

## **Asad J. Khattak, Ph.D.**

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*Education & current position:* Dr. Asad Khattak received his Masters and Ph.D. degrees in Civil Engineering from Northwestern University in 1988 and 1991, respectively. Dr. Khattak is currently Beaman Distinguished Professor in the Department of Civil & Environmental Engineering at the University of Tennessee, and serves as (i) Coordinator for the Transportation Group (6 faculty members) in the Department, ii) Principal Investigator for University of Tennessee in the National University Transportation Center partnership led by University of North Carolina at Chapel Hill, iii) Coordinator and lead researcher for “Big Data for Safety Monitoring, Assessment, and Improvement,” a multi-year Southeastern Transportation Center UTC project sponsored by the US Department of Transportation, and (iv) Co-Director of the Initiative for Sustainable Mobility. He is affiliated with the UT Center for Transportation Research as well as the Baker Center for Public Policy, where he works on a broad range of research and educational projects sponsored by state and federal agencies. He teaches courses related to intelligent transportation systems, transportation safety, and transportation planning.

*Research expertise & sponsorship:* Dr. Khattak’s research expertise relates to various types of innovations related to: 1) intelligent transportation systems, 2) transportation safety, and 3) sustainable transportation. More specific topics include: connected and automated vehicles, large-scale (big) data analytics, traffic incident management, network performance and behavioral response to advanced traveler information systems, transportation operations; analysis of injury in crashes, large truck safety, pedestrian and bicycle safety, rail-trespassing safety, and work zone safety; travel demand and planning, modeling and simulation, public transit, and land use-transportation interactions. He is a nationally recognized scholar. His research has been sponsored by numerous agencies, including the National Science Foundation, US Department of Transportation (FHWA, RITA/OST-R through several university transportation centers), US Department of Energy, US Environmental Protection Agency, California, North Carolina, Virginia, and Tennessee Departments of Transportation, Virginia Department of Emergency Management, and other agencies/organizations (ATRI and RWJF).

*Scholarship:* Dr. Khattak has authored/co-authored 172 articles and reports (114 scholarly journal articles and 61 technical reports to research sponsors). He has given 155 presentations at international conferences and as invited talks. He has been invited internationally to work at University of Oxford in England, the French National Institute for Transport and Safety Research, known as INRETS, Ajou University in South Korea, & University of Aveiro, Portugal. As a principal- or co-investigator, he has successfully obtained 66 sponsored research and educational projects.

*Service:* Dr. Khattak is: 1) Editor-in-Chief of Science Citation Indexed *Journal of Intelligent Transportation Systems*, with a 2-year impact factor of 1.565 in 2015. 2) Associate Editor of SCI-indexed *International Journal of Sustainable Transportation*, with a 2-year impact factor of 3.209 in 2015, 3) Special adviser to the *Journal of Transportation Safety and Security*, & Advisory Board Member of *Analytic Methods in Accident Research*. His service to professional organizations is further reflected in active participation with the Council of University Transportation Centers and as a member of the Committee on User Information Systems, Transportation Research Board. He co-chaired the TRB Advanced Traveler Information Systems sub-committee during 2003-2015.

*Experience:* Dr. Khattak has 25 years of research and teaching experience in the transportation field. Before joining University of Tennessee, during 2006-2013, he was Frank Batten endowed chair Professor of Civil Engineering at Old Dominion University where he developed and directed ODU’s transportation research initiatives and educational programs. The program had \$2.0 Million in active sponsored research projects at the national, state and local levels. He received the “Shining Star Award” from ODU for helping students succeed academically, professionally, and personally inside and outside the classroom setting. During 1995-2006, Dr. Khattak was Professor of Transportation at University of North Carolina-Chapel Hill, where he developed the Carolina Transportation Program to the tune of \$1.5 Million in sponsored research projects. During 1991-1995, he actively participated in developing and implementing research on advanced transportation management and information systems at the California PATH Program, University of California at Berkeley.

## 1. PERSONAL

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## 2. EDUCATION

Ph.D. [Northwestern University](#), Civil Engineering (Transportation) 1991  
M. S. Northwestern University, Civil Engineering (Transportation) 1988  
B. Sc. NWFP University of Engineering & Technology, Pakistan (Mech. Engineering) 1980

## 3. PROFESSIONAL EXPERIENCE

### *Academic Positions since receiving Ph.D.*

Beaman Professor of Civil & Env. Engineering, University of Tennessee, Knoxville 2013-date  
Frank Batten Endowed Chair Professor, Civil & Env. Engineering., Old Dominion University 2006-2013  
Professor, [Planning Department](#), University of North Carolina-Chapel Hill 2005-2006  
Associate Professor, Planning Department, University of North Carolina-Chapel Hill 2000-2005  
Assistant Professor, Planning Department, University of North Carolina-Chapel Hill 1995-2000  
Director, Carolina Transportation Program, University of North Carolina-Chapel Hill 1995-2006  
Associate Chair, Planning, University of North Carolina-Chapel Hill 2002-2003

### *Other Professional Employment*

Assistant Research Engineer, [Inst of Trans Studies](#), University of California at Berkeley 1991-1995  
Visiting Associate Research Engineer, ITS, University of California at Berkeley 1995-2004  
Research Officer, [Transport Studies Group](#), University of Oxford, UK 1991-1991

## 4. HONORS, SCHOLARSHIPS & AWARDS

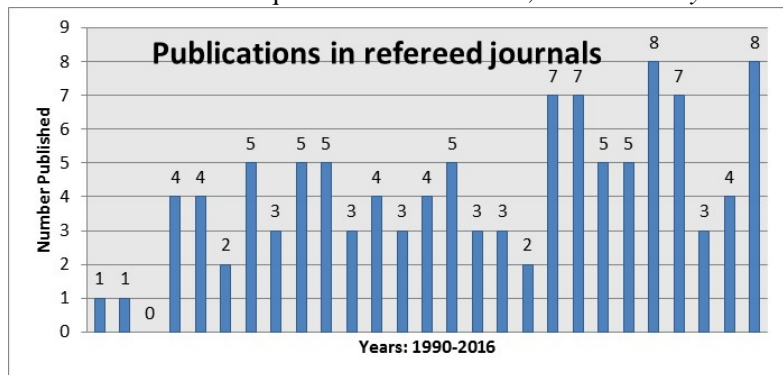
- Beaman Distinguished Professorship, University of Tennessee, Knoxville, TN (2013-to date)
- Honored/Plenary Session Speaker for 11<sup>th</sup>, 12<sup>th</sup> and 13<sup>th</sup> & 14<sup>th</sup> COTA (Chinese Overseas Transportation Association) International Conference of Transportation Professionals in plenary sessions, Nanjing, Beijing, Shenzhen, Changsha, & Beijing, Shanghai, China. 2011-2016
- Shining Star Award in 2010, Old Dominion University, for commitment to students' academic, professional and personal development 2010
- Frank Batten endowment at Old Dominion University (\$1.5 Million endowment) 2006-2013
- National recognition: Ranked 4<sup>th</sup> in terms of faculty with the greatest number of publications in national survey of 84 US planning schools & 856 planning faculty members, Stiffler B. et al. Faculty Quality at U.S. Graduate Planning Schools: A National Research Council-Style Study, *Journal of Planning Education & Research*, 24:1. 2004
- Awarded W.R. Kenan competitive leave, UNC-Chapel Hill, with \$4000 cash award 2005
- Best paper award, Committee on Pedestrians, Transportation Research Board, National Academies 2001
- Invited by the Government of France to help develop research agenda on Intelligent Transportation Systems 2003
- Recognized by the United States as person with extra-ordinary ability 1995-2002
- Center for Urban and Regional Studies Award for excellence in research, UNC-CH 2001
- Faculty Development Award UNC-CH Foundation 1996-1997
- TNT North America Scholarship for graduate studies 1990
- Transportation Center Dissertation Year Fellowship, Northwestern University 1990-1991
- Pakistan Ministry of Science and Technology Scholarship for graduate studies 1986-1990

## 5. PUBLICATIONS/BIBLIOGRAPHY

### **REFEREED JOURNAL PAPERS (N=115; H-Index: Google Scholar=36; Web of Science =18)**

1. Kamrani, M. A. Khattak, & B. Wali, Can Data Generated by Connected Vehicles Enhance Safety? A proactive approach to intersection safety management. Forthcoming, *Transportation Research Record: Journal of the Transportation Research Board*, TRB, National Academies, Washington, D.C., 2017.

2. Li X., A. Khattak, & B. Wali, Large-Scale Traffic Incident Duration Analysis: The Role of Multi-Agency Response and Stay Times. Forthcoming, *Transportation Research Record: Journal of the Transportation Research Board*, TRB, National Academies, Washington, D.C., 2017.
3. Greene, D., A. Khattak, J. Liu, X. Wang, J. Hopson, & R. Goeltz, What is the evidence concerning the gap between on-road and Environmental Protection Agency fuel economy ratings? *Transportation Policy*, Vol. 53, 2017, pp. 146–160.
4. Liu J., A. Khattak & X. Wang, A Comparative Study of Driving Performance in Metropolitan Regions Using Large-scale Vehicle Trajectory Data: Implications for Sustainable Cities, Forthcoming in *International Journal of Sustainable Transportation*, 2017.
5. Liu J., & A. Khattak. Delivering improved alerts, warnings, and control assistance using basic safety messages transmitted between connected vehicles, *Transportation Research*, Part C, Volume 68, 2016, pp. 83–100.
6. Liu J., X. Wang, & A. Khattak, Customizing driving cycles to support vehicle purchase and use decisions: Fuel economy estimation for alternative fuel vehicle users, *Transportation Research*, Part C, Vol. 67, 2016, pp. 280–298.
7. Khattak A., J. Liu, B. Wali, X. Li, & M. Ng, Modeling traffic incident duration using quantile regression, *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2554, Transportation Research Board, National Academies, Washington, D.C., DOI: 10.3141/2554-15, 2016.
8. Liu J., A. Khattak, & M. Zhang, What role do pre-crash driver actions play in work zone crashes? Application of hierarchical models to crash data, *Transportation Research Record: Journal of the Transportation Research Board*, 2555, National Academies, Washington, D.C., 2016, pp. 1–11.
9. Liu J., X. Wang, A. Khattak, J. Hu, J. Cui, J. Ma, How big data serves for freight safety management at highway-rail grade crossings? A spatial approach fused with path analysis, *Neurocomputing*, Vol. 181, 2016, pp. 38-52.
10. Liu J. B. Bartnick, S. Richards, & A. Khattak, Driver behavior at railway-highway grade crossings with passive traffic controls: A driving simulator study, *Journal of Transportation Safety and Security*, Volume 8, Supplement 1, 2016, pp. 37-55.
11. Bandeira J., D. Carvalho, A. Khattak, N. Roupail, P. Fernandes, T. Fontes, S. Pereira, & M. Coelho, Empirical assessment of route choice impact on emissions over different road types, traffic demands, and driving scenarios. *International Journal of Sustainable Transportation*, 10:3, 2016, pp. 271-283.
12. Wang X., A. Khattak, J. Liu, & D. Clarke, Non-crossing rail-trespassing crashes in the past decade: a spatial approach to analysis of injury severity, *Safety Science*, Volume 82, February 2016, Pages 44–55.
13. Liu, J., A. Khattak, S. Richards, & S. Nambisan, What are the differences in driver injury outcomes at highway-rail grade crossings? Untangling the role of pre-crash behaviors, *Accident Analysis & Prevention*, Volume 85, December 2015, pp. 157–169.
14. Wang X., A. Khattak, J. Liu, G. Amoli, & S. Son, What is the level of volatility in instantaneous driving decisions? *Transportation Research Part C*, Volume 58, Part B, September 2015, pp. 413-427.
15. Liu J., A. Khattak, X. Wang, The role of alternative fuel vehicles: Using behavioral and sensor data to model hierarchies in travel, *Transportation Research Part C*, 55, 2015, pp. 379-392.
16. Zhang, H., M. Cetin, and A. Khattak, Queuing delays associated with secondary incidents, *Journal of Intelligent Transportation Systems*, 19:2, 2015.
17. Son S., M. Cetin, and A. Khattak, Exploring traffic data aggregation bias due to the transition of traffic states, *Transportation Research Record: Journal of the Transportation Research Board*, 2443, National Academies, Washington, D.C., 2014, pp. 78-87.
18. Dong C., D. Clarke, X. Yan, A. Khattak, & B. Huang, Multivariate random-parameters zero-inflated negative binomial regression model: An application to estimate crash frequencies at intersections, *Accident Analysis and Prevention*, 70, 2014, pp. 320–329.
19. Fontes T., P. Fernandes, H. Rodrigues, J. Bandeira, S. Pereira, A. Khattak, & M. Coelho, Are HOV/eco-lanes a sustainable option to reducing emissions in a medium-sized European city? *Transportation Research Part A: Policy and Practice*, Volume 63, 2014, pp. 93–106.
20. Wang X., A. Khattak, & J. Chen, Accuracy of geo-imputation: approach to capture



- microenvironment, *Transportation Research Record: Journal of the Transportation Research Board*, 2382, National Academies, Washington, D.C., 2013, pp. 10-19.
21. Wang, X., & A. Khattak, Is smart growth associated with reductions in CO<sub>2</sub> emissions? *Transportation Research Record: Journal of the Transportation Research Board*, 2375, National Academies, Washington, D.C., 2013, pp. 62-70.
  22. Son S., A. Khattak, N. Kim, Non-coverage errors in surveys due to mobile-phone-only household samples, *Transportation Research Record: Journal of the Transportation Research Board*, 2354, National Academies, Washington, D.C., 2013, pp. 29-39.
  23. Son S., A. Khattak, & X. Wang, P. Agnello, & J. Chen, Quantifying key errors in household travel surveys, *Transportation Research Record: Journal of the Transportation Research Board*, 2354, National Academies, Washington, D.C., 2013, pp. 9-18.
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  25. Wang X. & A. Khattak, Role of travel information in supporting travel decision adaption: Exploring spatial patterns, *Transportmetrica A: Transport Science*, 9:4, 2013, pp. 316-334.
  26. Bandeira J., T. Almeida, A. Khattak, N. Roupail, & M. Coelho, Generating emissions information for route selection: Experimental monitoring and routes characterization, *Journal of Intelligent Transportation Systems*, 17:1 Taylor & Francis Publishers, 2013, pp. 3-17.
  27. Zhang H., Y. Zhang, & A. Khattak, Analysis of large-scale incidents on urban freeways, *Transportation Research Record: Journal of the Transportation Research Board*, 2278, National Academies, Washington, D.C., 2012, pp. 74-84.
  28. Son S., A. Khattak, X. Wang, & J. Chen, Transferring telephone-based national household travel survey to the internet: Application to university students, *Transportation Research Record: Journal of the Transportation Research Board*, 2285 National Academies, Washington, D.C., 2012, pp. 91-99.
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  35. Shay E., & A. Khattak, Household travel decision chains: Residential environment, automobile ownership, trips, and mode choice, *International Journal of Sustainable Transportation*, 6:2, 2012, pp. 88-110.
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  38. Robinson M. & A. Khattak, Traffic information source selection and use in emergency situations, *Transportation Research Record: Journal of the Transportation Research Board*, 2234, National Academies, Washington, D.C., 2011, pp. 71-78.
  39. Khattak A., X. Wang, S. Son, & P. Agnello, University Student Travel in Virginia: Is this Travel Different from the General Population? *Transportation Research Record: Journal of the Transportation Research Board*, 2255, National Academies, Washington, D.C., 2011, pp. 137-145.
  40. Fan Y., A. Khattak, & D. Rodriguez, Household excess travel and neighborhood characteristics: Associations and trade-offs, *Urban Studies*, 48:6, 2011, pp. 1235-1253.

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57. Perver B., D. Rodriguez, & A. Khattak, Space syntax and walking in new urbanist and suburban neighborhoods, *Journal of Urban Design*, 13:1 Taylor and Francis Publishers, 2008, pp. 5-28.
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64. Shay E., & A. Khattak, Auto ownership and use in neo-traditional and conventional neighborhoods, *Transportation Research Record: Journal of the Transportation Research Board*, No. 1902, National Academies, Washington, D.C., 2005, pp. 18–25.
65. Khattak, A., & D. Rodriguez, Travel behavior in neo-traditional neighborhood developments: A case study in USA, *Transportation Research, Part A: Policy and Practice*, 39:6, 2005, pp. 481-500. Offered the 2005 Transportation Research Board Pyke Johnson Award for outstanding paper in transportation systems planning and administration.
66. Anspacher, D., A. Khattak, & Y. Yim, The demand for rail feeder shuttles, *Journal of Public Transportation*, Volume 8, No. 1, 2005, pp. 1-20.
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82. Macek, N., A. Khattak, & R. Quercia, What is the effect of commute time on employment? Analysis of spatial patterns in the New York Metropolitan area, *Transportation Research Record*, 1780, TRB, National Academies, Washington, D.C., pp. 43-52, 2001.
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### **Papers in Review for Presentation and/or Publication**

The following papers were presented at the *Transportation Research Board*, National Academies, Washington, D.C., 2017.

1. Wali B. & A. Khattak, Contributory Fault and Level of Personal Injury to Drivers Involved in Head-on Collisions: Application of copula-based bivariate ordinal models.
2. Zhang M. & A. Khattak, Identifying and Analyzing Extreme Lane Change Events Using Basic Safety Messages in a Connected Vehicle Environment.
3. Liu J., and A. Khattak, Structuring and Integrating Data to Explore Multi-Level Correlates of Driving Volatility, Submitted to *Transportation Research*, Part F.
4. Greene, D., J. Liu, & A. Khattak, How On-Road Fuel Economy Varies with Vehicle Cumulative Mileage and Daily Use? *Transportation Research*, Part D.
5. Robinson M., A. Khattak, J. Sokolowski, P. Foytik, and X. Wang, What is the role of traffic incidents in Hampton Roads hurricane evacuation? Submitted to *ASCE Journal*, 2015.
6. Rodriguez D., B. Morton, Y. Song, C. Frey, N. Roupail, A. Khattak, H. Zhai, E. Shay, & T. Loh, Can Compact Growth Decrease Automobile Emissions? Methodology and its Application to Mecklenburg County, NC, In review, 2015.
7. Bandeira J., P. Fernandes, T. Fontes, S. Pereira, A. Khattak, & M. Coelho, Assessment of eco traffic assignment strategies in an urban corridor. Submitted (Aug 01, 2013) for Publication in *Transportation Research* Part C.
8. Khattak A., X. Wang & J. Liu, Transportation Data Needs for Making Decisions, In preparation, 2016.
9. Khattak A., J. Liu, & X. Wang, Supporting Calmer Instantaneous Driving Decisions: Use of Vehicle Trajectory Data to Generate Alerts and Warnings, Submitted for review to *IET Journal of Intelligent Transportation Systems*.

### **BOOK CHAPTERS**

1. Khattak, A., F. Targa, and Y. Yim, Advanced Traveler Information Systems: Relationship to Traveler Behavior, Chapter 12 in *Assessing the Costs and Benefits of Intelligent Transportation Systems*, Kluwer Academic Publishers, Edited by D. Gillen and D. Levinson, 2004, pp. 218-240.
2. Bandeira, J., S. Pereira, T. Fontes, P. Fernandes, A. Khattak & M. Coelho, An Eco-Traffic Management Tool. Book chapter in Springer series, *Computer-based Modelling and Optimization in Transportation* Edited by: J. de Sousa & R. Rossi, 2014, pp. 41-56.

### **GRADUATE WORK: THESIS & DISSERTATION**

- Dissertation: Khattak A. *Driver Response to Unexpected Travel Conditions: Effect of Traffic Information and Other Factors*. Ph.D., Civil Engineering, Northwestern University. (Published 6 refereed journal papers based on the dissertation work.)



- Thesis: Khattak A. *Conceptual and empirical validation of the 1985 Highway Capacity Manual procedure for unsignalized intersections*. MS Thesis, Civil Engineering, Northwestern University. (Published a refereed journal paper based on the thesis work.)

## 6. CONFERENCE PRESENTATIONS

All *Transportation Research Board* presentations require peer-review of the full paper before acceptance.

### Invited Talks

1. Khattak A., Application of Big Data for Safety Improvement, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
2. Khattak A. Study of Micro-Driving Behaviors at Different Levels of Vehicle Automation and Connectivity, Plenary Session Invited Talk, 16<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Shanghai, China, July 2016.
3. Khattak A. The Role of Connected and Automated Vehicles: How can urban areas use the data they create? Seminar presentation at National Center for Transportation Systems Productivity and Management, Civil Engineering Department, Georgia Institute of Technology, March 2016.
4. Khattak A. Integrating Data to Explore Multi-level Correlates of Driving Volatility & Implications for Intelligent Transportation Systems and Energy Strategies, Opening Speaker in Plenary Session, International Workshop on “Emerging Technology & Information Systems for Connected & Autonomous Vehicle Transportation” In Conjunction with the 2015 International Conference on Information Technology & Intelligent Transportation Systems (ITITS 2015), Chang’an University, Xi’an., China, December 12-13, 2015.
5. 15<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Xian, China, July 2015.
6. Khattak A. Improved Warning and Control Assistance Information Embedded in Basic Safety Messages Transmitted between Connected Vehicles, Plenary Session Invited Talk, 15<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Beijing, China, July 2015.
7. Adler J., A. Khattak, & R. Rupert, (all three presiding), Impacts of New Data and Information Technologies on Transforming Traveler Experience, Workshop 180, Spotlight Session, TRB Annual Meeting in Washington, D.C. 2015.
8. Khattak A. Role of the MPOs in the Deployment of Connected Vehicles, Invited Talk, Tennessee Metropolitan Planning Organization Conference, Kingsport, TN, 2015.
9. Khattak A. Opportunities and Challenges for the Use of Big Data: Applications in the Public Sector, Plenary Session Invited Talk, 14<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Changsha, China, July 2014.
10. Khattak, A., X. Wang, S. Son, J. Chen, University Student Household Travel Survey, Invited paper presented at the Transportation Research Board, National Academies, Washington, D.C., 2014. TRB Session 197 on NHTS.
11. Khattak, A. Informed Choices: A Retrospective, Invited paper presented at the Transportation Research Board, National Academies, Washington, D.C., 2014. TRB Session 692 on Advanced Traveler Information Systems: Celebrating 15 Years of Innovative Research and Technology.
12. Khattak, A. Analysis of challenges and solutions to transportation problems, Invited Talk, Oak Ridge National Laboratory-Seminar on Main Campus, May 2014.
13. Khattak A., What is the Level of Volatility in Instantaneous Driving Decisions? Plenary Session Invited Talk, 13<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Shenzhen, China, August 2013; also invited to present at Hong Kong University of Science and Technology.
14. Khattak A., What is the Level of Volatility in Instantaneous Driving Decisions? PacTrans Seminar Series, University of Washington, November 2013.
15. Khattak A., TranLIVE: Transportation for livability by integrating vehicles and the environment, Plenary Session Invited Talk, 12<sup>th</sup> COTA International Conference of Transportation Professionals, CICTP, Beijing, China, August 2012.
16. Khattak, A., The role of intelligent transportation systems and smart growth, Invited presentation at Conference on Sustainability and Transit Oriented Developments, Seoul, Korea, 2012 (additional presentations at Korea Research Institute for Human Settlements & at Gyeonggi Research Institute, Korea).
17. Khattak A., Sustainability and Intelligent Transportation Systems, Plenary Session Invited Talk, 11th International Conference of Chinese Transportation Professionals, ICCTP, Nanjing, China, August 2011.
18. Khattak A., Panel Member, Traveler and Driver Information: Balance of Supply and Demand, Event 652, Invited Talk, Transportation Research Board, National Academies, Washington, D.C., 2010.
19. Khattak A., Impacts of Regional Development, Travel Behavior, and Spatial Pattern of Emissions in United States, Invited Talk, International Symposium on Transportation System Impacts in the USA and Portugal, Lusio-American Foundation (FLAD), Lisbon, Portugal, March 6, 2008.

20. Khattak A., and A. Sharafsaleh, Intelligent Transportation Systems-ITS Decision Website: Tools, Invited Talk, California Department of Transportation, Sacramento, CA, June 2004.
21. Khattak, A. Traditional Neighborhood Development trip generation study, Invited talk, North Carolina Department of Transportation, Raleigh, NC, 2004.
22. Khattak A. "Access and response to Advanced Traveler Information Systems," Invited talk, Transportation Research Board Annual Meeting, 2003.
23. Khattak A. "Transportation Security: Identifying Vulnerabilities through Spatial Analysis of Risk Perceptions," Invited Talk, Transportation Security Symposium sponsored by the Southeastern Transportation Center, University of Tennessee at Knoxville, 2002.

### **Refereed Presentations**

24. Liu J. & A. Khattak, Geo-Spatial Modeling of Motorist Gate-violation Behaviors at Highway-Rail Grade Crossings. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
25. Wali, B. A. Khattak, & J. Liu, Heterogeneity in Incident Durations: A comparison of random parameter and quantile regressions. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
26. Li X., A. Khattak, & B. Wali, Large-Scale Traffic Incident Duration Analysis: The Role of Multi-Agency Response and Stay Times. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
27. Liu J., A. Khattak, & B. Wali, Do Safety Performance Functions Vary Across Space? Application of Geographically Weighted Regressions. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
28. Rios-Torres J., J. Liu & A. Khattak, Conventional and Hybrid Electric Vehicles: Integrating Driving Cycle Predictions with Power Distribution Optimization. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
29. Greene D. A. Khattak, & B. Wali, Tools for Deployment of Alternative Energy Refueling Infrastructure. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
30. Liu J. & A. Khattak, Geo-Spatial Modeling of Motorist Gate-violation Behaviors at Highway-Rail Grade Crossings. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
31. Wali B. & A. Khattak, Exploring Non-Linear Dependencies in Correlates of Roadway Crashes. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
32. Khattak A., & B. Wali, Dynamics of Driving Regimes Extracted from Basic Safety Messages Transmitted Between Connected Vehicles. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
33. Wali B. & A. Khattak, Heterogeneity in Incident Durations: A comparison of random parameter and quantile regressions. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
34. Xu J., Wali B. & A. Khattak, Injury Severity Analysis of Passenger Vehicle-Truck Collisions and Contributory Unsafe Pre-Crash Behaviors. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
35. Kamrani, M. A. Khattak, & B. Wali, Can Data Generated by Connected Vehicles Enhance Safety? A proactive approach to intersection safety management. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
36. Li X. Xu J., A. Khattak, & B. Wali, Large-Scale Traffic Incident Duration Analysis: The Role of Multi-Agency Response and Stay Times. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
37. Khattak A., M. Kamrani, A. Srinivasan, & S. Chakraborty, Applying Markov Decision Process and Inverse Reinforcement Learning to Understand Driving Decisions in Connected Vehicle Systems.
38. Zhang M., J. Liu, A. Khattak, D. Clarke, A Comparative Study of Rail-Pedestrian and Cyclist Trespassing Crash Injury Severity at Highway-Rail Grade Crossings and Non-Crossings. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
39. Boyake K., A. Khattak, J. Liu, & S. Nambisan, How Do Smartphone and Non-Smartphone Users Access and Use Travel Information? Evidence from the 2014 Puget Sound Regional Household Travel Survey. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2017.
40. Khattak A., J. Liu, X. Li, M. Ng, & B. Wali, Modeling Traffic Incident Duration Using Quantile Regression, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
41. Bae, B. C. Lee, T-Y Pak, & A. Khattak, Modifiable Temporal Unit Problem in Crash-Frequency Modeling, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.

42. Greene, D., A. Khattak, J. Liu, X. Wang, J. Hopson, & R. Goeltz, Is there Evidence for a Gap between On-Road and Test Cycle Fuel Economy? Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
43. Greene, D., J. Liu, & A. Khattak, How On-Road Fuel Economy Varies with Vehicle Cumulative Mileage and Daily Use? Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
44. Bandeira J., P. Fernandes, T. Fontes, S. Pereira, A. Khattak, & M. Coelho, Exploring multiple eco-routing guidance strategies in a commuting corridor, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
45. Lim, H., L. Han, & A. Khattak, The impact of narrow lanes on safety of arterial lanes, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
46. Liu, J., & A. Khattak, Delivering improved alerts, warnings, and control assistance using basic 3 safety messages transmitted between connected vehicles, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
47. Liu, J., A. Khattak, & M. Zhang, Structuring and Integrating Data in Metropolitan Regions to Explore Multilevel Links Between Driving Volatility and Correlates, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
48. Liu, J., A. Khattak, & M. Zhang, What role do pre-crash driver actions play in work zone crashes? Untangling hierarchies in crash data, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2016.
49. Khattak A., & J. Liu, Improved Warning and Assistance Information from Connected Vehicle Basic Safety Messages, 2015 Intelligent Transportation Systems World Congress, Bordeaux, France, 2015.
50. Liu, J., A. Khattak & S. Richards. What Are the Consequences of Drivers Trespassing Highway-Rail Grade Crossings Equipped with Gates? A Spatial Approach Integrated with Path Analysis, 2015 Road Safety & Simulation International Conference, Orlando, FL, 2015.
51. Liu, J., A. Khattak & S. Richards. How Safe Are Narrow Lanes? Applications of Safety Models, 2015 Road Safety & Simulation International Conference, Orlando, FL, 2015.
52. Liu, J., A. Khattak & M. Zhang, Exploring Links between Naturalistic Driving Behaviors and Various Factors in Hierarchies: A Study Integrating Multiple Data Sources, 2015 Road Safety & Simulation International Conference, Orlando, FL, 2015.
53. Zhang, M., A. Khattak, J. Liu & D. Clarke, The Role of Rail-Trespassing Crashes at Highway-Rail Grade Crossings and Non-crossing Tracks? A Comparative Study on Injury Severity, 2015 Road Safety & Simulation International Conference, Orlando, FL, 2015.
54. Wang X, J. Liu, and A. Khattak, Generating Fuel Economy Information to Support Cost Effective Vehicle Choices: Comparing Standard and Customized Driving Cycles, TRB paper # 15-4548, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
55. Khattak A. & J. Liu, Supporting Instantaneous Driving Decisions through vehicle trajectory data, TRB paper # 15-1345, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
56. Liu J., A. Khattak, & L. Han, What is the Magnitude of Information Loss When Sampling Driving Performance Data? TRB paper # 15-0968, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
57. Liu J., A. Khattak & X. Wang, Creating Indices for How People Drive in a Region: A Comparative Study of Driving Performance, TRB paper # 15-0966, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
58. Liu J., A. Khattak, S. Richards, & S. Nambisan, What are the Differences in Driver Injury Outcomes at Highway-Rail Grade Crossings? The Role of Passive and Active Controls, TRB paper # 15-0959, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
59. Wang X., A. Khattak, J. Liu, & D. Clarke, Non-crossing Rail-Trespassing Crashes in the Past Decade: A Spatial Approach to Analysis of Injury Severity, TRB paper # 15-0955, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2015.
60. Liu, J. & A. Khattak, Providing real-time driving volatility information, Paper # 12468, Intelligent Transportation Systems World Congress meeting, Detroit, 2014.
61. Bandeira, J T. Fontes, S. Pereira, P. Fernandes, A. Khattak, M. Coelho, Assessing the importance of vehicle type for the implementation of eco-routing systems, 17th Meeting of the EURO Working Group on Transportation, EWGT-2014, July 2014, Sevilla, Spain, Transportation Research Procedia, DOI: 10.1016/j.trpro.2014.10.063.
62. Bartnick B., J. Liu, S. Richards, & A. Khattak, Driver behavior at railway-highway grade crossings with passive traffic controls: A driving simulator study, TRB paper # 14-2110. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2014. Also presented at 2014 Global Level Crossing Safety & Trespass Prevention Symposium, Urbana, IL, August 2014.

63. Liu J., B. Bartnick S. Richards, & A. Khattak, How are driver characteristics related to safety at railroad-crossings? The case of passive railroad grade crossings, TRB paper # 14-4413. Presented at the Transportation Research Board, National Academies, Washington, D.C., 2014.
64. Wang X., A. Khattak, G. Amoli, S. Son, & J. Liu, What is the Level of Volatility in Instantaneous Driving Decisions? TRB Paper 14-2780, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2014.
65. Son S., A. Khattak & K. Choi, Comparing Travel Behavior Between Transit-Oriented Developments and Automobile-Oriented Developments: Matched Pair Analysis, TRB Paper 14-2327, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2014.
66. Ng M., A. Khattak, & W. Talley, Semi-Markov Stochastic Process for Primary and Secondary Incident Modeling, TRB Paper 14-2721, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2014.
67. Wang X., A. Khattak, & Y. Zhang, Is Smart Growth Associated with Reductions in CO<sub>2</sub> Emissions? TRB Paper 13-2350, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
68. Son S., & A. Khattak, Non-coverage Errors in Surveys due to Mobile-Phone-Only Household Samples, TRB Paper 13-2028, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
69. Wang X., A. Khattak, & J. Chen, Accuracy of Geo-imputation: Approach to Capture Microenvironment, TRB Paper 13-0700, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
70. Son S., A. Khattak, & X. Wang, P. Agnello, & J. Chen, Quantifying Key Errors in Household Travel Surveys, TRB Paper 13-0552, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
71. Al-Deek H., T. Lochrane, R. Chandra, & A. Khattak, Role of Dynamic Message Signs in Travelers' Diversion During Unexpected Congestion on Toll Roads, TRB Paper 13-0931, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
72. Fontes T., P. Fernandes, H. Rodrigues, J. Bandeira, S. Pereira, A. Khattak, & M. Coelho, Are Eco-lanes a Sustainable Option to Reduce Emissions in a Medium-Sized European City? TRB Paper 13-0550, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2013.
73. Khattak A., Is smart growth associated with reductions in CO<sub>2</sub> emissions? 2012 China-US bilateral forum on strategic development in transportation, Shanghai Jiao Tong University, China, August 2012.
74. Bandeira J., M. Coelho, M. Pimentel, A. Khattak, Impact of Intercity Tolls in Portugal – An Environmental Perspective, *Procedia-Social and Behavioral Sciences*, Volume 48, 2012, pp. 1174–1183.
75. Son, S., A. Khattak, & X. Wang, Transforming the Telephone-Based National Household Travel Survey to the Internet, TRB Paper 12-1488, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2012.
76. Zhang, H., M. Cetin, and A. Khattak, Queuing delays associated with secondary incidents, **Best paper award**, 18th World Intelligent Transportation Systems World Congress, Orlando, FL, October 2011.
77. Wang X., A. Khattak, & S. Son, What Can We Learn from Analyzing University Student Travel Demand., TRB Paper 12-2783, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2012.
78. Duanmu J., P. Foytik, A. Khattak, & M. Robinson, Distribution analysis of freight transportation using gravity model and genetic algorithm, TRB Paper 12-2782, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2012.
79. Zheng Libin, R. Michael Robinson, Asad Khattak, Xin Wang, All Accidents are Not Equal: Using Geographically Weighted Regressions Models to Assess and Forecast Accident Impact, Presented at the 3rd International Conference on Road Safety and Simulation, September 14-16, 2011, Indianapolis, USA.
80. Wang, X., A. Khattak, P. Agnello, and J. Chen, Do Trip Productions Vary in Space? Presented at Workshop, Using National Household Travel Survey Data for Transportation Decision Making, Transportation Research Board, National Academies, Washington, D.C., 2011.
81. Khattak A., X. Wang, S. Son, P. Agnello, and J. Chen, A Comparative Analysis of University Student Travel Behavior in Virginia, Presented at Workshop, Using National Household Travel Survey Data for Transportation Decision Making, Transportation Research Board, National Academies, Washington, D.C., 2011.
82. Khattak A., X. Wang, H. Zhang, iMiT: A Tool for Dynamically Predicting Incident Durations, Secondary Incident Occurrence, and Incident Delays, TRB Paper No. 11-0803, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
83. Zhang H. and A. Khattak, Spatio-Temporal Patterns of Incidents on Urban Freeways, TRB Paper No. 11-2732, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
84. Son, S., A. Khattak, and J. Chen, A Comparative Analysis of University Students' Acquisition and Use of Travel Information, TRB Paper No. 11-0752, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.

85. Son, S., M. Cetin, and A. Khattak, Are Some Freeway Lanes Under-utilized?, TRB Paper No. 11-2707, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
86. Khattak A., X. Wang, S. Son, and P. Agnello, University Student Travel in Virginia: Is it different from the General Population? TRB Paper No. 11-0753, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
87. Robinson, M. and A. Khattak, Traffic Information Source Selection and Use in Emergency Situations, TRB Paper No. 11-2857, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
88. Bandeira J., T. Almeida, A. Khattak, N. Rouphail, and M. Coelho, Generating Emissions Information for Route Selection: Experimental Monitoring and Routes Characterization, TRB Paper No. 11-0515, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2011.
89. Khattak, A., X. Wang, and H. Zhang, A tool for dynamically predicting: incident durations, secondary incident occurrence, and incident delays, Presented at the 12<sup>th</sup> World Conference on Transportation Research, Lisbon, Portugal, 2010.
90. Wang, X. and A. Khattak, Role of Travel Information in Supporting Travel Decision Adaption: Exploring Spatial Patterns, TRB Paper No. 10-1208, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2010 & 12<sup>th</sup> World Conference on Transportation Research, Lisbon, Portugal, 2010.
91. Robinson M., and A. Khattak, Route change decision-making by evacuees facing congestion, TRB Paper No. 10-2258, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2010.
92. Khattak A., X. Wang, H. Zhang, Spatial analysis and modeling of traffic incidents for proactive incident management and strategic planning? TRB Paper No. 10-1554, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2010.
93. Zhang, H., M. Cetin, and A. Khattak, Evaluating factors that impact queuing delays of secondary incidents, TRB Paper No. 10-1796, Presented at the Transportation Research Board, National Academies, Washington, D.C., 2010.
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## 7. TECHNICAL REPORTS

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  42. Kanafani A., A. Khattak, M. Crotty and J. Dahlgren, *A planning methodology for intelligent urban transportation systems*. Research Report UCB-ITS-PRR-93-14, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1993.
  43. Polydoropoulou A., M. Ben-Akiva, A. Khattak, and G. Lauprete, *Commuters' normal and shift decisions in unexpected congestion: En route responses to advanced traveler information systems*. Research Report UCB-ITS-PRR-96-21, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1996.
  44. Khattak A., and A. Kanafani, *PLANiTS: The Case-Based Reasoner as a planning tool for intelligent transportation systems*. Research Report UCB-ITS-PRR-95-23, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1995.
  45. Khattak A., and A. Kanafani, *PLANiTS: A functional description*. Research Report UCB-ITS-PRR-95-7, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1995.
  46. Hall R., Y. Yim, A. Khattak, M. Miller, S. Weissenberger, *TravInfo field operational test evaluation plan*. Working papers UCB-ITS-PWP-93-16, UCB-ITS-PWP-94-03, UCB-ITS-PWP-95-4, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1993, 1995.
  47. Khattak A., H. Al-Deek, and R. Hall, *Concept of an Advanced Traveler Information System testbed for the Bay Area: Research issues*. PATH Technical Note 94-6, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
  48. Khattak A., A. Kanafani, and E. Le Colletter, *Stated and reported route diversion behavior: Implications on the benefits of ATIS*. Research Report UCB-ITS-PRR-94-13, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
  49. Khattak A., and A. de Palma, *The impact of adverse weather conditions on the propensity to change travel decisions: A survey of Brussels commuters*. Research Report UCB-ITS-RR-94-12, Institute of Transportation Studies, University of California at Berkeley, California, 1994.
  50. Khattak, A., H. Al-Deek and P. Thananjeyan, *A combined traveler behavior and transportation system performance model with ATIS*. Research Report UCB-ITS-PRR-94-06 & Technical Note PATH-95-5, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
  51. Khattak A., J. Schofer, and M. Wang, *A simple procedure for predicting freeway incident duration*. Research Report UCB-ITS-PRR-94-26, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.

52. Khattak A., A. Polydoropoulou, and M. Ben-Akiva, *Commuters' normal and shift decisions in unexpected congestion: Pre-trip response to Advanced Traveler Information Systems*. Research Report UCB-ITS-PRR-96-7, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
53. Vlahos N., A. Khattak, M. Manheim, and A. Kanafani, *The role of teamwork in a planning methodology for intelligent urban transportation systems*. Working Paper UCB-ITS-PWP-94-08, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
54. Miller M., A. Khattak, R. Hall, et al. *Smart Corridor Evaluation Plan: Conceptual Design*. Research Report UCB-ITS-PRR-94-01, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1994.
55. Khattak A., *Behavioral impacts of recurring and incident congestion and response to Advanced Traveler Information Systems in the Bay Area: An overview*. Working Paper UCB-ITS-PWP-93-12, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1993.
56. Khattak A., and E. Le Colletter, *Stated and reported diversion to public transportation under incident conditions: Implications on the benefits of Multimodal ATIS*. Research Report UCB-ITS-PRR-94-14, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1993.
57. Khattak A., H. Noeimi, H. Al-Deek, and R. Hall, *Advanced Public Transportation Systems: A taxonomy and commercial availability*. Research Report UCB-ITS-PRR-93-9, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1993.
58. Khattak A., H. Al-Deek, Y. Yim, and R. Hall, *Bay Area ATIS Testbed Plan*. Research Report UCB-ITS-PRR-92-1, Partners for Advanced Transit and Highways (PATH), Institute of Transportation Studies, University of California at Berkeley, California, 1992.
59. Khattak A., *Conceptual issues and empirical evidence regarding the effect of information on traveler behavior*. Working Paper TSU Ref. 660, Transport Studies Unit, University of Oxford, 1991.
60. Khattak A., and J. Polak, *Effect of parking information on travellers' knowledge and behavior*. Working Paper TSU Ref. 661, Transport Studies Unit, University of Oxford, 1991.
61. Jovanis P., A. Khattak, and N. Roupail, *Validation of selected signalized intersection capacity factors for small urban areas in Illinois*. Research report FHWA/IL/RC-010, Federal Highway Administration & Illinois Universities Transportation Research Consortium & The Transportation Center, Northwestern University, Illinois, 1990.

## 8. GRANTS/SPONSORED RESEARCH AND TRAINING PROJECTS

1. Khattak—Principal Investigator for University of Tennessee, CSCRS-Collaborative Sciences Center for Road Safety, National University Transportation Center, US Department of Transportation (ODU Center for Transportation Research), Consortium with University of North Carolina-Chapel Hill as lead. \$450,000 for 2016-2017 (plus 1:1 match).
2. Khattak—Principal Investigator, with Chakraborty & Nambisan as Co-PIs, Study of Driving Volatility in Connected and Cooperative Vehicle Systems, US National Science Foundation, University of Tennessee at Knoxville, \$399,793, Sept. 1, 2015-Aug 31, 2018.
3. Khattak—Principal Investigator, with Dr. Nambisan Co-PI, *Assessing the impact of mixed vehicle technologies on the efficiency of traffic coordination systems*, US Department of Energy through Oak Ridge National Laboratory, University of Tennessee at Knoxville. \$35,145, 2016-2017.
4. Khattak—Principal Investigator, with S. Richards & D. Chimba as Co-PIs, *Highway Safety Manual, Safety Performance Functions (SPF) and Roadway Calibration Factors*, Tennessee Department of Transportation, University of Tennessee at Knoxville, \$270,712, Oct. 1, 2015-Sept 30, 2017.
5. Khattak—Principal Investigator, with S. Nambisan, C. Cherry, & D. Greene as Co-PIs, *Green Generates Green*, Tennessee Department of Transportation, University of Tennessee at Knoxville, \$163,224, Oct. 1, 2015-Sept 30, 2017.
6. Khattak—Co-Principal Investigator, Dr. Greene PI, *Fuel Economy Research*, US Department of Energy through Oak Ridge National Laboratory, University of Tennessee at Knoxville. \$110,567, 2015-2016.
7. Khattak—Co-Principal Investigator, *Planning Tools for Deployment of Alternative Fuels Infrastructure*, US Department of Energy through Oak Ridge National Laboratory, University of Tennessee at Knoxville, \$24,832, 2014-2015.
8. Khattak—Co-Principal Investigator, Dr. Greene PI, *Predicting Fuel Economy to Support Vehicle Purchasing Decisions*, US Department of Energy through Oak Ridge National Laboratory, University of Tennessee at Knoxville. \$62,729 2014-2015.

9. Khattak—Principal Investigator & Coordinator, *Big Data for Safety Monitoring, Assessment, and Improvement*, US Department of Transportation through the Southeastern Transportation Center, University of Tennessee at Knoxville. \$85,000 + \$50,000 1:1 match, 2014-2016.
10. Khattak—Principal Investigator, *Integrated Simulation and Safety: Incident and Emergency Situations*, US Department of Transportation through the Southeastern Transportation Center, University of Tennessee at Knoxville. \$27,500 + 1:1 match, 2014-2015.
11. Khattak—Principal Investigator, *Crash Modification Factors and the Highway Safety Manual: Enhancing the Work Zone Procedure*, US Department of Transportation through the Southeastern Transportation Center, University of Tennessee at Knoxville. \$12,500 + \$25000 + 1:1 match, 2014-2016.
12. Khattak—Principal Investigator & Coordinator, *What is the Extent of Harm in Rail Pedestrian Crashes*, US Department of Transportation through the NURail Center, University of Tennessee at Knoxville. \$80,000 + 1:1 match, 2014-2015.
13. Khattak—Principal Investigator, *Unmet Data Needs of Transportation Planners*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$94,408 (\$35,085 sub-contract to University of Tennessee) for 2011-2015.
14. Khattak—Principal Investigator, *Development of Base Macro and Micro Models for the City of Virginia Beach*, City of Virginia Beach, VA. \$352,000, 2013-2014.
15. Khattak—Principal Investigator for Old Dominion University, TranLIVE: Tier 1 University Transportation Center, US Department of Transportation (ODU Transportation Research Institute), Consortium with University of Idaho as lead. \$600,000 for 2012-2014 & \$600,000 for 2014-2015 (plus 1:1 match).
  - a. Khattak-PI: Reducing Energy Use and Emissions through Innovative Technologies and Community Designs: Methodology and Application in Virginia, \$240,000, US DOT, (\$75,000 sub-contract to University of Tennessee), plus 1:1 match.
  - b. Other TranLIVE UTC projects included-1) The impact of parameter uncertainty on the emission-based ranking of transportation projects (PI: Ng), 2) Develop real-time prediction of queues at signalized intersections to support eco-driving applications (PI: Cetin), 3) Optimize freight routes and modes to minimize environmental impacts (PI: Robinson), 4) Develop vision-based systems to track and classify vehicles at high fidelity to enable estimation of emissions (PI: Iftekharuddin), 5) New strategies for the emergency vehicle routing to reduce response time using vehicle-to-vehicle communications (PI: Cetin)
16. Khattak—Co-Principal Investigator, *Investigation of Sources of Congestion at the Hampton Roads Bridge Tunnel*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$98,505 for 2013-2014.
17. Khattak—Principal Investigator, *Analysis of Virginia add-on National Household Travel Survey and Metropolitan Washington Council of Governments Household Travel Survey*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$150,000 for 2011-2013.
18. Khattak—Co-Principal Investigator, *Investigation of New Equilibrium Assignment Methods for the VDOT Travel Demand Models*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$199,000 for 2010-2013.
19. Khattak—Principal Investigator, *Do Trip Productions Vary in Space?* Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$16,251 for 2011-2012.
20. Khattak—Principal Investigator, *Supplemental University National Household Travel Survey*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$52,046 for 2010-2011.
21. Khattak—Principal Investigator, *Comparative Analysis of Virginia University NHTS*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$90,000 for 2010-2011.
22. Khattak—Co-Principal Investigator, *Virginia Multimodal Transportation and Distribution Study*, US Department of Transportation, Washington, D.C., DTOS59-10-G-00105, Virginia Modeling, Analysis, and Simulation Center and ODU Transportation Research Institute, \$243,500 for 2010-2011.
23. Khattak—Co-Principal Investigator, *Evaluation of Volume-Delay Functions and their Implementations in VDOT's Travel Demand Models*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$195,000 for 2009-2010.
24. Khattak—Co-Principal Investigator, *Transportation Alternatives Modeling*, Virginia General Assembly, through ODU Virginia Modeling, Analysis and Simulation Center (VMASC), \$148,000 for 2009-2010.
25. Khattak—Principal Investigator, *Nationwide Household Travel Survey*, Virginia Department of Transportation, VA. (ODU Transportation Research Institute), \$67,566 for 2008-2010.
26. Khattak—Principal Investigator, *ITS Decision: Gateway to understanding and applying ITS*, California Department of Transportation, CA. (ODU Transportation Research Institute), \$111,000 for 2008-2010.

27. Khattak—Co-Principal Investigator, *Hampton Roads Transportation Alternatives Traffic Simulation*, Virginia General Assembly, through ODU Virginia Modeling, Analysis and Simulation Center (VMASC), \$250,000 for 2008.
28. Khattak—Principal Investigator, *Primary and secondary incident management: Predicting durations in real-time*, Virginia Transportation Research Council, Virginia Department of Transportation, ODU Transportation Research Institute, \$169,838, 2007-2009.
29. Khattak—A proposal to establish Old Dominion University Transportation Research Institute, Pooled funds from Virginia Transportation Research Council and Office of the Dean, Old Dominion University, \$80,000, 2007-2010.
30. Khattak—Co-Principal Investigator, John Sokolowski, Principal Investigator, *Hampton Roads Hurricane Evacuation Study*, Virginia Department of Emergency Management (VDEM), ODU Virginia Modeling, Analysis and Simulation Center (VMASC), \$285,000, 2007-2008.
31. Khattak A.—Co-investigator, Weigle M., S. Olariu, Principal Investigators, *NeTS-WN: An Architecture for the Notification of Traffic Incidents and Congestion (NOTICE)*, National Science Foundation, \$395,000, 2007-2010.
32. Khattak—Principal Investigator, *ITS Decision Enhancements: Developing Case-Based Reasoning Modules for High-Impact Technologies*, California Department of Transportation through the PATH Program, University of California at Berkeley. (ODU Transportation Research Institute), \$44,000 for 2006-2007.
33. Khattak A.—Principal Investigator, *Economic Impact of Traffic Incidents on North Carolina's Interstate Facilities*, NC Department of Transportation. (UNC-Center for Urban & Regional Studies) \$89,679 for 2005-2006. Subcontract to Old Dominion University Transportation Research Institute, \$34,000 for 2006-2007.
34. Khattak—Principal Investigator, *Innovative Large Truck Speed Enforcement on Interstate Highways*, US Department of Transportation through the Southeastern Transportation Center, University of Tennessee at Knoxville. (ODU Transportation Research Institute) \$20,000 for 2007-2008.
35. Khattak—A proposal for the Carolina Transportation Program, Pooled funds from UNC-Chapel Hill from the Center for Urban and Regional Studies, Department of City and Regional Planning, Dean of the College of Arts and Sciences and Office of the Vice Chancellor for Research, \$122,000, 2005-2008.
36. Khattak—Co-Principal Investigator, *Effectiveness of Traveler Information Tools*, NC Department of Transportation. (ITRE-Institute of Transportation Research and Education, North Carolina State University) \$169,995 for 2005-2007.
37. Khattak—Principal Investigator, *Educational Funding for the Carolina Transportation Program at University of North Carolina at Chapel Hill*, US Department of Transportation through the Southeastern Transportation Center, University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$340,000 + 1:1 match, for 1999-2004.
38. Khattak—Principal Investigator, *Multi-Year Travel Modeling Project*, NC Department of Transportation. (UNC-Center for Urban & Regional Studies) \$95,000 for 2004-2007.
39. Khattak—Principal Investigator, *Walk, Don't Walk: Resources for Planners and Engineers*, US Department of Transportation, Southeastern Transportation Center, University of Tennessee at Knoxville (UNC-Center for Urban & Regional Studies) \$10,000 + 1:1 match, 2002-2003.
40. Khattak—Co Investigator, *Testing Associations between Physical Activity and Built Environment*, Robert-Wood Johnson Foundation, (UNC-Center for Urban & Regional Studies) \$473,000, 2003-2005.
41. Khattak—Co Investigator, *Advanced Modeling System for Assessing Long-Term Regional Development Patterns, Travel Behavior, Emissions, and Air Quality*, US Environmental Protection Agency, STAR (Science to Achieve Results) Program, (UNC-Center for Urban & Regional Studies) \$675,000, 2004-2009.
42. Khattak—Principal Investigator, *Incident Management Assistance Patrols: Assessment and Investment Benefits and Costs*, NC Department of Transportation. (UNC-Center for Urban & Regional Studies) \$99,900, 2002-2003.
43. Khattak—Principal Investigator, *Traditional Neighborhood Development Trip Generation Study*, NC Department of Transportation. (UNC-Center for Urban & Regional Studies) \$125,000 for 2002-2003.
44. Khattak—Principal Investigator, *Intelligent Transportation System Decisions: Developing Case Based Reasoning and Expert Systems*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. (UNC-Center for Urban & Regional Studies) \$52,800 for 2001-2002 + \$52,800 for 2002-2004. (Total project = \$700,000)
45. Khattak—Principal Investigator, *Which Vehicles are Prone to Rollover and Occupant Injuries: Passenger Cars, Vans, Utility Vehicles or Light Trucks?* US Department of Transportation through Southeastern Transportation Center, University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$9,995 + 1:1 match,, 2000-2001.
46. Khattak—Principal Investigator, *A Comparison of Rollovers with Non-Rollovers: An analysis of Injury Severity in Large Truck Crashes*, US Department of Transportation through Southeastern Transportation Center,

- University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$9,998 + 1:1 match, 2000-2001.
47. Khattak—Principal Investigator, *Understanding the role of truck-driver, occupational and high-risk roadway factors in truck-involved collisions*, US Department of Transportation through Southeastern Transportation Center, University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$80,000 + \$80,000—match, 2001-2002.
  48. Khattak—Co-Investigator, *Interstate 40 Value Pricing Study*, US Department of Transportation, Federal Highway Administration. (UNC-Center for Urban & Regional Studies) \$80,000 + 1:0.2 match, 2002-2004.
  49. Khattak—Consultant, *In-Vehicle Energy and Emission Information System*, National Science Foundation through Civil Engineering Department, North Carolina State University. 2002-2003, \$299,997.
  50. Khattak—Co-Investigator, *Consumer demand for personalized demand responsive transit service*, California Department of Transportation through the PATH Program at University of California, Berkeley, \$200,000 for 2001-2003.
  51. Khattak—Co-Investigator, *Small Aircraft Transportation Systems (SATS) market analysis study*, NC Division of Aviation & NASA through Research Triangle Institute (UNC-Kenan-Institute for Private Enterprise) \$60,409, 2002-2003.
  52. Khattak—Co-Investigator, *Environmental Determinants of Adolescent Obesity*, National Institute of Health, Special Interest Project. (UNC-Carolina Population Center) \$300,000, 2000-2002.
  53. Khattak—Principal Investigator, *How Can NCDOT Employ an Improved Policy of Wetland Mitigation Banking to Better Support Its Transportation Mission?* Center for Transportation and Environment, Institute of Transportation Research and Education, North Carolina State University; to support Jeff Masten's Masters' Project work. (UNC-Center for Urban & Regional Studies) \$15,000, 1999-2000.
  54. Khattak—Principal Investigator, *Multivehicle Roadway Crashes: The Role of Information*, US Department of Transportation through Southeastern Transportation Center, University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$9,981 + 1:1 match, 2000-2001.
  55. Khattak—Co-Investigator, *Analysis of Fatal Traffic Crashes in North Carolina and Related Countermeasures*, Pooled fund study—North Carolina Department of Transportation and Federal Highway Administration. (UNC-Highway Safety Research Center) \$33,444, 1999-2000; + \$50,144, 2000-2001.
  56. Khattak—Principal Investigator, *Secondary Road Accidents and Counter-measures*, US Department of Transportation through Southeastern Transportation Center, University of Tennessee at Knoxville. (UNC-Center for Urban & Regional Studies) \$45,000+ 1:1 match 1996-1997; \$37,000 + 1:1 match, 1997-1999.
  57. Khattak—Principal Investigator, *A Planning Methodology for Intelligent Urban Transportation Systems*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. (UNC-Center for Urban & Regional Studies) \$11,200, 1996-1997.
  58. Khattak—Principal Investigator, *Integrating Spatial Information Technologies in Planning and Policy Instruction, Funding for Instructional Technology*, UNC-Chancellor's Task Force on Instructional Technology, University of North Carolina, Chapel Hill, \$46,977, 1996-1997.
  59. Khattak—Principal Investigator, *PLANiTS: Methodological Development and Exploration of Financial Support*, UNC-Junior Faculty Development Award. (UNC-Department of City & Regional Planning), \$5,000, 1997-1998.
  60. Khattak—Principal Investigator, *California Advanced Public Transportation Systems: State of the Art Report on Availability and Use*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. (UNC-Center for Urban & Regional Studies), \$39,200 1995-1996.
  61. Khattak—Principal Investigator, *Understanding behavioral response to travel information*, Volpe National Transportation Center through Massachusetts Institute of Technology, (Institute of Transportation Studies, University of California at Berkeley), \$5,500, 1995.
  62. Khattak—Co-Investigator, *Framework for Analyzing Transportation Networks with Traveler Information Systems*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. \$201,369, 1992-1995.
  63. Khattak—Co-Investigator, *Advanced Traveler Information Technologies for Public Transportation Systems and High Occupancy Vehicles*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. \$199,211, 1992-1995.
  64. Khattak—Co-Investigator, *Toward a Planning Methodology for Intelligent Urban Transportation Systems*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. \$401,879, 1992-1995.

65. Khattak—Co-Investigator, *Design of Evaluation Plan for TravInfo*, California Department of Transportation, through PATH Program at University of California, Berkeley and Division of New Technology, Materials and Research. \$450,000, 1992-1996.
66. Khattak—Co-Investigator, *Design of Evaluation Plan for Smart Corridor*, Los Angeles County Transportation Commission (LACTC), Los Angeles, and California Department of Transportation through the California PATH Program, \$42,000, 1992-1993.

## 9. EDUCATIONAL ACTIVITIES

Total number of students advised, including current students: PhD: 10 and MS: 43 Post-docs: 3

Total number of collaborators (co-editors, co-PIs, and co-authors): 78

Ph.D. committee chair: Dr. E. Shay, Dr. Y. Fan, Dr. R. M. Robinson, Dr. H. Zhang, Dr. X. Wang, Dr. R. Morgan, Dr. R. Case, Dr. S. Son, Dr. J. Bandeira (co-advisor), and J. Liu, (Current Ph.D. students include, M. Kamrani, X. Li, B. Wali, M. Zhang)

MS Thesis/Project Advisees: X. Li, J. Morgado, L. Zheng, Y. Zhang, I. Hoag, G. Jayaramarajeurs, V. Bheemaiah, D. Anspacher, S. Wernick, K. Monast, J. Lewis, M. Rocha, B. Rasmussen, P. McDonough, F. Targa, J. Genzler, P. Jolicouer, J. Raw, L. Stalker, R. Schneider, N. Macek, W. Smithson, L. Wolinetz, A. Frankel, L. Lewis, A. Siefkes, J. Masten, P. McMahan, C. Duncan, M. Venner, H. Renski, M. Raimi, J. DiStephano, J. Tallmadge, K. Sledge

## 10. SERVICE

### SERVICE TO SCIENTIFIC AND PROFESSIONAL ORGANIZATIONS

#### *Editorship of Journals and Review*

Editor-in-Chief, <a href="#">Journal of Intelligent Transportation Systems</a> , Taylor & Francis Publishers (determine scope, manage reviews, help in production & marketing)	2003-date
Associate Editor, <i>Journal of Intelligent Transportation Systems</i> , Taylor & Francis Publishers	2000-2003
Associate Editor, <i>International Journal of Sustainable Transportation</i> , Taylor & Francis Publishers (manage reviews & help in production & marketing)	2006-date

Reviewer for transportation and planning research journals:

- Transportation Research Board, National Academies, Washington, D.C.
- Transportation Research, Parts A, B & C, Pergamon Press, Oxford, England.
- Transportation Science, Operations Research Society of America.
- World Development, Elsevier Journals, USA.

Review panels for government agencies or educational institutions

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|---|-----------|
| • California Department of Transportation                                     | 1991-     |
| • University of California at Berkeley, PATH Program                          | 1995-     |
| • University of California at Berkeley, University of California Trans Center | 1998-2015 |

#### *Professional Memberships*

- |  |                         |
|--|-------------------------|
| • Member, SHRP II Expert Task Group on Interaction Between Transportation Capacity, Economic Development and Land Use, and Integrating Economic Considerations                   | 2007                    |
| • Member, User Information Systems Committee,<br>Transportation Research Board, National Academies, Washington, D.C.   | 1993-2006<br>2012-date  |
| • Member, Intelligent Transportation Systems Committee,<br>Transportation Research Board, National Academies, Washington, D.C.   | 2004-2012               |
| • Co-Chair, Subcommittee on Advanced Traveler Information Systems,<br>User Information Systems Committee, Transportation Research Board,<br>National Academies, Washington, D.C. | 2000-date               |
| • Member, Council of University Transportation Centers,<br>(CUTC represents major transportation research and education centers in the US)                                       | 1998- date<br>1998-date |
| • Member, SAE—Society of Automotive Engineers  | 2001-2002               |

### DEPARTMENTAL SERVICE

#### *University of Tennessee*

Developed UT-Transportation Eng. & Sci. Program materials	2013-
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Coordinator, Transportation Engineering & Science Program, Civil & Env. Eng.	2013-
Chair of Search Committee in Construction Engineering (2 successful hires)	2013-2014

*Old Dominion University*

Developed ODU-Transportation Program-research, education & outreach	2006-2013
Developed Transportation Research Cluster at ODU, established in 2006	2006-2008
Director, Transportation Research Institute at ODU, established in 2007	2007-2013
Chair of Search Committee in Transportation Engineering (successful hire)	2008

*UNC-Chapel Hill*

Associate Department Chair—Technology, Planning, UNC-Chapel Hill	2002-2003
Director, Transportation Specialization, University of North Carolina-Chapel Hill	1995-2006
Developed <a href="#">Carolina Transportation Program</a>	1996-1998
Director, Carolina Transportation Program (funding, research production, marketing, newsletters, brochure, faculty and student participation)	1998-2006
Recruited & mentored a transportation faculty member	2000-2006
Elevated transportation to an independent specialization in DCRP	2002-2006

**SELECTED UNIVERSITY SERVICE**

*University of Tennessee*

Tenure and Promotion guidelines committee	2014-date
UTK Southeastern Transportation Center (coordinator Big Data & Safety initiative)	2013-date
Co-Director, Initiative for Sustainable Mobility (a campus-wide organized research unit)	2013-date

*Old Dominion University*

Director, Center for Innovative Transportation Solutions	2011-2013
BCET Tenure and Promotion Committee	2009-2012
Member, Inter-disciplinary Studies Committee	2008-2013

*UNC-Chapel Hill*

Initiated a dual graduate degree in Transportation Planning and Engineering, given by UNC-CH and NCSU	2003-2005
Member, Carolina North Infrastructure Advisory Committee	2003
Member, Pedestrian and bicycle committee (analysis of crashes by DCRP student)	2000-2003
Faculty fellow, <a href="#">Center for Urban &amp; Regional Studies</a>	1998-2006
Worked closely with <a href="#">Highway Safety Research Center</a> , on safety research and education	2003-2006
Affiliated faculty, <a href="#">Kenan Institute</a> for Private Enterprise-Logistics & Digital Strategy	2002-2004

**SERVICE TO FEDERAL & STATE AGENCIES AND PRIVATE SECTOR**

- Direct participation in research, education, and outreach of several USDOT Univ Trans Ctrs.
 

University of Tennessee, STC-Southeastern Transportation Center	1997-date
University of Idaho TranLIVE	2011-date
University of Maryland national center NCSTPID	2013-date
University of Illinois NURail	2014-date
- Helped US Department of Transportation by participating in workshops on Research and Development of Technology & Innovation, Washington D.C. 2003
- Direct participation in research, education, and outreach of various state DOTs
 

California Department of Transportation	1991-2001
North Carolina Department of Transportation	1997-2007
Virginia Department of Transportation	2007-date
- Developer of PLANiTS, which manifested in the development of a popular Intelligent Transportation Systems web site, known as “ITS Decision” for the California DOT. Caltrans invested \$700,000 plus in developing the website, which was visited by planners and engineers from around the world 1996-2006
- Study on Freeway Service Patrols helped NC Department of Transportation decide on locations of such services in NC 1998-2000

**SELECTED CONSULTING ACTIVITIES**

Consulted with:

- Strategic Highway Research Program II, SHRP Project L-02 (Establishing Monitoring Programs for Mobility and Travel Time Reliability) 2010-2012
- American Concrete Pavement Association, Washington, D.C. (safety) 2006-2007
- [American Transportation Research Institute](#), Alexandria, VA (trucking safety) 2004
- [Research Triangle Institute](#), Research Triangle Park, NC (small aircrafts) 2002
- *Bellomo-McGee, Inc.* (vehicle safety) 2002-2004
- *National Cooperative Highway Research Program*—NCHRP (vehicle safety) 2002
- [University of California at Berkeley](#) (traveler behavior) 1995-2003
- *Federal Highway Administration* (pedestrian safety) 1998
- North Carolina State University, University of Maryland, and University of Central Florida 2006-2013
- Virginia Department of Transportation 2009-2013