RAUL E. AVELAR, Ph.D., P.E., PMP

EDUCATION

Doctor of Philosophy, Civil Engineering major and Statistics minor, Oregon State University, Corvallis, OR. June 2012.

Master of Science, Civil Engineering major and Statistics minor, Oregon State University, Corvallis, OR. September 2010.

Bachelor of Science in Industrial Engineering, Universidad Centroamericana "José Simeón Cañas", San Salvador, El Salvador, Central America. June 2004.

PROFESSIONAL LICENSES AND CREDENTIALS

Professional Engineer (Civil) in the State of Texas—Registration No. 122 224

Project Management Professional — Global credential No. 1 962 995

PROFESSIONAL EXPERIENCE

Senior Research Transportation Engineer, Insurance Institute for Highway Safety, Arlington, VA, February 2023-present. Conception and execution of scientific studies in road safety research with focus in infrastructure evaluations.

Research Scientist, Texas A&M Transportation Institute, College Station, TX, September 2021-January 2023. Involved in multiple transportation research projects. This position includes serving as Principal Investigator and Co-Principal Investigator, designing experiments, analyzing large databases, writing proposals and journal papers, and presenting results to various audiences.

Roadway Safety Program Manager, Texas A&M Transportation Institute, College Station, TX, February 2018-present. Manage a program of four researchers and multiple students in the Roadway Safety Program of TTI.

Associate Research Engineer, Texas A&M Transportation Institute, College Station, TX, March 2016-present. Involved in multiple transportation research projects. This position includes serving as Principal Investigator and Co-Principal Investigator, designing experiments, analyzing large databases, writing proposals and journal papers, and presenting results to various audiences.

Associate Research Scientist, Texas A&M Transportation Institute, College Station, TX, July 2013-March 2016. Involved in multiple transportation research projects. This position entailed analyzing large databases, performing statistical analyses, preparing reports with research results, writing proposals and journal papers, and presenting results to various audiences.

Post-Doctoral Research Associate, Texas A&M Transportation Institute, College Station, TX, October 2012-June 2013. Collecting field data, analyzed large databases and experimental data, writing proposals and journal papers.

Research Assistant and Teaching Assistant, Department of Civil and Construction Engineering Oregon State University, September 2007-July 2012. Data collection, statistical modelling, report and proposal writing for transportation research projects; presentation of results to state officials. Lead instructor for the introductory highway design class (CE-392).

Coordinator for Industrial Engineering, Facultad de Ingeniería y Arquitectura, Universidad Centroamericana "José Simeón Cañas", January-August 2007. Assisted the Engineering and Architecture School Head in matters concerned to the Industrial Engineering career: resource and strategic planning, industry contact coordination, and undergraduate counseling. Left position to pursue graduate studies in the United States.

Lecturer, Department of Processes and Systems Technology, Universidad Centroamericana JSC, July 2006-July 2007. Lectured a senior class on Discrete Simulation of Production Processes for Industrial Engineering two terms. Left position to pursue graduate studies in the United States.

Interim Project Manager, Bonal S.A., El Salvador, Central America, 2006. Directed operations for 3 months upon completion of a large scale traffic analysis project for San Salvador, Santa Ana and San Miguel, the three major cities in El Salvador. Supervised analysts, technicians, prepared reports and presentations to government officials. Left position due to finalization of the contract with the government of El Salvador.

Traffic Analysis Unit Coordinator, Bonal S.A., El Salvador, Central America, 2005-2006. Performed data collection and analysis, Developed simulation models for projects in El Salvador and Dominican Republic. Supervised junior analysts.

Junior Design Engineer, PROPAV, El Salvador Central America, 2004-2005. Team member for the setup and installation of a new facility for the production of Hot Mix Asphalt. Tasks included: plant layout design, site development coordination, aggregate mix optimization, operations costs tracking, and supervision of subcontractors.

Junior Production Engineer, HECASA de C.V., El Salvador, Central America, 2003-2004. Worked in several production plant projects: Design of low temperature efficient stoves production line, pilot manufacture of first 20 units; co-design of layout and implementation of a new semi-automatic electrostatic painting line; development and monitoring of production costs tracking tools; re-classification of inventory items by rotation, re-design and implementation of inventory ERP transaction and tracking procedures; programming and testing of CNC lathing center procedures, management of tool purchase and preventive maintenance for CNC machinery.

CONSULTING EXPERIENCE

October 2012. Provided technical assistance and consulting in various projects for Inter-Tribal Council of California, Inc. (ITCC). This consultation included representing ITCC, along with other ITCC staff, at a meeting of the Western Regional Partnership; field visits, GIS consultation and preliminary

assessment of projected development and transportation facilities for D-Q University; and determining the information requirements and database structure for ITCC's Homeland Security Program.

May 2007. Bovine Livestock Population and Milk Production Growth Estimation by Simulation. Study for A. Muyshondt, entrepreneur. Developed a deterministic simulation model for production and population profiles over time, based on typical livestock management parameters (e.g. male/female ratio, impregnation age of cows, milk production expectancy, life expectancy for a single animal, among others). The model simulated groups of animals of same age and same gender as the basic entities evolving through the sequencing of a discrete event simulation.

November 2006. Optimization of Detergent Packing Line Study for Unilever, El Salvador. Co-authored a study to evaluate the impact of introducing a new conveyor chain, re-organize the plant floor and potentially reduce the personnel required at the production line. In addition to traditional time and motion studies, this evaluation developed and validated a simulation model of the production line to assess the impacts of the proposed changes on the production throughput and labor workload.

FIELDS OF SPECIALIZATION

- Transportation Engineering
- Roadway safety
- Traffic Operations and Design
- Applied Statistics

TEACHING

Web-Based Courses

Developed a Web-Based Training (WBT) course titled Safety Data and Analysis Fundamentals Training. The course building blocks are 32 WBT modules and is structured differently for four target audience groups: safety analysts, data collectors/stewards, program managers, and senior managers/safety advocates. (Available through the National Highway Institute, course number FHWA-NHI-380122)

Workshops and Tutorials

A Workshop on Validation of Discrete Response Statistical Models. Conference in Statistics Practice. American Statistical Association. Portland, OR. February 2018.

Courses Taught at Oregon State University (Quarter System)

CE 392 Introduction to Highway Engineering (Lead Instructor, Spring 2011)

Average student evaluation on course as a whole:	4.4 / 6.0
Average student evaluation on instructor's contribution to the course:	4.9 / 6.0

Courses Taught at Universidad Centroamericana (Semester System)

Introductory Physics (Linear and Angular Mechanics) (2006)

Simulation (Discrete Event Simulation of Production Processes) (2006-2007)

AWARDS

- 2018 Outstanding Paper Award, Transportation Research Board Committee on Safety Data, Analysis and Evaluation ANB20 for paper "Exploring the Effects of Important Predictors of Ramp Speeding". Award shared with coauthors Bahar Dadashova and Karen Dixon.
- 2016 Patricia F. Waller Paper Award, Transportation Research Board Executive Committee for best paper in the area of safety and system users for paper "Evaluation of Signalized-Intersection Crash Screening Methods Based on Distance from Intersection". Award shared with coauthors Karen Dixon and Patricia Escobar.
- 2016 Outstanding Paper Award, Transportation Research Board Committee on Safety Data, Analysis and Evaluation ANB20 for paper "Evaluation of Intersection-Related Crash Screening Methods Based on Distance from Intersection". Award shared with coauthors Karen Dixon and Patricia Escobar.
- 2016 New Researcher Award, Texas A&M Transportation Institute/Trinity.
- 2015 D. Grant Mickle Award, Transportation Research Board Executive Committee for best paper in operations and maintenance for paper "Driver Yielding at Traffic Control Signals, Pedestrian Hybrid Beacons, and Rectangular Rapid Flashing Beacons in Texas". Award shared with coauthors Kay Fitzpatrick and Marcus Brewer.
- 2014 Outstanding Paper Award, TRB Committee on Pedestrians ANF10 for paper "Closed-Course Study of Driver Detection of Pedestrians beyond Flashing Beacons with a Sign Assembly". Award shared with coauthors Kay Fitzpatrick and James Robertson.

PROFESSIONAL ACTIVITIES

American Statistical Association (ASA), Member, 2017-2022

- Attended and presented at the Joint Statistical Meetings 2019 and 2020.
- Instructor for short-course on validation of discrete-response models. Conference on Statistical Practice of ASA. February 2018, Portland, OR.
- Transportation Statistics Interest Group — Member.

Transportation Research Board (TRB):

- Transportation Research Record Editorial Board. Handling Editor. 2023-present
- Standing Committee on Bicycle Transportation (ACH20), member 2024-present
- Standing Committee on Safety Performance and Analysis (ACS20), member 2022-present, friend of committee, 2011-2022
- Operational Effects of Geometrics Committee (AHB65), friend of committee, 2009-present
- Traffic Flow Theory & Characteristics (AHB45), friend of committee, 2010-present
- Highway Capacity and Quality of Service Committee(AHB40), friend of committee, 2011-present
- Low Volume Roads Committee (AFB30), friend of committee, 2012-present

Institute of Transportation Engineers, Member, 2008-Present

- Washington DC Section, member, 2023-present
- Brazos Valley ITE Section President, 2019
- Brazos Valley ITE Section Vicepresident, 2018
- Texas ITE Region board member, Brazos Valley ITE Section representative. 2017
- ITE Trip Generation Expert Reviewer, member of the panel responsible for the development of the 10th Edition of ITE's *Trip Generation Manual.* 2016-2017.
- President, ITE-OSU Student Chapter, Fall 2008-Spring 2009. Coordinated student activities and speaker meetings hosting transportation engineering companies

Project Management Institute, Member, 2016-Present

Chi Epsilon. The Civil Engineering Honors Society. Member, 2009-2012

PUBLICATIONS

Technical Journals

1. Avelar R., K. Dixon, S. Ashraf, D. Lord. "Assessing the Safety Implications of Raising Speed Limits in Texas Freeways". *Transportation Research Record, the Journal of the Transportation Research Board, 0(0)*. DOI: 10.1177/03611981241242354. April 2024.

2. Kutela B., C. Kadeha, R. Magehema, R. Avelar, and P. Alluri. "Leveraging Text Mining Approach to Explore Research Roadmap and Future Direction of Wrong-Way Driving Crash Studies". *Data and Information Management*. June 2023. DOI: 10.1016/j.dim.2023.100044.

3. Fitzpatrick K., A. Do, R. Avelar, M. Pratt, S. Das. "Improving Pedestrian Safety at Signalized Intersections: Impacts of Corner Radius." *ITE Journal*. Institute of Transportation Engineers. June 2022.

4. Pratt M. and R. Avelar. "Analysis of Roadway Grade Estimations From Global Positioning Systems and Barometer Measurements" *Transportation Research Record, the Journal of the Transportation Research Board, 0(0)*. July 2022. DOI: 10.1177/03611981221111154.

5. Kutela B., R. Avelar, P. Bansal. "Modeling Automated Vehicle Crashes with a Focus on Vehicle At-Fault, Collision Type, and Injury Outcome." *Journal of Transportation Engineering. Part A: Systems*. Vol 148 Issue 6. American Society of Civil Engineers. February 2022.

6. Kutela B., R. Avelar, S. Geedipally, A. Jhamb. "Prediction of Occurrence and Severity of Run-off-Roadway (ROR) Crashes on Two-lane Roadways using Bayesian Networks." *Transportation Research Record, the Journal of the Transportation Research Board*. 2022;2676. December 2021. Pp.371-384. DOI: 10.1177/03611981211051351.

7. Fitzpatrick K., M. Pratt, and R. Avelar. "Speeds of Right-Turning Vehicles at Signalized Intersections during Green or Yellow Phase". *Transportation Research Record, the Journal of the Transportation Research Board 2021:2675(10)*. May 2021, pp. 503-515. DOI 10.1177/03611981211011642

8. Avelar R., K. Dixon, B. Kutela, S. Klump, R. Storm, B. Wemple, M. Morgan. “A Simple Index to Assess the Calibration Quality of Safety Performance Functions based on multiple Goodness-of-fit Metrics.” *Transportation Research Record, the Journal of the Transportation Research Board*. April 2021. DOI 10.1177/03611981211008896.

9. Park E., K. Fitzpatrick, S. Das, and R. Avelar. “Exploration of the relationship among roadway characteristics, operating speeds, and crashes for city streets using path analysis” *Accident Analysis & Prevention Volume 150*. February 2021. DOI 10.1016/j.aap.2020.105896.

10. Li M., S. Geedipally, K. Fitzpatrick, and R. Avelar. “Estimating Pedestrian Volumes for Signalized and Stop-Controlled Intersections”. *Transportation Research Record, the Journal of the Transportation Research Board 2674(9)*. July 2020, pp. 799-808. DOI 10.1177/0361198120932161.

11. Finley M., R. Avelar, and G. Hawkins. “Traffic Control Devices for Deterring Wrong-way Movements on Divided Highways” . *Transportation Research Record, the Journal of the Transportation Research Board 2673(5)*. April 2019, pp. 670-681. DOI 10.1177/0361198119841853.

12. Stapleton S., T. Gates, R. Avelar, S. Geedipally, and R. Saedi. “Safety Performance Functions for Low Volume Rural Stop-Controlled Intersections” . *Transportation Research Record, the Journal of the Transportation Research Board*. April 2019, pp. 660-669. DOI 10.1177/0361198119840348.

13. Geedipally S., T. Gates, S. Stapleton, A. Ingle, and R. Avelar. “Examining the Safety Performance and Injury Severity Characteristics of Rural County Roadways” *Transportation Research Record, the Journal of the Transportation Research Board*. May 2019, pp. 405-415. DOI 10.1177/0361198119850127.

14. Das S., A. Dutta, R. Avelar, K. Dixon, X. Sun, and M. Jalayer. “Supervised association rules mining on pedestrian crashes in urban areas: identifying patterns for appropriate countermeasures”. *International Journal of Urban Sciences*. Jan 2019. 23:1, pp. 30-48, DOI 10.1080/12265934.2018.1431146.

15. Dadashova B., K. Dixon, and R. Avelar. “Exploring the Effects of Important Predictors of Ramp Speed Choice”. *Transportation Research Record, the Journal of the Transportation Research Board*. September 2018, pp. 277-289. DOI 10.1177/0361198118793497.

16. Avelar R., K. Dixon, and S. Ashraf. “A Comparative Analysis on Performance of Severe Crash Prediction Methods”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2672, 30. August 2018, pp. 109-119. DOI 10.1177/0361198118794052.

17. Avelar R., S. Petersen, T. Lindheimer, S. Ashraf, and E. Minge. “Methods for Estimating Axle Factors and Axle Classes from Vehicle Length Data”. *Transportation Research Record, the Journal*

of the Transportation Research Board. September 2018. pp. 1-12, DOI 10.1177/0361198118794048.

18. Dixon K., R. Avelar, Dastgiri M., and B. Dadashova. "Safety Evaluation of Turnarounds at Diamond Interchanges: Assessing the Texas U-Turn". *Transportation Research Record*. September 2018, pp. 1-11. DOI 10.1177/0361198118797186.

19. Avelar R., and K. Fitzpatrick. "Safety Evaluation of Cross-Sectional Elements of Freeway Managed Lanes". *Transportation Research Record.* April 2018. pp. 1-9. DOI 10.1177/0361198118755703.

20. Das S., R. Avelar, K. Dixon, X. Sun. "Investigation on the wrong way driving crash patterns using multiple correspondence analysis." *Accident Analysis and Prevention*. Vol. 111. pp. 43-55. February 2018. DOI 10.1016/j.aap.2017.11.016

21. Lindheimer T., K. Fitzpatrick, R. Avelar, and J. Miles. "Effect of Geometric Factors on Lateral Position of Vehicles in Freeway Buffer-Separated Managed Lanes". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2616 / 2017. pp. 10-18. ISSN 0361-1981. DOI /10.3141/2616-02.

22. Avelar R., K. Fitzpatrick, and M. Brewer. "A Comparison of Analytical Methods on Staged Pedestrian Crossings at Crosswalks with a Rectangular Rapid Flashing Beacon". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2661 / 2017, pp. 1-11. ISSN 0361-1981. DOI 10.3141/2661-01.

23. Fitzpatrick K., M. Brewer, R. Avelar, and T. Lindheimer. "Will you Stop for Me? An Exploration of Characteristics Associated with a Driver's Decision to Stop for a Pedestrian in a Crosswalk with Rectangular Rapid-Flashing Beacon". *ITE Journal*. Volume 87; Issue Number 3. Institute of Transportation Engineers, March 2017.

24. Fitzpatrick K., R. Avelar, and T. Lindheimer. "Operating Speed on a Buffer-Separated Managed Lane". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2616 / 2017. pp. 1-9. ISSN 0361-1981. DOI 10.3141/2616-01.

25. Dixon K., R. Avelar, and Y. Zhou. "Effective Measures to Restrict Vehicle Turning Maneuvers". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2588 / 2016. pp. 89-97. ISSN 0361-1981. DOI 10.3141/2588-10.

26. Dixon K., K. Fitzpatrick, and R. Avelar. "Operational and Safety Tradeoffs – Reducing Freeway Lane and Shoulder Width to Permit an Additional Lane". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2588 / 2016. pp. 89-97. ISSN 0361-1981. DOI 10.3141/2588-10.

27. Gillette G., K. Fitzpatrick, S. Chrysler, and R. Avelar. "The Effects of Distractions on a Pedestrian's Waiting Behavior at Traffic Signals: An Observational Study" *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2586 / 2016. pp. 111-119. ISSN 0361-1981. DOI 10.3141/2586-13.

28. Fitzpatrick K., K. Dixon, and R. Avelar. “Evaluating Operational Implications of Reduced Lane and Shoulder Widths on Freeways”. *Journal of Transportation Engineering*. American Society of Civil Engineers. June 2016. DOI 10.1061/(ASCE)TE.1943-5436.0000884.

29. Avelar R., K. Fitzpatrick, K. Dixon, and T. Lindheimer. “The Influence of General Purpose Lane Traffic on Managed Lane Speeds: An Operational Study in Houston, Texas”. *Transportation Research Procedia. Volume 15/2016.* pp 548-560. DOI 10.1016/j.trpro.2016.06.046

30. Fitzpatrick K., R. Avelar, T. Lindheimer, and M. Brewer. “Comparison of Above Sign and Below Sign Placement for Rapid-Flashing Beacons”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2562 / 2016. pp. 45-52. ISSN 0361-1981. DOI 10.3141/2562-06.

31. Early M., K. Dixon, R. Avelar, and Y. Zhou. “Operational Performance at Two-way Stop-Controlled Intersections”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2562 / 2016. pp. 1-8. ISSN 0361-1981. DOI 10.3141/2562-01.

32. Brewer M., K. Fitzpatrick, and R. Avelar. “Rectangular Rapid Flashing Beacons and Pedestrian Hybrid Beacons: Pedestrian and Driver Behavior Before and After Installation”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2519 / 2015. pp. 1-9. ISSN 0361-1981. DOI: 10.3141/2519-01.

33. Dixon K., R. Avelar. “Validation Technique Applied to Oregon Safety Performance Function Arterial Segment Models”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2515 / 2015. pp. 115-123. ISSN 0361-1981.

34. Avelar R., K. Dixon, and P. Escobar. “Evaluation of Intersection-Related Crash Screening Methods Based on Distance from Intersection”. Patricia F. Waller Award: Outstanding Paper in Safety and System Users. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2514 / 2015. pp. 177-186. ISSN 0361-1981. DOI 10.3141/2514-19.

35. Avelar R., K. Fitzpatrick, and J. Robertson. “Investigating Maximum Intensities for Yellow Rapid-Flashing Beacons at Night”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2485 / 2015. pp. 33-41. ISSN 0361-1981. DOI 10.3141/2485-05.

36. Fitzpatrick K., I. Potts, M. Brewer, and R. Avelar. “Comparison of Rectangular and Circular Rapid-Flashing Beacons in an Open-Road Setting”. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2492 / 2015. pp. 69-77. ISSN 0361-1981. DOI 10.3141/2492-08.

37. Avelar R., K. Dixon, and G. Schertz. “Identifying Low Volume Road Segments with High Severe Crash Frequencies”. *Transportation Research Record, Journal of the Transportation Research Board. Low-Volume Roads 2015*. *Volume 1*. No. 2472/2015. pp. 162-171. ISSN 0361-1981.

38. Fitzpatrick K., J. Robertson, and R. Avelar. “Closed-Course Study of Driver Detection of Pedestrians beyond Flashing Beacons within a Sign Assembly”. *Transportation Research Record,*

the Journal of the Transportation Research Board. Pedestrians 2014. No. 2464 / 2015. pp. 144-153. ISSN 0361-1981.

39. Avelar R. and P. Carlson. "Link between Pavement Marking Retroreflectivity and Night Crashes on Michigan Two-Lane Highways". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2404 / 2014. pp. 59-67. ISSN 0361-1981.

40. Fitzpatrick K., M. Brewer, and R. Avelar. "Driver Yielding at Traffic Control Signals, Pedestrian Hybrid Beacons, and Rectangular Rapid Flashing Beacons in Texas". Grant Mickle Award: Outstanding Paper in Operations and Maintenance. *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2463 / 2014. pp. 46-54. ISSN 0361-1981.

41. Avelar R., K. Dixon, L. Brown, M. Mecham, and I. van Schalkwyk. "Influence of Land Use and Driveway Placement on Safety Performance of Arterial Highways". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2398 / 2013. pp. 101-109. ISSN 0361-1981.

42. Avelar R. and K. Dixon. "How Far Are Current Advisory Speeds from being Optimal? An Analysis Based on Safety Performance". *Transportation Research Record, the Journal of the Transportation Research Board*. No. 2080 / 2012. pp. 183-191. ISSN 0361-1981.

Conferences

1. Avelar R., and J. Cicchino. "The Factors Influencing Urban Road User Behaviors and Motivations Around Pedestrian Hybrid Beacons and Rectangular Rapid Flashing Beacons in North Carolina". Presented at the TRB 104th Annual Meeting, January 2025, Washington DC.

2. Avelar R., P. Carlson, N. Ocel., B. Kutela. Estimating the Potential Impact of Connected and Automated Vehicles on the Safety Effectiveness of Proven Safety Countermeasures. Presented at Intelligent Transportation Systems America Conference and Expo, April 2024, Phoenix, AZ.

3. Avelar R., K. Fitzpatrick, M. Pratt. "Developing a Crash Modification Factor for Intersection Corner Radius". Presented at the TRB 103th Annual Meeting, January 2024, Washington DC.

4. Avelar R., K. Dixon, S. Ashraf, D. Lord. "Assessing the Safety of Raising Speed Limits using Interrupted Time Series". Presented at the TRB 102th Annual Meeting, January 2023, Washington DC.

5. Avelar R., S. Geedipally, G. Saini. "Assessing the Safety of Raising Speed Limits using Interrupted Time Series". Presented at the TRB 102th Annual Meeting, January 2023, Washington DC.

6. Fitzpatrick K., R. Avelar, S. Das, M. Pratt, M. Le, S. Venglar. "Quantifying How Much Key Factors Influence Freeway Operational Speeds". Presented at the TRB 102th Annual Meeting, January 2023, Washington DC.

7. Avelar R., S. Geedipally, S. Ashraf. “Highway Safety Manual Calibration Sample Size Based on Calibration Factor Statistical Properties”. Presented at the TRB 101th Annual Meeting, January 2022, Washington DC.

8. Kutela B., C. Kadeha, R. Magehema, R. Avelar, and P. Alluri. “50 Years of Research on Wrong-Way Driving Crashes: Roadmap Review and Future Direction”. Presented at the TRB 101th Annual Meeting, January 2022, Washington DC.

9. Avelar R., K. Dixon, B. Kutela, S. Klump, R. Storm, B. Wemple, M. Morgan. “Developing an Index-based Methodology to Assess the Quality of SPF Calibration. A Multivariate Approach.” Presented at the TRB 100th Annual Meeting, January 2021, Washington DC.

10. Pratt M. and R. Avelar. “A Comparison of Roadway Grade Estimations from GPS and Barometer Measurements.” Presented at the TRB 100th Annual Meeting, January 2021, Washington DC.

11. Kutela B., R. Avelar, S. Geedipally, A. Jhamb. “Prediction of Occurrence and Severity of Run-off-Roadway (ROR) Crashes on Two-lane Roadways using Bayesian Networks.” Presented at the TRB 100th Annual Meeting, January 2021, Washington DC.

12. Fitzpatrick, K., M. Pratt, and R. Avelar. “Speeds of Right-turning Vehicles at Signalized Intersections during Green or Yellow Phase.” Presented at the TRB 100th Annual Meeting, January 2021, Washington DC.

13. Avelar R. “Challenges and Opportunities in Safety Effectiveness Studies. The case of Roadside Treatments Evaluation” Presented at the Joint Statistical Meetings 2020 from the American Statistical Association. August 2020, Philadelphia, PA.

14. Avelar R., S. Ashraf, and R. Lewis. “Validating the Estimation of Vehicle Axle-Class from Vehicle Length Data and Quantifying the Effect of Calibration to Local Data” Presented at TRB 99th Annual Meeting, January 2020, Washington DC.

15. Geedipally S., M. Li, K. Fitzpatrick, and R. Avelar. “Identifying High Risk Locations to address Pedestrian Safety Issues” Presented at TRB 99th Annual Meeting, January 2020, Washington DC.

16. Li M., S. Geedipally, K. Fitzpatrick, and R. Avelar. “Estimating Pedestrian Volumes for Signalized and Stop-Controlled Intersections” Presented at TRB 99th Annual Meeting, January 2020, Washington DC.

17. Avelar R., B. Dadashova, and K. Dixon “Modeling Differences in Car-Following Behavior Between Driver Age Groups.” Presented at the Joint Statistical Meetings 2019 from the American Statistical Association. July 2019, Denver, CO.

18. Finley M., R. Avelar, and G. Hawkins. “Traffic Control Devices for Deterring Wrong-way Movements on Divided Highways” Presented at TRB 98th Annual Meeting, January 2019, Washington DC.

19. Geedipally S., T. Gates, S. Stapleton, A. Ingle, and R. Avelar. “Examining the Safety Performance and Injury Severity Characteristics of Rural County Roadways” Presented at TRB 98th Annual Meeting, January 2019, Washington DC.

20. Stapleton S., T. Gates, R. Avelar, S. Geedipally, and R. Saedi. “Safety Performance Functions for Low Volume Rural Stop-Controlled Intersections” Presented at TRB 98th Annual Meeting, January 2019, Washington DC.

21. Das, S., L. Minjares-Kyle, R. Avelar, and B. Bommanayakanahalli. “Improper Passing related Crashes: Identifying Patterns using Negative Binomial Precise Rules.” The 7th International Symposium on Naturalistic Driving Research (NDRS 2018), August 2018, Blacksburg, VA.

22. Lindheimer T., R. Avelar, M. Dastgiri, and M. Brewer. “Exploratory Analysis of Deceleration Rates in Urban Corridors using SHRP2 Data”. Presented at TRB 97th Annual Meeting, January 2018, Washington DC.

23. Avelar R., K. Dixon, and S. Ashraf. “A Comparative Analysis on Performance of Severe Crash Prediction Methods”. Presented at TRB 97th Annual Meeting, January 2018, Washington DC.

24. Higgins L., R. Avelar, and S. Chrysler. “Effects of Distraction Type, Driver Age, and Roadway Environment on Reaction Times – An Analysis Using SHRP-2 NDS Data.” 2017 Driving Assessment, Training and Vehicle Design. pp 94-100. June 26-29, 2017. Manchester Village, VT. Iowa City, IA: Public Policy Center, University of Iowa, 2017.

25. Avelar R., S. Hammond, K. Fitzpatrick. “An Investigation on Monthly and Hourly Trends in Crash Risk for Older Drivers at Freeways and Highways using SHRP2 Data.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

26. Avelar R., T. Lindheimer, K. Dixon, J. Miles, S. Das. “A Safety and Seasonal Evaluation of Tire Debris on Highways and Freeways.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

27. Avelar R., M. Pratt, J. Miles, T. Lindheimer. “Estimating Statewide Tire Debris Generation Rates in Texas Highways.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

28. Gillette G., K. Fitzpatrick, and R. Avelar. “The Impact of Precipitation on Freeway Free-Flow Conditions: Exploratory Analysis of Time Sensitivity.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

29. Das S., L. Minjares-Kyle, R. Avelar, K. Dixon, and B. Bommanayakanahalli. “Improper Passing Related Crashes on Rural Roadways: Using Association Rules Negative Binomial Miner.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

30. Das S., R. Avelar, K. Dixon, X. Sun. “Pedestrian Crash Analysis Using Association Rules Mining.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

31. Dadashova B., B. Arenas-Ramirez, C. Gonzalez-Fernandez, R. Avelar-Moran, F. Aparicio-Izquierdo. “Evaluation of Potential Impact of Decreasing CMV Volume on Road Safety in Spain.” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

32. Raker J., M. Hirsch, K. Dixon, and R. Avelar. “Pedestrian and Bicyclist Influence at Stop-Controlled Intersections” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

33. Das S., K. Dixon, R. Avelar, and K. Fitzpatrick. “Using Machine Learning Techniques to Estimate Non-motorized Trips for Rural Roadways” Presented at TRB 96th Annual Meeting, January 2017, Washington DC.

34. Avelar R., and K. Dixon. “A Methodology to Construct Confidence Intervals for the 85th Percentile from a Normally Distributed Speed Sample”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

35. Avelar R., K. Dixon., and D. McDaniel. “An Evaluation of the Independence Assumption when Combining Crash Modification Factors”. Paper 16-2712 Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

36. Fitzpatrick K., R. Avelar, T. Lindheimer, and M. Brewer. “Comparison of Above Sign and Below Sign Placement for Rapid-Flashing Beacons”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

37. K. Dixon, R. Avelar, and C. Monsere. “Oregon Signalized Intersection Safety Performance Functions and the Effect of Speed”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

38. Gillette G., K. Fitzpatrick, S. Chrysler, and R. Avelar. “The Effects of Distractions on Pedestrian’s Waiting Behavior at Traffic Signals: An Observational Study”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

39. Early M., K. Dixon, R. Avelar, and Y. Zhou. “Operational Performance at Two-way Stop-Controlled Intersections”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

40. Dixon K., K. Fitzpatrick, and R. Avelar. “Operational and Safety Tradeoffs – Reducing Freeway Lane and Shoulder Width to Permit an Additional Lane”. Presented at TRB 95th Annual Meeting, January 2016, Washington DC.

41. Avelar R., K. Dixon, and G. Schertz. “Identifying Low Volume Road Segments with High Severe Crash Frequencies”. Presented at the 11th International Conference on Low-Volume Roads of the Transportation Research Board. July 2015, Pittsburg, PA.

42. Avelar R., K. Dixon, and P. Escobar. “Evaluation of Intersection-Related Crash Screening Methods Based on Distance from Intersection”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

43. Avelar R., K. Fitzpatrick, and J. Robertson. “Investigating Maximum Intensities for Yellow Rapid-Flashing Beacons at Night”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

44. Fitzpatrick K., R. Avelar, and J. Robertson. “Survey on Message Communicated by Rapid-Flashing Yellow LEDs Used with Pedestrian Crossing Sign”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

45. Dixon K. and R. Avelar. “Validation Technique Applied to Oregon Safety Performance Function Arterial Segment Models”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

46. Fitzpatrick K., R. Avelar, and J. Robertson. “Impacts of Rapid-Flashing Yellow LEDs on Detecting Pedestrians in a Closed-Course Setting”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

47. Fitzpatrick K., I. Potts, M. Brewer, and R. Avelar. “Comparing Rectangular and Circular Rapid-Flashing Beacons in an Open-Road Setting”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

48. Fitzpatrick K., R. Avelar, J. Robertson, and J. Miles. “Comparison of Driver Yielding for Three Rapid-Flashing Patterns Used with Pedestrian Crossing Signs”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

49. Carlson P., R. Avelar, E. Park, and D. Kang. “Nighttime Safety and Pavement Marking Retroreflectivity on Two-Lane Highways: Revisited with North Carolina Data”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

50. Fitzpatrick K., M. Brewer, and R. Avelar. “Comparing Rectangular and Circular Rapid-Flashing Beacons in an Open-Road Setting”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

51. Brewer M., K. Fitzpatrick, and R. Avelar. “Pedestrian and Driver Behavior Before and After Installation of Rectangular Rapid Flashing Beacons or Pedestrian Hybrid Beacons”. Presented at TRB 94th Annual Meeting, January 2015, Washington DC.

52. Avelar R. and P. Carlson. “Characterizing the Combined Association of Edge Line and Center Line Retroreflectivity to Nighttime Crashes at Rural Two-Lane Highways”. Presented at TRB 93rd Annual Meeting, January 2014, Washington DC.

53. Fitzpatrick K., J. Robertson, and R. Avelar. “Impact of Rapid Flashing Beacons on Legibility Distance”. Presented at TRB 93rd Annual Meeting, January 2014, Washington DC.

54. Fitzpatrick K., J. Robertson, and R. Avelar. “Closed-Course Study of Driver Detection of Pedestrians”. Presented at TRB 93rd Annual Meeting, January 2014, Washington DC.

55. Fitzpatrick K., M. Brewer, R. Avelar. “Examination of the Relationship between Roadway Characteristics and Driver Yielding to Pedestrians”. Presented at TRB 93rd Annual Meeting, January 2014, Washington DC.

56. Avelar R., K. Dixon, L. Brown, M. Mecham, and I. van Schalkwyk. “The Influence of Land Use and Driveway Placement on the Safety Performance of Arterial Highways”. Presented at the TRB 92nd Annual Meeting, January 2013, Washington D.C.

57. Avelar R. and K. Dixon. “How Far Are Current Advisory Speeds from being Optimal? An Analysis Based on Safety Performance”. Presented at Lectern Session 432 of the TRB 91st Annual Meeting, January 2012, Washington D.C.

58. Avelar R. and K. Dixon. “Modelling the Safety Effect of Advisory Speed Signs: A Bivariate Multiplicative Factor on Number of Crashes based on the Speed Differential and the Side Friction Demand”. 3rd International Conference on Road safety and Simulation Conference Proceedings, September 2011, Indianapolis, IN.

Reports

1. Bligh R., B. Kutela, S. Cakalli, N. Sheikh, and R. Avelar. *NCHRP Research Report 1097 Development of Clear Recovery Area Guidelines.* National Academies of Sciences, Engineering, and Medicine. February 2024. Washington, DC: The National Academies Press. https://doi.org/10.17226/27593.

2. Avelar R., M. Brewer, and B. Kutela. *Compendium of Wrong-Way Driving Treatments and Countermeasures.* Technical Report. Federal Highway Administration. https://doi.org/10.21949/1521979. February 2024.

3. Avelar R., B. Kutela, and M. Finley. *Development of Crash Modification Factors for Wrong-Way Driving Countermeasures.* Technical Report. Federal Highway Administration. FHWA-HRT-22-115. November 2023.

4. Avelar R., B. Kutela, and M. Finley. *Development of Crash Modification Factors for Wrong-Way Driving Countermeasures.* TechBrief. Federal Highway Administration. FHWA-HRT-22-112. September 2023.

5. Potts I., D. Harwood, D. Cook, R. Avelar, and L. Busenbark. *NCHRP Research Report 1061. Highway and Street Design Vehicles: An Update.* National Academies of Sciences, Engineering, and Medicine. Washington, DC: The National Academies Press. https://doi.org/10.17226/27236. September 2023.

6. Pratt M., S. Geedipally, M. Le, L. Wu, R. Avelar, S. Das, and D. Lord. *Enhancing Freeway Safety Prediction Models.* Technical Report. Texas Department of Transportation. FHWA/TX-22/0-7067-R1. September 2023.

7. Avelar R., B. Kutela, X. Li. *Development of Crash Modification Factors for Bicycle Treatments at Intersections.* Technical Report. Federal Highway Administration. FHWA-HRT-23-020. August 2023.

8. Avelar R., B. Kutela, X. Li. *Development of Crash Modification Factors for Bicycle Treatments at Intersections.* TechBrief. Federal Highway Administration. FHWA-HRT-23-031. June 2023.

9. Avelar R., E. S. Park, and B. Kutela. *Development of Crash Modification Factors for Mini-roundabouts.* Technical Report. Federal Highway Administration. FHWA-HRT-23-019. April 2023.

10. Avelar R., E. S. Park, and B. Kutela. *Development of Crash Modification Factors for Mini-roundabouts.* TechBrief. Federal Highway Administration. FHWA-HRT-22-109. February 2023.

11. Dixon K., Avelar R., and M. Mousavi. *Development of Crash Modification Factors for Separated Bicycle Lane.* Technical Report. Federal Highway Administration. FHWA-HRT-23-078. September 2023.

12. Dixon K., Avelar R., and M. Mousavi. *Development of Crash Modification Factors for Separated Bicycle Lane.* TechBrief. Federal Highway Administration. FHWA-HRT-23-025. February 2023.

13. Dixon K., K. Fitzpatrick, D. Lord, C. Sylvestri, R. Avelar, B. Dadashova, F. Mannering, N. Alnawmasi, J. Atkinson, J. Jones, A. Cheema, and K. Matthews. *Safety Effects of Raising Speed Limits to 75 mph and Higher. Web-Only Document 328*. National Academies of Sciences, Engineering, and Medicine. October 2022. Washington, DC: The National Academies Press. https://doi.org/10.17226/26770.

14. Dixon K., K. Fitzpatrick, D. Lord, C. Sylvestri, R. Avelar, B. Dadashova, F. Mannering, N. Alnawmasi, J. Atkinson, J. Jones, A. Cheema, and K. Matthews. *NCHRP Research Report 1006. Guide to Understanding Effects of Raising Speed Limits*. NCHRP 17-79. National Cooperative Highway Research Program. September 2022.

15. Geedipally S., K. Dixon, L. Wu, M. Pratt, R. Avelar, S. Das, I. Tsapakis, D. Lord, G. Saini. *Calibrating the Highway Safety Manual Predictive Methods for Texas Highways: Technical Report.* Texas A&M Transportation Institute, Texas Department of Transportation, and Federal Highway Administration. College Station, TX, 2022.

16. Fitzpatrick K., R. Avelar, M. Pratt, S. Das, and D. Lord. *Crash Modification Factor for Corner Radius, Right-turn Speed, and Prediction of Pedestrian Crashes at Signalized Intersections.* Technical Report. Federal Highway Administration. FHWA-HRT-21-105. January 2022.

17. Avelar R., E. Park, S. Ashraf, K. Dixon, M. Li, and B. Dadashova. *Development of Crash Modification Factors for Variable Speed Limits.* Technical Report. Federal Highway Administration. FHWA-HRT-21-053. May 2021.

18. Avelar R., K. Dixon, S. Ashraf, A. Jhamb, and B. Dadashova. *Development of Crash Modification Factors for Bicycle Lane Additions While Reducing Lane and Shoulder Widths.* Technical Report. Federal Highway Administration. FHWA-HRT-21-013. July 2021.

19. Avelar R., E. Park, S. Ashraf, K. Dixon, M. Li, and B. Dadashova. *Development of Crash Modification Factors for Variable Speed Limits.* Technical Report. Federal Highway Administration. FHWA-HRT-21-053. May 2021.

20. Avelar R., E. Park, K. Dixon, X. Li, M. Li, and B. Dadashova. *Development of Crash Modification Factors for Adaptive Signal Control Technologies.* Technical Report. Federal Highway Administration. FHWA-HRT-20-072. February 2021.

21. Avelar R., K. Dixon, S. Ashraf, and A. Jhamb. *Development of Crash Modification Factors for Roadside Fixed Objects (Guardrails, Poles, and Side Slopes).* Technical Report. Federal Highway Administration. FHWA-HRT-21-075. August 2021.

22. Walker D., M. Morgan, R. Storm, B. Wemple, S. Klump, K. Rose, Z. Einck, K. Dixon, R. Avelar Moran, and B. Kutela. *Safety Performance Function Calibration for Mississippi*. Technical Report. Mississippi Department of Transportation. October 2020.

23. Pratt M., S. Geedipally, R. Avelar, and M. Le. *Horizontal Curve Evaluation Handbook.* Technical Report. Texas Department of Transportation. FHWA/TX-18/0-6960-P1. May 2020.

24. Avelar R., S. Geedipally, S. Das, L. Wu, B. Kutella, and D. Lord. *Evaluation of Roadside Treatments to Mitigate Roadway Departure Crashes.* Technical Report. Texas Department of Transportation. FHWA/TX-20/0-6991-R1. April 2020.

25. Finley M., A. Pike, E.S. Park, L. Wu, L. Theiss, M. Brewer, K. Fitzpatrick, R. Avelar , and T. Barrette. *Traffic Control Device Analysis, Testing, and Evaluation Program: FY 2018 Activities.* Final Report. Texas Department of Transportation. FHWA/TX-18/0-6969-R1. June 2019.

26. Pratt M., S. Geedipally, R. Avelar, M. Le, and D. Lord. *Developing Enhanced Curve Advisory Speed and Curve Safety Assessment Guidelines.* Technical Report. Texas Department of Transportation. FHWA/TX-19/0-6960-R1. January 2019.

27. Avelar R., D. Lord, and S. Ashraf. *Investigating the Development of CMFs from Probability Analyses. Final Report*. Advancing Transportation Leadership And Safety (ATLAS) Center. August 2018.

28. Avelar R., B. Dadashova, L. Higgins, and G. Gillette. *Using SHRP2-NDS Data to Investigate Freeway Operations, Human Factors, and Safety. Final Report*. Advancing Transportation Leadership And Safety (ATLAS) Center. ATLAS-2018-23. July 2018.

29. Finley M., R. Avelar, S. Venglar, G. Hawkins, and H. Al-Deek. *NCHRP Research Report 881. Traffic Control Devices and Measures for Deterring Wrong-Way Movements*. NCHRP 03-117. National Cooperative Highway Research Program. August 2018.

30. Fitzpatrick K., R. Avelar, and S. Turner. *Guidebook on Identification of High Pedestrian Crash Locations.* Federal Highway Administration. FHWA-HRT-17-106. April 2018.

31. Gates T., P. Savolainen, R. Avelar, S. Geedipally, D. Lord, A. Ingle, and S. Stapleton. *Safety Performance Functions for Rural Road Segments and Rural Intersections in Michigan.* Final Report. Michigan Department of Transportation. SPR-1645. March 2018.

32. Fitzpatrick K., R. Avelar, and S. Turner. *Identification of High Pedestrian Crash Locations.* Federal Highway Administration. FHWA-HRT-17-107. March 2018.

33. Finley M., S. Chrysler, P. Carlson, A. Pike, E.S. Park, M. Pratt, R. Avelar, S. Sunkari, S. Venglar, J. Kaufman, S. Cooner, and J. Hudson. *Traffic Control Device Evaluation Program: FY 2017* Final Report. Texas Department of Transportation. FHWA/TX-18/9/-1001-14-4. March 2018.

34. Petersen S., E. Minge, R. Avelar, and S. Ashraf. *Viability of Vehicle Length in Estimating Vehicle Classification and Axle Factors* Final Report. Transportation Pooled Fund Study. TPF-5(340). October 2017.

35. Chrysler S., P. Carlson, A. Pike, E.S. Park, M. Pratt, R. Avelar Moran, S. Sunkari, and M. Finley. *Traffic Control Device Evaluation Program: FY17.* Technical Report. Texas Department of Transportation. FHWA/TX-17/9-1001-14-4. September 2017.

36. Tydlacka J., T. Zhou, K. Dixon, R. Avelar, L. Ding, S. Venglar, N. Chaudhary, and M. Brewer. *Design and Operation of U-Turns at Diamond Interchanges in Texas* Technical Report. Final Report. Texas Department of Transportation. FHWA/TX-17/0-6894-1. June 2017.

37. Avelar R., M. Pratt, J. Miles, T. Lindheimer, N. Trout, and J. Crawford. *Develop Metrics of Tire Debris on Texas Highways* Technical Report. Final Report. Texas Department of Transportation. FHWA/TX-16/0-6860-1. June 2017.

38. Fitzpatrick K., R. Avelar. *Safety Implications of Managed Lane Cross Sectional Elements.* FHWA-HOP-16-076. Washington, D.C. Washington, DC. 2016.

39. Fitzpatrick, K., M. Brewer, T. Lindheimer, S. Chrysler, R. Avelar, N. Wood, D. Ungemah, C. Swenson, and Fuhs C. *Research Supporting the Development of Guidelines for Implementing Managed Lanes. Web-Only Document 224*. NCHRP 15-49. National Cooperative Highway Research Program. August 2016.

40. Torbic D., L. Lucas, D. Harwood, M. Brewer, E. Park, R. Avelar, M. Pratt, A. Abu-Odeh, E. Depwe, and K. Rau. *NCHRP Web Only Document 227: Design of Interchange Loop Ramps and Pavement/Shoulder Cross-Slope Breaks.* National Cooperative Highway Research Program; Transportation Research Board; National Academies of Sciences, Engineering and Medicine. ISBN 978-0-309-45554-1. DOI 10.17226/24683.

41. Dixon, K., R. Avelar, Y Zhou, Y. Dai, and S. Geedipally. *Combining Work Codes*. Texas Department of Transportation. Final Report. August 2015.

42. Fitzpatrick, K., R. Avelar, I. Potts, M. Brewer, J. Robertson, C. Fees, J. Hutton, L. Lucas, and K. Bauer. *Investigating Improvements to Pedestrian Crossings With an Emphasis on the*

Rectangular Rapid-Flashing Beacon. Federal Highway Administration. FHWA-HRT-15-043. June 2015.

43. Dixon K., K. Fitzpatrick, R. Avelar, M. Perez, S. Ranft, R. Stevens, S. Venglar, and T. Voight. *Reducing Lane and Shoulder Width to Permit an Additional Lane on a Freeway. Technical Report.* Final Report. Texas Department of Transportation. FHWA/TX-15/0-6811-1. March 2015.

44. Dixon K., C. Monsere, R. Avelar, J. Barnett, P. Escobar, S. Kothuri, and Y. Wang. *Improved Safety Performance Functions for Signalized Intersections.* Final Report. Oregon Department of Transportation. August 2015.

45. Dixon K., Y. Dai, R. Avelar, Y. Zhou, and S. Narula. *Effective Measures to Restrict Vehicle Turning Movements*. Final Report. Oregon Department of Transportation. December 2014.

46. Dixon K., R. Avelar. *Validation of Models for Quantifying Safety Performance of Driveways on State Highways.* Final Report. Oregon Department of Transportation. June 2014.

47. Fitzpatrick, K., V. Iragavarapu, M. A. Brewer, D. Lord, J. Hudson, R. Avelar, and J. Robertson. *Characteristics of Texas Pedestrian Crashes and Evaluation of Driver Yielding at Pedestrian Treatments*. Final report. FHWA/TX-13/0-6702-1. May 2014.

48. Dixon K., R. Avelar, L. Brown, I. van Schalkwyk. *Quantifying Safety Performance of Driveways on State Highways*. Oregon Department of Transportation. August 2012.

49. Dixon K. and R. Avelar. *Safety Evaluation of Curve Warning Advisory Speed Signs.* Oregon Department of Transportation. May 2011.

50. Dixon K. and R. Avelar. *Barriers for Traffic Incident Management in Oregon. Interim Report.* Oregon Department of Transportation. August 2008.

Other Publications

Avelar R. “Entendiendo las causas de la congestión vehicular en San Salvador” (“Understanding the causes of vehicle congestion in San Salvador”, publication in Spanish). *Revista de Arquitectura y Urbanismo la Casa de Todos*. Thirteenth Edition. ISSN: 2221-4992. Depto. de Organización del Espacio, UCA, San Salvador, El Salvador, Central America. August 2014. Also available at: http://oregonstate.academia.edu/RaulAvelar

Avelar R. “Un Sistema Digital de Monitoreo y Mejoramiento de la Seguridad Vial en El Salvador” (“A Digital System to Monitoring and Improving Roadway safety in El Salvador”, publication in Spanish). Empresa. Revista del Centro de Productividad y Competitividad. Vol. 5 enero-junio 2013. ISSN: 1998-6336X. ISEADE, San Salvador, El Salvador, Central America. July 2013.

Avelar, R. E. and J. R. Avelar. “A 70 Años de la Inauguración del Monumento al Salvador del Mundo” (“On the 70th Anniversary of El Salvador del Mundo Monument Inauguration”, publication in Spanish). *Revista de Arquitectura y Urbanismo la Casa de Todos*. Tenth Edition. ISSN: 2221-4992. Depto. de Organización del Espacio, UCA, San Salvador, El Salvador, Central America. January 2013.

Avelar R. “Predicción del Desempeño Académico: Número Esperado de Materias Reprobadas como Indicador de Rendimiento” (“Academic Performance Prediction: Expected Number of Failed Classes as an Indicator of Future Performance”, publication in Spanish). *Realidad y Reflexión*. No.34, 2a. Época. pp. 29-46. July 2012 ISSN: 1962-6510.

Avelar R. “Sobre la Nueva Terminal de Buses del SISTRAMSS en Soyapango” (“Comment on the Design of the new SISTRAMSS Bus Terminal in Soyapango”, publication in Spanish). *Revista de Arquitectura y Urbanismo la Casa de Todos*. Nineth Edition. ISSN: 2221-4992. Depto. de Organización del Espacio, UCA, San Salvador, El Salvador, Central America. March 2012.

Avelar R. *A New Method for Posting Advisory Speeds*. Oregon Department of Transportation. RSN 12-06. Research Note supplementing previous report *Safety Evaluation of Curve Warning Advisory Speed Signs*. May 2012.

Avelar R. *Safety Performance of Curve Advisory Speed Signs*. (Doctoral Dissertation) Retrieved from the Scholars Archive at Oregon State University. http://hdl.handle.net/1957/29376. April 2012.

Avelar R. *Effectiveness of Curve Advisory Speed Signs. A Characterization of Road Operations in Western Oregon*. (Master Thesis) Oregon State University, June 2010. [Online]. Available at: http://hdl.handle.net/1957/17673

Avelar R. “Transporte Público y su Ordenamiento” (“Public Transportation and its Management”, publication in Spanish). *Revista de Arquitectura y Urbanismo la Casa de Todos*. First Edition. ISSN: 2221-4992. Depto. de Organización del Espacio, UCA, San Salvador, El Salvador, Central America. January 2009. Also available at: http://oregonstate.academia.edu/RaulAvelar.

Avelar R., H. Martínez, M. Miranda, D. Romero, and O. Valladares. *Análisis y evaluación del sistema de supervisión y mejoramiento de la calidad en la educación superior en El Salvador* (*Analysis and Evaluation of the System for Quality Supervision and Improvement of Higher Education in El Salvador*, publication in Spanish). San Salvador, El Salvador May 2004. Available at Universidad Centroamericana: http://abaco.uca.edu.sv/opac/verdetalle.php?idobra=78914

Invited Presentations

“Uso de métodos estocásticos para estimar el impacto de vehículos automáticos y conectados en la seguridad vial de contramedidas de infraestructura.” Jornada de seminarios en línea FIA LINKS. Universidad Centroamericana, “José Simeón Cañas”. San Salvador, El Salvador. October, 2023.

“Herramientas de ingeniería industrial aplicadas a problemas de seguridad, diseño, y operaciones de transporte en EE. UU.” Jornada de seminarios en línea FIA LINKS. Universidad Centroamericana, “José Simeón Cañas”. San Salvador, El Salvador. October, 2022.

“Introducción al Análisis de Seguridad Vial. Datos, fundamentos y actividades recientes en El Salvador.” Jornada de seminarios en línea FIA LINKS. Universidad Centroamericana, “José Simeón Cañas”. San Salvador, El Salvador. June, 2021.

"Modelos Estadísticos en Problemas de Predicción. Marco y Aplicaciones". Ciclo de webinars Ingeniería Industrial. Universidad Centroamericana "José Simeón Cañas." San Salvador, El Salvador. September 2020.

"Power Analysis for Sample Size Calculations in Cross-sectional Safety Evaluations". Annual Meeting of the Evaluation of Low-cost Safety Improvements Pooled Fund Program Technical Advisory Committee. Turner Fairbank Highway Research Center. Federal Highway Administration. McLean, VA. August 2019.

"The Influence of General Purpose Lane Traffic on Managed Lane Speeds: An Operational Study in Houston, Texas". International Symposium on Enhancing Highway Performance 2016. Berlin, Germany. June 2016.

"Safety Implications of Managed Lane Cross Sectional Elements" presentation for the 2016 Safety Conference organized by the Safety Center of the Texas A&M Transportation Institute. College Station, TX. June 2016.

"Identifying Low Volume Road Segments with High Severe (Fatal and Injury) Crash Frequencies." Presentation for the 2015 Safety Conference organized by the Safety Center of the Texas A&M Transportation Institute. Corpus Christi, TX. June 2015.

"Role of Speed in Developing Safety Performance Functions. The Oregon Experience." Presentation at the Joint Midyear Meeting of ANB20, ANB25 TRB committees and AASHTO. Irvine, CA. June 2015.

"Quantifying Safety Performance of Driveways on State Highways" presentation of research results to the Oregon Department of Transportation. Salem, OR. July 2012.

"Safety Evaluation of Curve Warning Advisory Speed Signs" presented research results to the Low Volume Roads Committee at the 91st TRB Annual Meeting. Washington D.C., January 2012. Available at: http://oregonstate.academia.edu/RaulAvelar

"Aplicación de Métodos Estadísticos e Investigación de Operaciones a Problemas de Transporte" ("Application of statistical methods and Operations Research to transportation problems", in Spanish) Invited Presentation at Universidad Centroamericana JSC, sponsored by Departamento de Operaciones y Sistemas. Antiguo Cuscatlán, El Salvador, November 2011. Available at: http://oregonstate.academia.edu/RaulAvelar

"Investigación en Seguridad Vial: Desarrollos Recientes y Nuevas Direcciones" (*Roadway safety research: recent developments and new directions,* in Spanish) Invited presentation at Universidad Centroamericana JSC, sponsored by Departamento de Operaciones y Sistemas. Antiguo Cuscatlán, El Salvador, November 2011. Available at: http://oregonstate.academia.edu/RaulAvelar

"Safety Evaluation of Curve Warning Advisory Speed Signs" presented research results to the Oregon Traffic Control Devices Committee. Salem, Oregon, October 2010. Available at: http://oregonstate.academia.edu/RaulAvelar

"Safety Evaluation of Adopting MUTCD 2009 Thresholds for Advisory Speed Signs" Young Scholar Presentation at the Oregon Traffic Safety Conference, Salem, Oregon, October 2010.

"Operational Effectiveness of Advisory Speeds" University Student Research Presentation at the Oregon Traffic Safety Conference, Hood River, Oregon, October 2009.

"Introducción a la Ingeniería de Tráfico" (*Introduction to Traffic Engineering*, in Spanish) Guest lecture for the Highway Design Class at Universidad Centroamerica, Antiguo Cuscatlán, El Salvador, October 2009. Available at: http://oregonstate.academia.edu/RaulAvelar

"Optimal Location of Spot Speed Data Collection for Safety Assessment of Horizontal Curves" Graduate Student Research Summaries and Hot Topics in Geometric Design Workshop at TRB 88th Annual Meeting. Washington D.C., January 2009.

ADDITIONAL INFORMATION

- Native proficiency in Spanish
- Working proficiency in Portuguese
- Working proficiency in German