Institute for Systems Research, University of Maryland, College Park
1997 – 2003	Assistant Professor, Department of Civil and Environmental Engineering, University of Maryland, College Park

I.C. Other Employment

2017 – 2018	Visiting Professor, Department of Civil and Environmental Engineering, University of Hawai'i, Manoa
2006 – 2007	Visiting Associate Professor, Department of Civil and Environmental Engineering, Massachusetts Institute of Technology
1992 – 1997	Graduate Student Researcher and Instructor, University of California, Berkeley
1989 – 1992	Transportation Analyst, Kittelson & Associates, Inc., Portland, OR
1986 – 1992	Combat Engineer, United States Marine Corps Reserve

I.D. Educational Background

University of California, Berkeley, CA
1997, Ph.D. in Civil and Environmental Engineering
1993, M.S. in Civil Engineering
Portland State University, Portland, OR
1990, B.A. in Mathematics with honors

II. Research, Scholarly and Creative Activities

II.A. Articles in Refereed Journals

***** Denotes a co-author who was a student under my supervision when the research was conducted

1. Bacon, V.W., D.J. Lovell, A.D. May, and M. Van Aerde (1994). Use of the INTEGRATION model to study high occupancy vehicle facilities. *Transportation Research Record* 1446, pp. 8-13.
2. Lawson, T., D.J. Lovell, and C.F. Daganzo (1997). Using the input-output diagram to determine the spatial and temporal extents of a queue upstream of a bottleneck. Transportation Research Record 1572, pp. 140-147.
3. del Castillo, J.M., D.J. Lovell, and C.F. Daganzo (1997). Technical and economic viability of automated highway systems: Preliminary analysis. *Transportation Research Record* 1588, pp. 130-136.
4. *Jha, M.K. and D.J. Lovell (1999). Trip generation characteristics of free-standing discount stores: A case study. *Institute of Transportation Engineers Journal* on the Web, 69(5), pp. 85-89.
5. Lovell, D.J. (1999). Automated calculation of sight distance from horizontal geometry. *ASCE J. Transportation Engineering*, 125(4), pp. 297-304.
6. Lovell, D.J. and C.F. Daganzo (2000). Access control on networks with unique origin-destination paths. *Transportation Research B*, 34(3), pp. 185-202.
7. Lovell, D.J., *J.-C. Jong, and P.C. Chang (2000). Clear zone requirements based on horizontal sight distance considerations. *Transportation Research A*, 35(5), pp. 391-411.
8. Lovell, D.J., *J.-C. Jong, and P.C. Chang (2001). Improvements to a sight distance algorithm. *ASCE J. Transportation Engineering*, 127(4), pp. 283-288.
9. Manikonda, V., R. Levy, G. Satapathy, D.J. Lovell, P.C. Chang, and A. Teittinen (2001). Autonomous agents for traffic simulation and control. *Transportation Research Record* 1774, pp. 1-10.
10. Lovell, D.J. (2001). Accuracy of speed measurements from cellular phone vehicle location systems. *Intelligent Transportation Systems Journal*, 6(4), pp. 303-325.
11. Erera, A.L., C.F. Daganzo, and D.J. Lovell (2002). The access-control problem on capacitated FIFO networks with unique O-D paths is hard. *Operations Research*, 50(4), pp. 736-743.
12. Lovell, D.J. and *T. Iida (2003). The exact clear zone envelope for piecewise-linear alignment data. *Transportation Research B*, 37(5), pp. 485-499.
13. *Ngamchai, S. and D.J. Lovell (2003). Optimal time transfer in bus transit route network design using a genetic algorithm. *ASCE J. Transportation Engineering*, 129(5), pp. 510-521.

14. *Kim, T., D.J. Lovell, Y. Park, and M. Chang (2003). A new methodology to overcome memoryless property of car-following models. *Journal of the Eastern Asia Society for Transportation Studies* (EASTS), 5, pp. 1194-1210.
15. *Kim, E., *M.K. Jha, D.J. Lovell, and P. Schonfeld (2004). Intersection modeling for highway alignment optimization. *J. Computer-Aided Civil and Infrastructure Engineering,* 19, pp. 119-129.
16. *Iida, T. and D.J. Lovell (2007). Convergence of piecewise-linear envelope curves in transportation design. *Transportation Research Part B*, 41(5), pp. 527-539.
17. *Kim, T., D.J. Lovell, and Y. Park (2007). Empirical analysis of underlying mechanisms and variability in car-following behavior. *Transportation Research Record* 1999, pp. 170-179.
18. *Kim, H., *T. Kim, and D.J. Lovell (2007). Extended diamond interchanges with roundabouts including local roads for rural crossings. *Journal of the Eastern Asia Society for Transportation Studies* (EASTS), 7, pp. 2090-2103.
19. *Kim, H., M. Shin, B. Nam, and D.J. Lovell (2008). Designing a simulation framework for vehicular ad hoc network applications. *Journal of Korean Society of Transportation*, 26(6), pp. 93-101.
20. Bertini, R.L. and D.J. Lovell (2009). Impacts of sensor spacing on accurate freeway travel time estimation for traveler information. *Journal of Intelligent Transportation Systems*, 13(2), pp. 97-110.
21. *Ganji, M., D.J. Lovell, M.O. Ball, and *A. Nguyen (2009). Resource allocation in flow-constrained areas with stochastic termination times. *Transportation Research Record* 2106, pp. 90-99.
22. *Churchill, A.M., D.J. Lovell, and M.O. Ball (2010). Flight delay propagation impact on strategic air traffic flow management. *Transportation Research Record* 2177, pp. 105-113.
23. *Kim, T., D.J. Lovell, *H. Kim, and C. Oh (2010). Empirical results of effects of various causal factors on car-following behavior. *Transportation Research Record* 2188, pp. 174-186.
24. *Churchill, A.M. and D.J. Lovell (2011). Assessing the impact of stochastic capacity variation on coordinated air traffic flow management. *Transportation Research Record* 2214, pp. 111-116.
25. *Churchill, A.M. and D.J. Lovell (2012). Coordinated aviation network resource allocation under uncertainty. *Transportation Research Part E*, 48(1), pp. 19-33.
26. *Churchill, A.M., Y. Tripodis, and D.J. Lovell (2012). Sun glare impacts on freeway congestion: A geometric model and empirical analysis. *ASCE J. Transportation Engineering,* 138(10), pp. 1196–1204.
27. Lovell, D.J., *K. Vlachou, T. Rabbani, and A. Bayen (2013). A diffusion approximation to a single airport queue. *Transportation Research Part C*, 33, pp. 227-237.
28. *Vlachou, K. and D.J. Lovell (2013). Mechanisms for equitable resource allocation when airspace capacity is reduced. *Transportation Research Record* 2325, pp. 97-102.
29. *Churchill, A.M., D.J. Lovell, A. Mukherjee, and M.O. Ball (2013). Determining the number of airport arrival slots. *Transportation Science*, 47(4), pp. 526-541.
30. Maring, E., *G. Raspanti, *G. Jaschek, *K. Hogan, *C. Farmer, D. Lovell, S. Grutzmacher, *P. Parikh, and *S. Olcese (2014). Engineering and public health: An interdisciplinary approach to addressing water quality in Compone, Peru. *Annals of Global Health*, Volume 80, Issue 3, May–June 2014, Page 238.

31. *J.C. Jones and D.J. Lovell (2014). Methods for curbing the exemption bias in Ground Delay Programs through speed control, *Transportation Research Record* 2400, pp. 37-44.
32. *Brown, C.Y., *T.A. Brubaker, *A.M. Churchill, *G.M. Crosswhite, *D. Fried, *L. Kirsch, *D.A. Zelman, and D.J. Lovell (2015). Development of an electrophoretic display technology for selectively retroreflective signs and pavement markers. *ASCE Journal of Transportation Engineering*, 141(1), pp. 04014067-1-9.
33. *Shrestha, D., D.J. Lovell, and Y. Tripodis (2017). Hardware and software for collecting microscopic trajectory data on naturalistic driving behavior. *Journal of Intelligent Transportation Systems*, 21(3), 202-213.
34. *Jones, J.C., D.J. Lovell, and M.O. Ball (2018). Stochastic optimization models for transferring delay along flight trajectories in order to reduce fuel usage. *Transportation Science*, 52(1), 134-149.
35. Lovell, D.J. (2018). Lossless compression of all vehicle trajectories in a common roadway segment. *Computer-Aided Civil and Infrastructure Engineering*, 33, 481-497.
36. Estes, A., D.J. Lovell, and M.O. Ball (2019). Unsupervised prototype reduction for data exploration and an application to air traffic management initiatives. *EURO Journal on Transportation and Logistics* 8(5), 467-510.
37. Lovell, D.J. (2019). Kinematics-enabled lossless compression of freeway and arterial vehicle trajectories. *Journal of Intelligent Transportation Systems* 23(5), 452-476. Doi: 10.1080/15472450.2018.1560280
38. Estes, A., M. O. Ball, and D. J. Lovell (2021). Data exploration by representative region selection: Axioms and convergence. *Mathematics of Operations Research* 46(3), 970-1007.
39. Liu, Y., M. Hansen, M.O. Ball, and D.J. Lovell (2021). Causal analysis of en route flight inefficiency. *Transportation Research Part B* 151, 91-115.

II.B. Published Conference Proceedings

II.B.1. Refereed Conference Proceedings

1. Lovell, D.J. and A.D. May (1994). Development of TRARR model user interface and assessment of passing lanes on two-lane highways. *Proceedings of the Second International Symposium on Highway Capacity*, Sydney, Australia, Volume 2, pp. 409-425, Australian Road Research Board.
2. Lovell, D.J., *J.-C. Jong, and P.C. Chang (2000). Generating sight distance profiles for arbitrary horizontal alignments with non-uniform lateral clearance. *Proceedings of the 2nd International Symposium on Highway Geometric Design*, Mainz, Germany, pp. 422-433.
3. Manikonda, V., A. Teittinen, and D.J. Lovell (2000). Decentralized adaptive agents for control of traffic signals. *Proceedings of the International Congress on Intelligent Systems and Applications*, Sydney, Australia, December, 2000.
4. Smith, B.L., M.L. Pack, D.J. Lovell, and M.W. Sermons (2001). Transportation management applications of anonymous mobile call sampling. *Proceedings of the 11th Annual Meeting of ITS America*, Miami, Florida.
5. Manikonda, V., A. Teittinen, and D.J. Lovell (2001). Decentralized adaptive agents for control of traffic signals. *Proceedings of the International Congress on Information Science* Innovations, Dubai, United Arab Emirates.

6. Lovell, D.J. and W.S. Levine (2001). The freeway access control problem – A survey of successes and continuing challenges. *2001 IEEE Intelligent Transportation Systems Proceedings*, 4th International IEEE Conference on Intelligent Transportation Systems, Oakland, CA, pp. 542-547.
7. *Kim, T. and D.J. Lovell (2005). Observation of real driving behavior in car-following: preliminary results. In: Proceedings of the 61st Semiannual IEEE Vehicular Technology Conference, Stockholm, Sweden, 2005.
8. Mukherjee, A., D.J. Lovell, M.O. Ball, A.R. Odoni, and G. Zerbib (2005). Modeling delays and cancellation probabilities to support strategic simulations. In: Proceedings of the 2005 Air Traffic Management Research and Development Seminar, Baltimore, MD.
9. Ball, M.O., R. Hoffman, D.J. Lovell, and A. Mukherjee (2005). Response mechanisms for dynamic air traffic flow management. In: Proceedings of the 2005 Air Traffic Management Research and Development Seminar, Baltimore, MD.
10. *Kim, T., *H. Kim, and D.J. Lovell (2005). Traffic flow forecasting: Overcoming memoryless property in nearest neighbor non-parametric regression. In: Proceedings of the 8th International IEEE Conference on Intelligent Transportation Systems, Vienna, Austria.
11. *Kim, H. and D.J. Lovell (2006). Traffic information imputation using a linear model in vehicular ad hoc networks. In: Proceedings of the 9th International IEEE Conference on Intelligent Transportation Systems, Toronto, Canada.
12. *Kim, H. and D.J. Lovell (2006). Determining spatio-temporal limits of traffic information for imputation in vehicular ad hoc networks. In: Proceedings of the 13th World Congress and Exhibition on ITS, London, United Kingdom.
13. *Kim, H., D.J. Lovell, *Y. Kang, and *W. Kim (2007). Data quantity for reliable traffic information in vehicular ad hoc networks. In: IEEE Vehicular Technology Conference, art. no. 4349948, pp. 1401-1405.
14. Lovell, D.J. *A.M. Churchill, M.O. Ball, A. Odoni, and A. Mukherjee (2007). Calibrating aggregate models of flight delays and cancellation probabilities at individual airports. In: Proceedings of the 2007 Air Traffic Management Research and Development Seminar, Barcelona, Spain.
15. *Churchill, A.M., D.J. Lovell, and M.O. Ball (2007). Examining the effects of prior arrival delays on later arrival delays: Case studies in delay propagation. In: Proceedings of the 2007 Air Traffic Management Research and Development Seminar, Barcelona, Spain.
16. Mukherjee, A., D. J. Lovell, M. O. Ball, A. *Churchill, and A. R. Odoni (2007). Using optimization and queuing models to estimate long-term average flight delays and cancellation rates. TRISTAN VI, Bentota, Sri Lanka.
17. *Churchill, A.M., *K. Vlachou, and D.J. Lovell (2008). Filtering and aggregation schemes for delay model calibration. In: Proceedings of the 3rd International Conference on Research in Air Transportation, Fairfax, VA.
18. *Ganji, M., *A. Nguyen, D.J. Lovell, and M.O. Ball (2008). Resource allocation in flow-constrained areas with stochastic termination times. In: Proceedings of the 3rd International Conference on Research in Air Transportation, Fairfax, VA.
19. *Ganji, M., D.J. Lovell, and M.O. Ball (2009). Resource allocation in flow-constrained areas with stochastic termination times considering both optimistic and pessimistic reroutes. In: Proceedings of the 2009 Air Traffic Management Research and Development Seminar, Napa Valley, CA.

20. Hansen, M., T. Nikoleris, D.J. Lovell, *K. Vlachou, and A. Odoni (2009). Use of queuing models to estimate delay savings from 4D trajectory precision. In: Proceedings of the 2009 Air Traffic Management Research and Development Seminar, Napa Valley, CA.
21. *Churchill, A.M., D.J. Lovell, and M.O. Ball (2009). Evaluating a new formulation for large-scale traffic flow management. In: Proceedings of the 2009 Air Traffic Management Research and Development Seminar, Napa Valley, CA.
22. *Tien, S.-L. and D.J. Lovell (2009). Modeling surface delay due to super heavy transports in a large-scale simulation environment. In: AIAA/IEEE Digital Avionics Systems Conference - Proceedings, art. no. 5347527, pp. 3.A.41-3.A.415.
23. *Kim, T., D.J. Lovell, and C. Oh (2009). Effects of various causal factors on car-following behavior. In: Proceedings of the 16th World Congress on ITS, Stockholm, Sweden.
24. *Ganji, M., D.J. Lovell, and M.O. Ball (2010). Resource allocation in flow-constrained areas with stochastic termination times and deterministic movement. In: Proceedings of the 4th International Conference on Research in Air Transportation, Budapest, Hungary.
25. *Churchill, A.M., D.J. Lovell, and M.O. Ball (2010). Coordinating multiple traffic management initiatives with integer optimization. In: Proceedings of the 4th International Conference on Research in Air Transportation, Budapest, Hungary.
26. *Vlachou, K., D.J. Lovell, T. Rabbani, and A. Bayen (2010). A diffusion approximation to a single airport queue. In: Proceedings of the 4th International Conference on Research in Air Transportation, Budapest, Hungary.
27. *Kim, D.G. and D.J. Lovell (2010). A procedure for 3-D sight distance evaluation using thin plate splines. In: Proceedings of the 4th International Symposium on Highway Geometric Design, Valencia, Spain.
28. *Churchill, A.M. and D.J. Lovell (2010). A procedure for auditing highway alignments for the effects of sun glare. In: Proceedings of the 4th International Symposium on Highway Geometric Design, Valencia, Spain.
29. *Chan, K. and D.J. Lovell (2010). Determining the relationships among airport operational performance areas and other airport characteristics. In: Proceedings of the 2010 AIAA Guidance, Navigation, and Control Conference, Toronto, Canada.
30. *H. Kim, *T. Kim, D.J. Lovell, and B.H. Kim (2010). Impact of one-way divided highway scheme. In: Proceedings of the 17th ITS World Congress, Busan, South Korea.
31. Ball, M., M. Ganji, C. Glover, and D. Lovell (2010). Stochastic integer programming models for air traffic flow management problems. TRISTAN VII, Tromsø, Norway.
32. M.O. Ball, C. Glover, and D.J. Lovell (2011). Collaborative approaches to the application of enroute traffic flow management optimization models. In: Proceedings of the Ninth USA/Europe Air Traffic Management Research and Development Seminar, Berlin, Germany.
33. *Jones, J.C., D.J. Lovell, and M.O. Ball (2012). Algorithms for dynamic resequencing of en route flights to relieve terminal congestion. In: Proceedings of the 5th International Conference on Research in Air Transportation, Berkeley, CA, USA.
34. *Wang, R., M.O. Ball, and D.J. Lovell (2012). Ration-by-weight of efficiency and equity: A new allocation method in ground delay program planning. In: Proceedings of the 5th International Conference on Research in Air Transportation, Berkeley, CA, USA.
35. *Jones, J., D.J. Lovell, and M.O. Ball (2013). En route speed control methods for transferring terminal delay. In: Proceedings of the Tenth USA/Europe Air Traffic Management Research and Development Seminar (ATM2013), Chicago, IL, USA.

36. *Jones, J.C., D.J. Lovell, and M.O. Ball (2014). An equitable approach for transferring terminal delay with en route speed control. In: Proceedings of the 6th International Conference on Research in Air Transportation, Istanbul, Turkey.
37. *Jones, J.C., Lovell, D.J., and Ball, M.O. (2015). Combining control by CTA and dynamic enroute speed adjustment to improve ground delay program performance. In: Proceedings of the Eleventh USA/Europe Air Traffic Management Research and Development Seminar (ATM2015), Lisbon, Portugal.
38. A. Estes and D.J. Lovell (2016). Identifying Representative Traffic Management Initiatives. Proceedings of the 7th International Conference on Research in Air Transportation, Philadelphia, PA, USA.
39. *K. Vlachou and D.J. Lovell (2016). Estimating the Long–Run Effects of Resource Allocation Mechanisms. In: Proceedings of the 7th International Conference on Research in Air Transportation, Philadelphia, PA, USA.
40. A. Estes, M. Ball, and D. Lovell (2017). Predicting Performance of Ground Delay Programs. In: Proceedings of the Twelfth USA/Europe Air Traffic Management Research and Development Seminar (ATM2017), Seattle, WA, USA.
41. Y. Liu, M. Hansen, D. Lovell, C. Chuang, M. Ball, J. Gulding (2017). Causal Analysis of En Route Flight Inefficiency – the US Experience. In: Proceedings of the Twelfth USA/Europe Air Traffic Management Research and Development Seminar (ATM2017), Seattle, WA, USA.
42. A. Estes, D.J. Lovell, M.O. Ball (2018). Selecting parameters in performance-based Ground Delay Program planning. In: Proceedings of the 8th International Conference on Research in Air Transportation, Barcelona, Spain.
43. Y. Liu, M. Hansen, D.J. Lovell, M.O. Ball (2018). Predicting aircraft trajectory choice – A nominal route approach. In: Proceedings of the 8th International Conference on Research in Air Transportation, Barcelona, Spain.
44. Mitkas, D.Z. and D.J. Lovell (2020). A data collection scheme to support applications for capacity enhancements at small airports. In: Proceedings of the 9th International Conference on Research in Air Transportation.
45. Hao, Y., Lovell, D.J., Ball, M.O., Torres, S., and Nagle, G.M. (2020). An arrival scheduling model for incorporating Collaborative Decision-Making concepts into Time-Based Flow Management. In: Proceedings of the 9th International Conference on Research in Air Transportation.
46. Hao, Y., Torres, S., Lovell, D.J., and Ball, M.O. (2020). Incorporating user preferences in Time-Based Flow Management operations. In: Proceedings of the 2020 IEEE/AIAA 39th Digital Avionics Systems Conference.

II.C. Submissions and Works in Progress

II.C.1. Manuscripts in Press

1. Mitkas, D.*, Lovell, D.J., Young, S., and Venkatesh, S. (in press). Developing capacity estimation metrics for airports accommodating smaller aircraft using locally collected Automated Dependent Surveillance – Broadcast (ADS-B) data. *Transportation Research Record*.

II.D. Conferences, Workshops, and Talks

II.D.1. Invited Talks

1. January 9, 1994: "Status of Rural Highway Research at U.C. Berkeley." Two-Lane Highway Subcommittee of Highway Capacity Committee, Transportation Research Board, National Research Council, Washington, D.C.
2. March 8, 1999: "Cellular Telephone Geolocation for Wide-Area Traffic Surveillance." Institute for Transportation Engineers Student Chapter, Pennsylvania State University.
3. May 13, 1999: "Transportation Research Activities at UMCP." Institute of Transportation Engineers, Washington D.C. Section (WDCSITE) dinner meeting, featured speaker.
4. February 3, 2000: "Anonymous Mobile Sampling for Traffic Management." Cellular Telephone Industry Association, Washington, D.C.
5. March 17, 2000: "Anonymous Mobile Sampling for Traffic Management." Traffic Data Forum, ITS America, San Francisco, CA.
6. April 11, 2000: "Anonymous Mobile Sampling for Traffic Management." Capital Wireless Integrated Network (CAP-WIN) Steering Committee.
7. April 12, 2000: "Anonymous Mobile Sampling for Traffic Management." MitreTek Corporation, Washington, D.C.
8. April 24, 2000: "Anonymous Mobile Sampling for Traffic Management." Nissan North America, Inc., Herndon, VA.
9. August 28, 2000: "Evaluation of Anonymous Mobile Sampling for Traffic Management." North American Travel Monitoring Exhibition and Conference, Middleton, WI.
10. September 21, 2000: "Evaluation of Anonymous Mobile Sampling for Traffic Management." ITS Maryland Annual Meeting, Baltimore, MD.
11. February 15, 2001: "Traffic Surveillance using Passive Anonymous Cellular Probes." Japan-U.S. Joint Meeting on Signal Control Systems, Tokyo, Japan.
12. June 6, 2001: Panelist, ITS America Annual Meeting, Session on Wireless Phone Probes as Data Sources for ATMS Activities. "Traffic Probe Data for Traffic Stream Measurements."
13. June 7, 2001: Panelist, ITS America Annual Meeting, Session on ITS in Maryland and Michigan. "Traffic Probe Data for Traffic Stream Measurements."
14. August 24, 2001: "Performance metrics for network transportation geolocation systems." Transportation science seminar series, Institute of Transportation Studies, University of California, Berkeley.
15. January 13, 2002: Panelist, 81st Annual Meeting of the Transportation Research Board, Washington, D.C., Session on Challenges and Opportunities of Artificial Intelligence Solutions.
16. March 15, 2006: "Modeling delays and cancellations for collaborative strategic planning." NEXTOR Congestion Management Workshop, Asilomar Conference Center, Pacific Grove, CA.
17. November 2, 2006: "Determining the number of slots to subject to market mechanisms." University of Massachusetts, Amherst Transportation Seminar Series.
18. October 24, 2013: "Design, Operations, and Control: Recent Transportation Research in Surface and Aviation Domains." Kittelson & Associates, Inc.
19. October 24, 2013: "Making a Difference in Ethiopia: Engineers Without Borders Addis Alem, Ethiopia Program." Portland State University.

20. October 25, 2013: “Congestion modeling and mitigation in the National Airspace System.” Portland State University Transportation Seminar Series.
21. November 12, 2015: “Combining Control by CTA and Dynamic En Route Speed Adjustment to Improve Ground Delay Performance.” Cal Poly San Luis Obispo.
22. November 13, 2015: “Air Traffic Management.” Cal Poly San Luis Obispo.
23. March 11, 2016: “EWB and Sustainable Development.” Baltimore ASCE chapter meeting.
24. October 25, 2019: “Using Historical Data to Inform Human Air Traffic Flow Management Decisions.” City University of Hong Kong.
25. October 29, 2019: “Using Historical Data to Inform Human Air Traffic Flow Management Decisions.” Nanjing University of Aeronautics and Astronautics.
26. February 11, 2021: “Engineering in a Global Context.” Florida International University.
27. October 15, 2021: “Leveraging local ADS-B transmissions to assess the performance of air traffic at general aviation airports.” University of South Florida.

II.D.2. Non-Refereed Presentations

1. May 4,1999: INFORMS 1999 National Meeting, Cincinnati, Ohio. “A discussion of bandwidth maximization in arterial traffic signal timing optimization” by *M.K. Jha and D.J. Lovell.
2. January 12, 2000: 79th Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C. “Access control problem on capacitated FIFO networks with unique origin-destination paths is hard” by A.L. Erera, C.F. Daganzo, and D.J. Lovell.
3. June 21, 2000: 8th International Conference on Computer-Aided Scheduling of Public Transport, Berlin, Germany. “Optimal time transfer in transit route network design” by *S. Ngamchai and D.J. Lovell.
4. January 8, 2001: 80th Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C. “Transportation management applications of anonymous mobile call sampling” by B.L. Smith, M.L. Pack, D.J. Lovell, and M.W. Sermons.
5. January 9, 2001: 80th Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C. “A new methodology to estimate capacity for freeway work zones” by *T. Kim, D.J. Lovell, and *J. Paracha.
6. January 16, 2002: 81st Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C. “Local optimization of intersections for highway alignments” by *E. Kim, *M.K. Jha, D.J. Lovell, and P. Schonfeld.
7. November, 2002: INFORMS 2002 National Meeting, San Jose, California. “The distribution of the sum of seed numbers of teams advancing in single-elimination tournaments without byes” by D.J. Lovell and S. Young.
8. November, 2002: INFORMS 2002 National Meeting, San Jose, California. “Predicting airspace congestion using approximate queueing models” by *B.G. Chandran, M.O. Ball, and D.J. Lovell.
9. October, 2004: INFORMS 2004 National Meeting, Denver, Colorado. “An upper bound for the number of matching schemata in a binary coded genetic algorithm” by D.J. Lovell and M.K. Jha.
10. October, 2004: INFORMS 2004 National Meeting, Denver, Colorado. “Estimating flight departure delay distributions using statistic models” by *Y. Tu, M.O. Ball, and D.J. Lovell.

11. November, 2005: INFORMS 2005 National Meeting, San Francisco, California. "Airport congestion prices based on deterministic queueing effects" by D.J. Lovell, M.O. Ball, and A. Mukherjee.
12. November, 2006: INFORMS 2006 National Meeting, Pittsburgh, Pennsylvania. "Determining the number of slots to auction" by D.J. Lovell, M.O. Ball, *A.M. Churchill, and A. Mukherjee.
13. November, 2006: INFORMS 2006 National Meeting, Pittsburgh, Pennsylvania. "Identification and adjustment of inaccurate airport arrival capacities" by *A.M. Churchill, M.O. Ball. D.J. Lovell, and A. Mukherjee.
14. November, 2007: INFORMS 2007 National Meeting, Seattle, Washington. "Practical rolling horizon airport slot auction with dynamic quantities" by *A.M. Churchill, D.J. Lovell, and M.O. Ball.
15. November, 2007: INFORMS 2007 National Meeting, Seattle, Washington. "The number of slots to submit to market mechanisms" by D.J. Lovell, *A.M. Churchill, M.O. Ball, and A. Mukherjee.
16. November, 2007: INFORMS 2007 National Meeting, Seattle, Washington. "Data transformation for terminal airspace queuing models" by D.J. Lovell, *A.M. Churchill, M.O. Ball, A. Mukherjee, and A. Odoni.
17. November, 2007: INFORMS 2007 National Meeting, Seattle, Washington. "A fast response mechanism for airspace capacity windfalls" by *A.M. Churchill, D.J. Lovell, and M.O. Ball.
18. November, 2008: INFORMS 2008 National Meeting, Washington, DC. "Modeling of consolidation by household for emergency evacuation events" by *K. Liu, D.J. Lovell, and P. Chang.
19. November, 2008: INFORMS 2008 National Meeting, Washington, DC. "Continuum modeling of aircraft flows in queues" by D.J. Lovell and *K. Vlachou.
20. November, 2008: INFORMS 2008 National Meeting, Washington, DC. "Examining the aggregate relationship between aircraft load factor and cancellation rate" by *A.M. Churchill, M.O. Ball, *S.-L. Tien, and D.J. Lovell.
21. November, 2008: INFORMS 2008 National Meeting, Washington, DC. "Continuum Queuing Network Models in Aviation" by *K. Vlachou and D.J. Lovell.
22. October, 2009: INFORMS 2009 National Meeting, San Diego, CA. "Modeling the impact of super heavy transports on surface movements" by *S.-L. Tien and D.J. Lovell.
23. October, 2009: INFORMS 2009 National Meeting, San Diego, CA. "Strategic air traffic management with dynamic uncertain weather" by *A.M. Churchill and D.J. Lovell.
24. October, 2009: INFORMS 2009 National Meeting, San Diego, CA. "Monte Carlo validation of a diffusion model for a single airport queue" by D.J. Lovell and *K. Vlachou.
25. October, 2009: INFORMS 2009 National Meeting, San Diego, CA. "Spatial and temporal examination of propagated flight delays" by *A.M. Churchill and D.J. Lovell.
26. October, 2009: INFORMS 2009 National Meeting, San Diego, CA. "Diffusion approximation to networks of airport queues" by *K. Vlachou and D.J. Lovell.
27. October, 2010: INFORMS 2010 National Meeting, Austin, TX. "Assessing the impact of stochastic capacity variation on coordinated air traffic flow management" by *A.M. Churchill, M.O. Ball, and D.J. Lovell.
28. October, 2010: INFORMS 2010 National Meeting, Austin, TX. "Diffusion approximation to model airport queues" by *K. Vlachou and D.J. Lovell.

29. November, 2011: INFORMS 2011 National Meeting, Charlotte, NC. " Processing aviation delay data for queueing system analysis" by *K. Vlachou, *A.M. Churchill, and D.J. Lovell.
30. October, 2012: INFORMS 2012 National Meeting, Phoenix, AZ. "Equitable resource allocation mechanisms during reduced airspace capacity" by *K. Vlachou, M.O. Ball and D.J. Lovell.
31. October, 2012: INFORMS 2012 National Meeting, Phoenix, AZ. "Algorithms for dynamic resequencing of en route flights to relieve terminal congestion" by *J.C. Jones, M.O. Ball, and D.J. Lovell.
32. October, 2012: INFORMS 2012 National Meeting, Phoenix, AZ. "Quantifying the benefits of improved flight predictability" by *K. Vlachou, M.O. Ball, and D.J. Lovell.
33. October, 2013: INFORMS 2013 National Meeting, Minneapolis, MN. "Benefits analysis of improved strategic and operational flight predictability" by *K. Vlachou, M.O. Ball, and D.J. Lovell.
34. October, 2013: INFORMS 2013 National Meeting, Minneapolis, MN. "En route speed control methods for transferring terminal delay" by *J.C. Jones, M.O. Ball, and D.J. Lovell.
35. October, 2014: INFORMS 2014 National Meeting, "Managing capacity uncertainty in Ground Delay Programs through en route speed control" by *J.C. Jones and D.J. Lovell.
36. November, 2015: APHA Annual Meeting and Exposition, Chicago, IL. "Water chlorination and health education: Collaborating to decrease water contamination and water-related illness in rural Peru" by K. Garcia-Rosales, C. Ennaco, A. Foust, P. Parikh, R. Kramer, G. Raspanti, G. Jaschek, G. De Silva, E. Maring, and D. Lovell.
37. June, 2015: CORS/INFORMS International 2015. "Combining Control by CTA and Dynamic Enroute Speed Control to Improve GDP Performance" by J.C. Jones, D.J. Lovell, and M.O. Ball.
38. October 2015: INFORMS Annual Meeting. "Representative Traffic Management Initiatives" by A. Estes, M.O. Ball, and D. Lovell.
39. July, 2017: INFORMS TSL Conference. "Sources of Flight Inefficiency in the National Airspace System: An Econometric Approach" by M. Hansen, Y. Liu, M. Ball, D. Lovell, and C. Chuang.
40. November, 2020: INFORMS 2020 Virtual Annual Meeting. "An integer programming model for arrival scheduling In Time-Based Flow Management implementing Collaborative Decision-Making concepts" by Y. Hao, D.J. Lovell, M.O. Ball, and S. Torres.
41. November, 2021: INFORMS 2021 Virtual Annual Meeting. "Optimization models for flights arrival scheduling incorporating carrier preferences" by Y. Hao, D.J. Lovell, M.O. Ball, and S. Torres.

II.E. Professional Publications

II.E.1. Reports and Non-Refereed Monographs

1. Lovell, D.J., S.V. Lau, and A.D. May (1993). Using the TRARR model to investigate alignment alternatives and passing lane configurations on the Buckhorn Grade. Institute of Transportation Studies, University of California, Berkeley. Research Report UCB-ITS-RR-93-7, 188 p.

2. Lovell, D.J. (1993). Computer Analysis of Two-Lane Rural Highways. In: Tech Transfer, Vol. 43, Institute of Transportation Studies Extension Program, University of California, Berkeley, pp. 2-3.
3. Lovell, D.J., S.V. Lau, A.D. May, and L. Leiman (1994). UCBTRARR: A user-friendly interface for rural highway computer simulation methods. Institute of Transportation Studies, University of California, Berkeley. Research Report UCB-ITS-RR-94-16, 156 p.
4. Picado, R., A. Khattak, D.J. Lovell, and A. Kanafani (1995). PLANiTS: The methods base, model selection, and model integration. California PATH Research Report UCB-ITS-PRR-95-16, 52 p.
5. Paramsothy, T., A. Khattak, D.J. Lovell, and A. Kanafani (1995). PLANiTS: Organization and integration of modules. California PATH Research Report UCB-ITS-PRR-95-18, 37 p.
6. Bertini, R.L., D.J. Lovell, and W.-H. Lin (1998). Solutions to problem sets: Fundamentals of transportation and traffic operations. Institute of Transportation Studies, University of California, Berkeley, 201 p.
7. Erera, A.L., C.F. Daganzo, and D.J. Lovell (1999). The access control problem on capacitated FIFO networks with unique O-D paths is hard. California PATH Research Report UCB-ITS-PRR-99-35, 19 p.
8. Lovell, D.J., G.-L. Chang, *T. Kim, and *S. Ngamchai (1999). A study of the feasibility of ramp metering for the MD-43 / I-695 interchange in Baltimore, Maryland. Report to the Maryland State Highway Administration.
9. Lovell, D.J. and J.R. Windover (1999). Discussion of "Analyzing freeway traffic under congestion: Traffic dynamics approach" by Nam and Drew. ASCE J. Transportation Engineering, Vol. 125, No. 4, pp. 373-375.
10. Lovell, D.J. (2000). Feasibility study on the use of passive monitoring for wide area surveillance. Final report to the Maryland State Highway Administration.
11. Lovell, D.J. and *T. Kim (2001). Guidelines to improve traffic operations in work zones. Final Report to the Maryland State Highway Administration.
12. Lovell, D.J. (2001). "Traffic." Entry in the World Book Encyclopedia, World Book Publishing, Chicago, IL.

II.E.2. Pre-Print/Working Paper

1. Lovell, D.J., A.D. May, and L. Leiman (1993). Rural highway computer simulation model improvements: Enhancing the TRARR model. Institute of Transportation Studies, University of California, Berkeley. Working Paper UCB-ITS-WP-93-l, 68 p.
2. del Castillo, J.M., D.J. Lovell, and C.F. Daganzo (1995). Steady state conditions on automated highways. Institute of Transportation Studies, University of California, Berkeley, Working Paper UCB-ITS-WP-95-3, 22 p.

II.F. Book Reviews, Notes, and Other Contributions

"Tribal Water Rights: Essays in Contemporary Law, Policy, and Economics." By Thorson, Britton, and Colby (eds). Published in the *Journal of the American Water Resources Association*, vol. 42(6), 2006, pp. 1719-1721.

II.G. Sponsored Research

Title	Sponsor	Role	Time	Total Funding	Lovell's Share
Active Control of Airport Ground Traffic	Minta Martin Fund, University of Maryland	P.I.	1998	$35,000	$35,000
Economic Feasibility of Passive Cellular Telephone Monitoring for Wide-Area Traffic Surveillance	Maryland State Highway Administration	P.I.	1998-2000	$18,459	$18,459
Evaluation and Selection of Ramp Metering Sites for MD 43 Ramp and I-495	Maryland State Highway Administration	Co-P.I. with Gang-Len Chang	1998-1999	$102,438	$51,219
Transportation Control Systems using Autonomous Agents	Intelligent Automation, Inc.	P.I.	1999-2001	$40,000	$40,000
Guidelines to Improve Traffic Operations in Work Zones	Maryland State Highway Administration	P.I.	1999-2001	$93,394	$93,394
Operational and Safety Analysis of the New US 301 / MD 291 Interchange	Maryland State Highway Administration	P.I.	2000-2001	$59,205	$59,205
Intersection Evaluation and Optimization Methods	Maryland State Highway Administration	Co-P.I. with Paul Schonfeld	2000-2001	$50,000	$8,000
Evaluation of Anonymous Mobile Sampling	Maryland State Highway Administration	P.I.	2000-2001	$154,796	$154,796
Evaluation of Anonymous Mobile Sampling Phase II	Maryland State Highway Administration	P.I.	2001-2002	$154,292	$154,292
Integrated Management of Maintenance and Traffic	Maryland State Highway Administration	Co-P.I. with Paul Schonfeld	2001-2002	$80,000	$28,000
SGER 3-D Sight Distance Calculation	National Science Foundation	P.I.	2001-2002	$57,571	$57,571
Commercial Vehicle Operations Table Model	Maryland Department of Transportation	P.I.	2002	$6,000	$6,000
Observation and Modeling of Car-Following Behavior	National Science Foundation	P.I.	2002-2004	$143,554	$143,554
REU for above	National Science Foundation	P.I.	2002-2004	$14,995	$14,995
Collaborative Decision Making and Free Flight Phase II	Federal Aviation Administration	Co-P.I. with Michael Ball	2002-2003	$1,970,000	$61,819

Commercial Vehicle Operations Table Model II	Maryland Department of Transportation	P.I.	2005	$5,000	$5,000
Slot Auctions for U.S. Airports	Federal Aviation Administration	Co-P.I. with Michael Ball	2004-2006	$309,729	$77,432
A Peer-to-Peer Mentoring Approach for Sensor Technology	National Science Foundation	Co-P.I. with Peter Chang	2004-2005	$99,996	$49,998
Electrophoretic Displays for Urban Traffic Information & Control	National Science Foundation	P.I.	2006-2009	$212,800	$212,800
Dynamic, Stochastic Models for Managing Air Traffic Flows	National Aeronautics and Space Administration (NASA)	Co-P.I. with Michael Ball	2006-2009	$2,248,315	$1,124,157
Economic Incentives and Controls for Air Traffic Management	Federal Aviation Administration	Co-P.I. with Michael Ball	2006-2007	$92,500	$46,250
Dynamic Rerouting in Response to Slot Availability in the National Airspace	National Aeronautics and Space Administration (NASA)	P.I.	2006-2007	$130,000	$130,000
Analysis of the Effects of Uncertainty and Precision on Queuing Delays in the Next-Generation Air Traffic System	National Aeronautics and Space Administration (NASA)	P.I.	2007-2011	$167,721	$167,721
NASA NextGen Advanced Projects and Vehicles	Raytheon Company	Co-P.I. with Michael Ball	2008 - 2009	$115,000	$57,500
Models and Analysis to Support Airport Congestion Management	Federal Aviation Administration	Co-P.I. with Michael Ball	2008 - 2010	$110,004	$55,002
Total Cost of Delay and Its Impact on the US Economy and Productivity	Federal Aviation Administration	Co-P.I. with Michael Ball	2008 - 2010	$50,000	$25,000
User Equipage: New TFM Procedures and Investment Incentives	Federal Aviation Administration	Co-P.I. with Michael Ball	2010 - 2011	$190,143	$95,071

Guilford Run Bioretention Project	Chesapeake Bay Trust	P.I.	2010-2011	$4,998	$4,998
New Resource Mechanisms for AFP Planning	Federal Aviation Administration	Co-P.I. with Michael Ball	2010-2011	$140,403	$70,201
EWB Program Support for Brazil Project	St. Margaret's Church	P.I.	2011-2012	$8,500	$8,500
Evaluation of C/RTA Metering for Terminal-Area ATM	Federal Aviation Administration	Co-P.I. with Michael Ball	2011-2013	$250,000	$125,000
New Concepts and Metrics for Flight Predictability	Federal Aviation Administration	Co-P.I. with Michael Ball	2011-2013	$292,500	$146,250
Similar Historical Days and Air Traffic Flow Management Response Strategies	National Aeronautics and Space Administration (NASA)	Co-P.I. with Michael Ball	2014-2015	$125,000	$62,500
Evaluation of En-Route Performance Measures	Federal Aviation Administration	Co-P.I. with Michael Ball	2014-2016	$336,929	$107,214
Dashboarding and Automated Report Generation from NTML Data	Federal Aviation Administration	Co-P.I. with Michael Ball	2016-2018	$214,000	$107,000
Decision Support Capabilities for Effective Application of Collaborative Trajectory Options Programs	National Aeronautics and Space Administration (NASA)	Co-P.I. with Michael Ball	2016-2017	$99,699	$49,849
Small Aircraft Capacity Modeling Factors	Federal Aviation Administration	P.I.	2019-2021	$199,151	$199,151
CDM Integration with TBFM	Leidos, Inc.	P.I.	2019	$100,000	$100,000
Quantification of Traffic Flow Management Operational Needs	Federal Aviation Administration	Co-P.I. with Michael Ball	2019-2020	$231,640	$115,820
Small Aircraft Capacity Modeling Factors Phase II	Federal Aviation Administration	P.I.	2021-2022	$398,000	$398,000
LINUS: An Intelligent Digital Assistant for UAM Operators	National Aeronautics and Space Administration (NASA), via	P.I.	2021-2022	$42,000	$42,000

	subcontract to Intelligent Automation, Inc.				
			Totals	$9,135,732	$4,569,968
			Totals (external funding)	$9,118,732	$4,534,968

II.H. Fellowships, Gifts and Other Funded Research

In-kind Support for Geolocation Evaluation, Nissan North America, Inc., 1999-2009, vehicle and in-vehicle sensing technology worth $60,000.
Reducing false alarms in vehicle lane departure warning systems. Nissan North America, Inc., 2006, $10,000.

II.I. Centers for Research, Scholarship, and Creative Activities

NEXTOR II – National Center of Excellence for Aviation Operations Research. Maryland leads an 8-university consortium with a $60 million, 7-year (2011-2018) IDIQ contract with the Federal Aviation Administration. Professors David Lovell (Civil and Environmental Engineering) and Michael Ball (Smith School of Business) are co-PIs.

NEXTOR III – National Center of Excellence for Aviation Operations Research. Maryland leads an 8-university consortium with a $24 million, 7-year (2020-2027) IDIQ contract with the Federal Aviation Administration. Professors David Lovell (Civil and Environmental Engineering) and Michael Ball (Smith School of Business) are co-PIs.

III. Teaching, Mentoring and Advising.

III.A. Courses Taught in last 5 years

- Fall 2016
  - ENES 100 – 40 students
  - ENCE 688D/ENSE 698E – Sensor Systems (co-taught with Prof. Pamela Abshire) – 11 students
- Spring 2017
  - ENCE 302 – 44 students
- Summer 2017
  - ENES 100 (YSP) – 34 students
- Summer 2018
  - ENES 100 (YSP) – 31 students
- Fall 2018
  - ENCE 688D/ ENSE 698E – Sensor Systems (co-taught with Prof. Pamela Abshire) – 20 students
  - ENES 100 – 40 students
- Spring 2019
  - ENCE 402 – 27 students
- Summer 2019

    - ENES 100 (YSP) – 25 students
- Fall 2019
    - ENCE 688D/ ENSE 698E – Sensor Systems (co-taught with Prof. Pamela Abshire) – 11 students
- Spring 2020
    - ENCE 201 – 35 students
    - ENCE 402 – 22 students
- Spring 2021
    - ENCE 201 – 26 students
    - ENCE 402 – 29 students

III.B. Teaching Innovations

III.B.1. Education Abroad Established

Terrapin Takeoff China (Summer 2012 and Summer 2013) – This course taught the basic science and engineering concepts embedded in the National Academy of Engineering's Grand Challenges, and reinforced these from the Chinese perspective by way of tours of universities, laboratories, research facilities, and manufacturing facilities in Beijing and Shanghai and surrounding communities.

III.B.2. Course or Curriculum Development

ENCE 289I – *Engineering in the Developing World* (I-Series). This course was developed from scratch as part of the inaugural group of I-Series Courses. It focused on engineering methods applied in a developing environment, coupled with some associated sociological issues. It was offered in Spring 2010 to 43 students.

ENCE 289J - *Transportation Innovation: Planes, Trains, and Automobiles, and their Role in the Advance of Science* (I-Series). This course was developed from scratch, and was offered as part of the second group of I-Series courses. It was offered in Fall 2010 to 28 students.

ENCE 402 – *Simulation and Design of Experiments* – This is a course on Monte Carlo simulation that I introduced to the undergraduate curriculum in the Civil and Environmental Engineering department. It is now required for 2 of our three instructional tracks, and has been taught every spring semester since 2004, 7 times by me and the rest by other faculty.

ENCE 688D/ENSE 698E – *Sensor Systems* – This is a graduate course developed from scratch by me and Professor Pamela Abshire of Electrical and Computer Engineering. It focuses in sensor systems, and is meant to appeal to researchers from all over the Clark School of Engineering. It satisfies a requirement for the Ph.D. program in Civil Systems, and serves as an elective course for the MS program in Systems Engineering. It has been taught four times so far, in the Fall of 2013 - 2016.

III.C. Advising: Research or Clinical

III.C.1. Undergraduate

Gemstone: Smart Roads I, 2002-2005:
Mark L. Anderson, Jr., Christopher Y. Brown, Thomas A. Brubaker, Andrew M. Churchill, Sara K. Clarke, Gregory M. Crosswhite, Michael K. De Palatis, David A. Fried, Leslie C. Jones, Daniel A. Zelman

Gemstone: Smart Roads II, 2006-2008:
Thomas Centineo, Brent Dorman, Mengran Du, Matthew Fritts, Elizabeth Henningsgaard, Mark Karasik, Garrett Lang, Safa Razeghi, Jun Wang, Diana Xiao, Gregory Ziskind

Quest: Northrup Grumman Parking Lot Design, 2007:
Ben Bacon, Jesse Chen, Eric Grosshandler, Lindsey Schwalb, Carol Wong

Quest: Lockheed Martin Solar Farm, 2009:
Jenna Cohen, Sean Cunningham, Jennifer Lei, Akshay Goyal, Benjamin Suarez, Tiffany Weston

III.C.2. Master's

Thesis, Chair:

Somnuk Ngamchai, 2000, "Optimal Time Transfer in Bus Transit Route Design using a Genetic Algorithm." Placement: Amtrak Revenue Management Division.
Leon Anderson, 2003, "Tracking Vehicles Using the Geolocation Capabilities of Cellular Phones: Is it Feasible?" Placement: District of Columbia Department of Transportation.
Gilbert Chlewicki, 2005, "Performance Evaluation of Novel Intersection and Interchange Designs." Placement: Self-employed transportation engineer.
Andrew Churchill, 2007, "Determining the Number of Slots to Submit to a Market Mechanism at a Single Airport." Placement: Matriculated to UMCP Ph.D. program.
Kennis Chan, 2009, "Determining the relationships among airport operational performance areas and other airport characteristics." Placement: ATAC, Inc.
Carina Wang, 2012, "Ration-by-Weight of Efficiency and Equity: A new allocation method in ground delay program planning." Placement: AvMet Applications.
Cara Chuang, 2017, "An Analysis of the Relationship between Traffic Management Initiatives." Placement: Leidos
Santiago Sanz, 2018, "An Evaluation of En Route Air Traffic Management Initiatives." Placement: Johns Hopkins University Applied Physics Laboratory
Prithiv Raj, 2018, "Mechanisms for Trajectory Options Allocation in Collaborative Air Traffic Flow Management." Placement: Zipline
Danae Mitkas, 2021, "Extracting Capacity Metrics for General Aviation Airports from ADS-B Data". Placement: Federal Aviation Administration

Scholarly paper

Harsha Challa, 2000, "The Importance of Logistics in Electronic Commerce." Placement: I2 Logistics, Inc.
Pariya Tantakasem, 2001, "U.S. Roundabout Safety Analysis." Placement: Instructor, Mahidol University, Thailand.
Ke Liu, 2003, "Distributed Traffic Simulation with Near-Real-Time Data." Later a Ph.D. student, UMCP.
M. Adil Rizvi, 2003, "Accuracy of Instantaneous Speed Measurements from RadioCamera Cellular Location System." Placement: Design Engineer, UDE Engineering, Inc.
Mark Suennen, 2004, "Evaluation of Prediction Methods for Right Turns on Red at Signalized Intersections." Placement: Chief Transportation Engineer, Ft. Meade Army Base.
Dae Gun Kim, 2009, "Calculating Three-Dimensional Roadway Sight Distance with Thin Plate Splines." Placement: Managing Director, World Bridge Leaders, Seoul, South Korea.
Molly Kluge, 2010, "Effects of Material Properties on Reinforced Concrete Beam Design." Placement: KCE Structural Engineers, P.C.
Ruiqi Mu, 2014, "Model Based Systems Engineering- Verifying the TSRS (Temporary Speed Restriction Server) System for Railways using UPPAAL." 2014 Placement: Bank of China, New York.
Xenia Barnes, 2014, "Sensor Driven Airport Taxiway and Runway Control." Placement: Federal Aviation Administration.

Committee Member:

Sonya Viera-Colon, M.S., CEE, 1999
Beth Alicandri, M.S., CEE, 1999
Allen Proper, M.S., CEE, 2000
Daliborka Stanojevic, M.S., CEE, 2001
Lulu Mao, M.S., CEE, 2001
Liang Zhu, M.S., CEE, 2002
Qiang Tian, M.S., CEE, 2002
Huijun Hu, M.S., CEE, 2002
Bala Chandran, M.S., R.H. Smith School of Business, 2002
Jason Burke, M.S., MSSE, 2002
Ravi Sankararaman, M.S., R.H. Smith School of Business, 2004
Carolina Burnier, M.S., CEE, 2005
Erin Morrow, M.S., CEE, 2005
Kevin Fogarty, M.S., MSSE, 2006
Ali Pilehvar, M.S., MSSE, 2007
Bargava Subramanian, M.S., MSSE, 2007
Hsiao-Chi Chen, M.S., CEE, 2008
Dimitrios Spyropoulos, M.S., MSSE, 2012

III.C.3. Doctoral

Chair:

Taehyung Kim, 2005, "Observation and Modeling of Variability in Car-Following Behavior." . Placement: Research Associate, Advanced Transportation Technology Research Center, The Korea Transport Institute (KOTI).
Emad Elshafei, 2006, "Decision-Making for Roadway Lane Designation Among Variable Modes." Placement: Transportation Division Chief, City of Rockville, MD.
Hyoungsoo Kim, 2007, "A Simulation Framework for Traffic Information Dissemination in Ubiquitous Vehicular Ad Hoc Networks." Placement: Senior Researcher, Advanced Transport Research Division, Korea Institute of Construction Technology.
Deepak Shrestha, 2009, "Modeling and Empirical Analyses of Tailgating Behavior of Drivers." Placement: Principal, Universolutions, LLC.
Ke Liu, 2009, "Modeling of Consolidation by Household for Emergency Evacuation Events." Placement: Senior Researcher, IBM, China.
Moein Ganji, 2010, "Resource Allocation in Air Traffic Flow-Constrained Areas with Stochastic Termination Times." Placement: Researcher, MITRE CAASD.
Andrew Churchill, 2010, "Coordinated and Robust Aviation Network Resource Allocation." Placement: Researcher, Mosaic ATM.
Kleoniki Vlachou, 2014, "Aviation Congestion Management: Improvements in modeling the prediction, mitigation, and evaluation of congestion in the National Airspace System." Placement: Researcher, Intelligent Automation, Inc.
James Jones, 2015, "Optimization Models for Speed Control in Air Traffic Management." Placement: MIT Lincoln Labs.
Yeming Hao, 2021, "Flight Arrival Scheduling Models for Incorporating Collaborative Decision-Making Concepts into Time-Based Flow management". Placement: Operations Research Scientist, Marriott International.
Mostafa Mollanejad, current.

Committee Member:

Jyh-Cherng Jong, Ph.D., CEE, 1998
Manoj K. Jha, Ph.D., CEE, 1999
Nazemeh Sobhi, Ph.D., CEE, 2000
Soojung Jong, Ph.D., CEE, 2000
Anita Amla, Ph.D., CEE, 2001
Jasenka Rakas, Ph.D., CEE, 2001
Eungcheol Kim, Ph.D., CEE, 2001
Xianding Tao, Ph.D., CEE, 2002
Wei Zhu, Ph.D., CEE, 2004
Pei-Wei Lin, Ph.D., CEE, 2006
Yufeng Tu, Ph.D., R.H. School of Business, 2006
Ragunath Sankaranarayanan, Ph.D., CEE, 2007
Min-Ho Shin, Ph.D., Computer Science, 2008
Pedram Hovareshti, Ph.D., ECE, 2009
Nasim Vakili Pourtaklo, Ph.D., ECE, 2009
Yue Liu, Ph.D., CEE, 2009
Charles Glover, Ph.D., AMSC, 2010

Shin-Lai Tien, Ph.D., CEE, 2010
Zichuan Li, Ph.D., CEE, 2011
Alex Nguyen, Ph.D., ECE, 2011
Xin Zhang, Ph.D., CEE, 2011
Kaveh Sadabadi, Ph.D., CEE, 2011
Ming Zhong, Ph.D., R.H. Smith School of Business, 2012
Xin Zhang, Ph.D., CEE, 2012
John Alexis Guerra Gómez, Ph.D., ECE, 2013
Prem Swaroop, Ph.D., R.H. Smith School of Business, 2013
Luis Delgado Muñoz, Ph.D., Technical University of Catalonia, 2013
Kaveh Farokhi Sadabadi, Ph.D., CEE, 2014
Michael Maness, Ph.D., CEE, 2015
Shally Deng, Ph.D., ENCE, 2016
Dennis Leber, Ph.D., ENME, 2016
Alex Estes, Ph.D., AMSC, 2018
Christopher Binz, Ph.D., ENAE, 2019
Yat-Ning Paul Lee, Ph.D., ENCE, 2020
Adam Halperin, Ph.D., ENAE, 2020

III.C.4. Post-doctoral

Dr. Jiancheng Mu, Professor, Beijing Jiaotong University, 2000-2001
Dr. Avijit Mukherjee, NASA Ames, 2004-2006
Dr. Max Hoffmann, Lufthansa Systems, 2014

III.C.5. Other Research Directions (*K-12 Interactions*)

ESTEEM Research Mentoring Program, Eleanor Roosevelt High School: Tiffany Shipmon, Adriano Lombre, Jr., 2003-2004

III.D. Mentorship

Office of Student Affairs, Veteran Student Life
"Got Your Six" veteran student mentor program, Jason Musick, 2015-2017

III.E. Advising: Other than Research Direction

III.E.1. Undergraduate

Trevin Hoekzema, Individual Studies Program, University of Maryland, College Park, 2011-2012

III.E.2. Other Advising Activities

Faculty Adviser, *Institute for Transportation Engineers* Student Chapter, 1999-2003

Faculty Adviser, *American Society of Civil Engineers* Student Chapter, 2007-2010
Faculty Adviser, *Engineers Without Borders USA* Student Chapter, 2010 - 2017

- Typical student membership = 150 students
- 4-5 concurrent international programs
- $150k-$200k annual expenditures
- Student trips led by Dr. Lovell:
    - July 2004, Pine Ridge Indian Reservation, South Dakota – assessment
    - January 2008, Burkina Faso Solar Lighting, implementation
    - June 2008, Burkina Faso Solar Water Pumping, implementation
    - January 2009, Ethiopia Community Center, assessment
    - June 2009, Ethiopia Community Center, implementation
    - January 2010, Ethiopia Community Center, implementation
    - August 2010, Burkina Faso Health Center, assessment
    - January 2011, Ethiopia Bridge, assessment
    - January 2012, Ethiopia Bridge, implementation
    - June 2012, Ethiopia Stormwater, assessment
    - February 2013, Ethiopia Stormwater, implementation
    - March 2014, Brazil, monitoring

Faculty Adviser, *Maryland Sustainability Engineers* Student Organization, 2011 – 2017

- Student trips led by Dr. Lovell:
    - June 2012, Sierra Leone solar lighting, assessment
    - June 2013, Sierra Leone rainwater harvesting, assessment
    - January 2014, Sierra Leone rainwater harvesting, assessment
    - June 2014, Sierra Leone rainwater harvesting implementation

Faculty Adviser, *Society of American Military Engineers* student chapter, 2018 - present

IV. Service and Outreach

IV.A. Editorships, Editorial Boards, and Reviewing Activities

Associate Editor, *IEEE Transactions on Vehicular Technology*, 2001 – 2008
Guest Editor, *IEEE Transactions on Vehicular Technology*, 53(6), 2004
Guest Editor, *Transportation Research Part C*, 33, 2013
Associate Editor, *Transportation Research Part C: Emerging Technologies*, 2017 – present

IV.A.1. Reviewing Activities for Journals and Presses

Reviewer for journals in the areas of transportation, operations research, aviation, sensor systems, control theory. Selected journals include:

Transportation Research Part A
Transportation Research Part B
Transportation Research Part C
Transportation Research Part E
Transportation Science

Transportation Research Record
ASCE Journal of Transportation Engineering
ASCE Journal of Computing in Civil Engineering
ASCE Journal of Infrastructure Systems
Intelligent Transportation Systems Journal
Operations Research
European Journal of Operational Research
Journal of Networks and Spatial Theory
Journal of Systems and Control Engineering
IEEE Transactions on Systems, Man, and Cybernetics
IEEE Transactions on Intelligent Transportation Systems
IEEE Transactions on Vehicular Technology
Journal of Guidance, Control, and Dynamics
Journal of Dynamic Systems, Measurement and Control
Journal of Computer-Aided Civil and Infrastructure Engineering
Journal of Air Transport Management
Journal of Advanced Transportation
Public Transport
IET Intelligent Transport Systems
Wiley Encyclopedia of Operations Research and Management Science
Image and Vision Computing

IV.A.2. Reviewing Activities for Agencies and Foundations

- Delaware Transportation Institute (DTI)
  - 1999 Member, Proposal Review Panel, DTI FY '00 Annual Research Program
- Oregon Transportation Research and Education Consortium (OTREC)
  - 2007 Proposal Review
- Maryland Industrial Partnership Program (MIPS)
  - 2012 Proposal Review
- National Science Foundation (NSF)
  - 2001 Member, Proposal Review Panel, Transportation Systems Management
  - 2002 Member, Proposal Review Panel, CAREER 2003 Transportation
  - 2003 Member, Proposal Review Panel, Transportation
  - 2006 Member, Proposal Review Panel, Transportation
  - 2008 Member, Proposal Review Panel, Transportation
  - 2009 Member, Proposal Review Panel, Transportation
  - 2011 Member, Proposal Review Panel, Transportation
  - 2013 Mail Review Panel, Transportation
  - 2014 Mail Review Panel, Transportation
  - 2016 Mail Review Panel, Transportation
- University of California Transportation Center (UCTC)
  - 2000 Reviewer, UCTC Research Funds
  - 2014 Reviewer, UCCONNECT proposal

2016 Reviewer, UCCONNECT proposal

- U.S.-Israel Binational Science Foundation
  2015 Proposal Review

IV.A.3. Reviewing Activities for Conferences

U.S. Program Chair, *International Conference on Research in Air Transportation*, 2010 (Budapest), 2012 (Berkeley), 2014 (Istanbul), 2016 (Philadelphia), 2018 (Barcelona), 2020

Reviewed papers for numerous national and international conferences over my career. Select conferences include:

Transportation Research Board Annual Meeting
International Conference on Research in Air Transportation
International Symposium on Traffic and Transportation Theory
IEEE International Conference on Vehicular Electronics and Safety
IEEE Vehicle Technology Conference
IEEE Conference on Intelligent Transportation Systems
World Conference on Transport Research
Computer-Aided Scheduling of Public Transportation
World Congress on Intelligent Transport Systems
American Control Conference

IV.B. Committees, Professional & Campus Service

IV.B.1. Campus Service - Department

1997 – 1998	Department secretary
1998	Member, Board of Advisors, Center for Advanced Transportation Technology (CATT)
1998 – 2003	Creator and organizer of annual University of Maryland Hospitality Suite at the Annual Meeting of the Transportation Research Board, National Academies
1999 – present	Member, Committee for Undergraduate Education
1999	Member, Faculty Performance Review Committee
1999 – 2000	Member, CEE departmental internal review committee
2000	Member, Faculty search committee
2000 – 2002	Primary presenter for transportation engineering program in Civil and Environmental Engineering at University and College open houses (approximately 10 open houses per year).
2001 – 2003	Faculty adviser, Transportation Simulation Laboratory, CATT
2003 – 2006	Chair, Undergraduate Recruiting
2005 – 2006	Educational Program Committee, ISR
2007 – 2010	Chair, Educational Program Committee, ISR
2009	Member, Department Strategic Planning Committee
2009	Member, Faculty search committee
2009 – present	Member, Maryland Day committee

2010 – 2013	Member, Facilities and Services Committee, ISR
2013 – 2014	Chair, ISR Faculty Search Committee
2014 – 2017	Member, ISR Executive Committee
2014 – 2017	Member, ISR APT Committee
2015 – 2016	Member, Faculty search committee
2016 – 2017	Member, Faculty search committee
2018 – present	Member, ad hoc strategic planning committee
2020 – present	Member, department advisory council
2021 – present	Chair, ad hoc committee for PM financial review
2021 – present	Member, ISR educational program committee

IV.B.2. Campus Service - College

2000, 2002	Member, Staff Service Award Committee
2000	Member, Faculty Service Award Committee
2000	Participant, Clark School of Engineering Strategic Planning Retreat
2002	Member, organizing committee for Staff Appreciation event
2007 – 2008	Faculty mentor, Engineers Without Borders Burkina Faso project
2009 – present	Faculty mentor, Engineers Without Borders Ethiopia project
2011 – present	Faculty adviser, Maryland Sustainability Engineers Sierra Leone project
2012 – 2014	College APT committee
2013	Member, STEM Committee
2012 – 2013	Member, CEE Department Chair Search Committee
2013 – present	Member, RISE committee
2016	Member, Faculty search committee for ISR Director
2019 – 2020	Faculty adviser, Clark Scholars
2019 – present	Faculty adviser, Society of American Military Engineers student chapter

IV.B.3. Campus Service - University

2000	Faculty representative, Student Honor Council
2000	Faculty judge, Graduate Research Interaction Day (GRID)
2001	Faculty marshal, winter commencement exercises
2010	Member, i-Series Course Committee
2013 – 2015	Member, University Sustainability Council
2013 – 2016	Faculty Representative, Campus Transportation Advisory Committee
2013 – present	Member, Education Abroad advisory committee
2017 – present	Member, ROTC advisory committee
2020	Member, Banneker/Key Scholarship interview committee
2021 – present	Member, Big 10 Academic Leadership Program

IV.B.4. Offices and Committee Memberships

- National Academies, Transportation Research Board (TRB)
  - 1993 – 1997 Member, Two-lane Highway Subcommittee, Highway Capacity Committee
  - 2002 – 2008 Organizer, TRB Doctoral Dissertation Seminar
  - 2014 – 2016 Committee Research Coordinator, Network Modeling Committee
- Intelligent Transportation Society of America (ITS America)
  - 2000 – 2001 Member, Benefits, Evaluation, and Costs (BEC) Committee
- Institute of Electrical and Electronics Engineers (IEEE)
  - 2002 – 2003 Member, Technical Program Committee, Annual IEEE Vehicular Technology Conference
- Vehicular Technology Society (IEEE)
  - 2002 – 2006 Judge, Land Transportation Paper Award
- Engineers Without Borders, USA
  - 2010 – 2017 Member, Faculty Leadership Council (Chair, 2012-2013)
  - 2012 Member, QA/QC Committee
  - 2012 Member, Domestic Programs Committee
  - 2013 Co-chair, Southeast Regional Technical Advisory Committee
  - 2014 – 2016 Chair, Southeast Regional Technical Advisory Committee
- Institute for Operations Research and the Management Sciences (INFORMS)
  - 2010 – 2012 Secretary/Treasurer, Transportation Science and Logistics Society
  - 2013 – 2017 Representative to Subdivisions Council
  - 2015 Chair, Dissertation Prize Committee, Aviation Applications Section

IV.B.5. Leadership Roles in Meetings and Conferences

U.S. Program Chair, *International Conference on Research in Air Transportation*, 2010 (Budapest), 2012 (Berkeley), 2014 (Istanbul), 2016 (Philadelphia), 2018 (Barcelona), 2020 (Virtual), 2022 (Tampa)

Cluster Chair, Transportation Science and Logistics Society, 2008 INFORMS Annual Meeting, Washington DC

IV.C. External Service and Consulting

IV.C.1. Community Engagements, Local, State, National, International

1998 – 1999	Conducted gratis neighborhood traffic study for the Western Avenue Citizens' Association, Washington, D.C., as part of ENCE 470 course (two consecutive fall semesters)
1999	Judge, Science and Engineering Fair, Eleanor Roosevelt High School
2000	Conducted gratis neighborhood traffic study for the Calverton Citizens' Association, Prince George's County, MD, as part of ENCE 470 course.
2002	Faculty mentor for a high school student conducting research practicum for Eleanor Roosevelt High School

2011 Earthquake simulator presentation, STEM day, Pointers Run Elementary School, Howard County, MD
2015 Engineer Activity Badge, Cub Scout Pack 702 (Clarksville, MD), Boy Scouts of America
2019 – present Eagle Scout project engineer, Boy Scout Troop 618 (Clarksville, MD), BSA

IV.C.2. Corporate and Other Board Memberships

2013 – 2016 Member, Board of Directors, Engineers Without Borders USA, representing Faculty Leadership Council

V. Awards, Honors and Recognition

V.1. Research Fellowships, Prizes and Awards

2005 Best Paper Award (two papers), 2005 Air Traffic Management Research and Development Seminar, Baltimore, MD
2007 UMCP Research Leaders IX
2008 UMCP Research Leaders X
2009 UMCP Research Leaders XI
2010 Best Paper Award, International Symposium on Highway Geometric Design, Valencia, Spain
2012 UMCP Research Leaders XIV
2013 Best Paper Award, International Conference on Research in Air Transportation, Berkeley, CA
2013 UMCP Research Leaders XV
2014 UMCP Research Leaders XVI
2017 Best Paper Award, 2017 Air Traffic Management Research and Development Seminar, Seattle, WA
2018 Best Paper Award (two papers), 2018 International Conference on Research in Air Transportation, Barcelona, Spain
2021 Best Paper Award, 2021 Air Traffic Management Research and Development Seminar

V.2 Teaching Awards

2014 Poole & Kent Senior Faculty Teaching Award, A. James Clark School of Engineering

V.3 Service Awards and Honors

2009 Faculty Service Award, CEE Department, UMCP
2011 ENGAGED Faculty, A. James Clark School of Engineering
2012 EWB-USA Peter J. Bosscher Faculty Adviser Award
2015 Inducted into ODK Leadership Fraternity
2015 Outstanding Reviewer, *ASCE Journal of Transportation Engineering*
2016 Outstanding Reviewer, *ASCE Journal of Transportation Engineering*

2018 Post Distinguished Service Award, Society of American Military Engineers Mid-Maryland Post, 2018