

SAFER-SIM Accomplishments

September 30, 2021 – March 31, 2022

1. Accomplishments

1.1 Research Accomplishments

1.1.1 Peer-reviewed journal publications

Published

1. Mahdavian, A., Shojaei, A., McCormick, S., Papandreou, T., Eluru, N. and Oloufa, A.A., 2021. Drivers and Barriers to Implementation of Connected, Automated, Shared, and Electric Vehicles: An Agenda for Future Research. IEEE Access, 9, pp.22195-22213. <https://doi.org/10.1109/ACCESS.2021.3056025>
2. Amin Vahedian Khezerlou, Xun Zhou, Xinyi Li, W. Nick Street, Yanhua Li. DILSA+: Predicting Urban Dispersal Events Through Deep Survival Analysis with Enhanced Urban Features. In ACM Transactions on Intelligent Systems and Technology (TIST), <https://doi.org/10.1145/3469085>
3. Yiqun Xie, Xiaowei Jia, Shashi Shekhar, Han Bao and Xun Zhou. Significant DBSCAN+: Statistically Robust Density-based Clustering. In ACM Transactions on Intelligent Systems and Technology (TIST), <https://doi.org/10.1145/3474842>.
4. Han Bao, Xun Zhou, Yiqun Xie, Yingxue Zhang, Yanhua Li. COVID-GAN+: Estimating Human Mobility Responses to COVID-19 through Spatio-Temporal Generative Adversarial Networks with Enhanced Features. In ACM Transactions on Intelligent Systems and Technology (TIST), <https://doi.org/10.1145/3481617>.
5. Yingxue Zhang, Yanhua Li, Xun Zhou, Jun Luo, and Zhi-Li Zhang. Urban Traffic Dynamics Prediction -- A Continuous Spatial-Temporal Meta-Learning Approach.. In ACM Transactions on Intelligent Systems and Technology (TIST), <https://doi.org/10.1145/3474837>.
6. Kasarla, P., Wang, C., Brown, T. L., & McGehee, D. (2021). Modeling and prediction of driving performance measures based on multi-output convolutional Gaussian process. Accident Analysis & Prevention, 161, 106360. October 2021. <https://doi.org/10.1016/j.aap.2021.106360>
7. McGehee, D., Roe, C., Kasarla, P., & Wang, C. (2021). Quantifying and recommending seat belt reminder timing using naturalistic driving video data. Journal of Safety Research. <https://doi.org/10.1016/j.jsr.2021.12.022>
8. Lishengsa Yue, Mohamed Abdel-Aty, Zijin Wang, Effects of Connected and Autonomous Vehicle Merging Behavior on MainLine Human Driven Vehicle, Journal of Intelligent & Connected Vehicles. <https://doi.org/10.1108/JICV-08-2021-0013>
9. Subramanian, L. D., O'Neal, E. E., Mallaro, S., Williams, B., Sherony, R., Plumert, J. M. & Kearney, J. K. (2022). A comparison of daytime and nighttime pedestrian road-crossing behavior using an immersive virtual environment, Traffic Injury Prevention, 23:2, 97-101, DOI: <https://doi.org/10.1080/15389588.2021.2023738>
10. Rahimian, P., Plumert, J. M., & Kearney, J. K. (2021). The Effect of Visuomotor Latency on Steering Behavior in Virtual Reality. Frontiers in virtual reality, 2, <https://doi.org/10.3389/frvir.2021.727858>
11. O'Neal, E. E., Rahimian, P., Jiang, Y., Zhou, S. Nikolas, M., Kearney, J. K., & Plumert,

- J. M. (2022). How do child ADHD symptoms and oppositionality impact parent-child interactions when crossing virtual roads? *Journal of Pediatric Psychology*, 47(3), 337-349, <https://doi.org/10.1093/jpepsy/jsab102>
12. Subramanian, L. D., O'Neal, E. E., Roman, A., Sherony, R., Plumert, J. M., & Kearney, J. K. (2021). How do pedestrians respond to adaptive headlamp systems in vehicles? A road-crossing study in a virtual environment. *Accident Analysis and Prevention*, 160, 106298, <https://doi.org/10.1016/j.aap.2021.106298>
 13. Parr, M. D. N., Tang, H., Mallaro, S. R., Kearney, J. K., & Plumert, J. M. (2021). Do inattention/hyperactivity and motor timing predict children's virtual road-crossing performance? *Journal of Pediatric Psychology*, 46(9):1130-1139. <https://doi.org/10.1093/jpepsy/jsab054>
 14. Yue, L., Abdel-Aty, M. and Wang, Z. (2022), "Effects of connected and autonomous vehicle merging behavior on mainline human-driven vehicle", *Journal of Intelligent and Connected Vehicles*, Vol. 5 No. 1, pp. 36-45. <https://doi.org/10.1108/JICV-08-2021-0013>
 15. Deliali, A., Tainter, F., Ai. C., and Christofa, E., 2022. A Framework for Mode Classification in Multimodal Environments Using Radar-based Sensors. *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*. <https://doi.org/10.1080/15472450.2022.2051702>
 16. Deliali, A., Esenther, S., Frisard, C., Goins, K.V., Lemon, S., Pollitt, K., Christofa, E., 2021. Incorporating health-related criteria for project scoring in Massachusetts. *Transportation Research Record*, 03611981211057050. <https://doi.org/10.1177%2F03611981211057050>
 17. Parthasarthy, A. R., Mehrotra, S., Fitzpatrick, C., Roberts, S., Christofa, E., & Knodler Jr, M. 2021. Driver behavior and performances on in-vehicle display based speed compliance. *Accident Analysis & Prevention*, 162, 106390. <https://doi.org/10.1016/j.aap.2021.106390>

Accepted for publication

1. M. Nour and M.Zaki. Towards formalization and monitoring of microscopic traffic parameters using temporal logic, *Accepted Journal of Transportation Research Record*. Accepted
2. Mehrotra, S., Zhang, F., & Roberts, S. C. (accepted). Looking out or looking away? Exploring the impact of driving with a passenger on young drivers' eye glance behavior. *Human Factors: The Journal of the Human Factors and Ergonomics Society*.
3. Han, Z., Gonzales, E.J., Christofa, E., Oke, J. 2022. Modeling system-wide urban rail transit energy consumption: A case study of Boston. *Transportation Research Record*. [accepted]
4. Nassereddine H., Santiago-Chaparro K.R., and D. Noyce. A Framework for Quantifying Right-Turn-on-Red Conflicts from Existing Radar-Based Vehicle Detection Infrastructure. *Transportation Research Record* (In Press).

Submitted

1. Carney, C., Gaspar, J. & Horrey, W. (under review), Longer-Term Exposure vs. Training: Their Effect on Drivers' Mental Models of ADAS Technology, *Transportation Research*

Part F.

2. Song, Y., Chitturi, M.V. and Noyce, D.A. A Methodology for Traffic Crash Sequence Analysis: Impact of Event Encoding and Dissimilarity Measures. Accident Analysis & Prevention (Under Review)

1.1.2 Book chapters

Nothing to report

1.1.3 Edited books

Nothing to report

1.1.4 Conference papers, posters, and symposia

Presented

1. “Using Virtual Simulator to Evaluate the Automated Emergency Braking System for Avoiding Pedestrian Crash at Intersections under the Occluded Conditions (2022).” The 101th Annual Meeting of the Transportation Research Board, Washington D.C., U.S.
2. Wang, Z., Yue, L*, Abdel-Aty, M., Zhu, J., Zheng, O., & Zaki, M. “Cooperative Driving at Non-Signalized Intersection in a Mixed Traffic Environment: A Co-Simulation Based Multi-Driver Driving Simulator Study.” The 101th Annual Meeting of the Transportation Research Board, Washington D.C., U.S.
3. O’Neal, E.E., Peek-Asa, C., Wendt, L., Hamann, C., Reyes, M., & Yang, J. (March, 2022). Factors associated with teens’ crash culpability. Oral presentation submitted for presentation at the 2021 annual meeting of the Society for Violence and Injury Research, Washington D.C.
4. O’Neal, E.E., Plumert, J.M., & Peek-Asa, C. (March, 2022). A method for evaluating parent-teen conversations about potential roadway hazards. Oral presentation submitted for presentation at the 2021 annual meeting of the Society for Violence and Injury Research, Washington D.C.
5. Peek-Asa, C., Zhang, L., Hamann, C., Reyes, M., O’Neal, E.E., Yang, J. (March, 2022). Direct medical costs of teen-involved vehicle crashes by culpability in a rural state. Oral presentation submitted for presentation at the 2021 annual meeting of the Society for Violence and Injury Research, Washington D.C.
6. Yiqun Xie, Erhu He, Xiaowei Jia, Han Bao, Xun Zhou, Rahul Ghosh and Praveen Ravirathinam. A Statistically-Guided Deep Network Transformation and Moderation Framework for Data with Heterogeneity. In Proc. IEEE International Conference on Data Mining (ICDM'21), Auckland, New Zealand, Nov. 7-10, 2021
7. Xin Zhang, Yanhua Li, Xun Zhou, Oren Mangoubi, Ziming Zhang, Vincent Filardi, and Jun Luo, DAC-ML: Domain Adaptable Continuous Meta-Learning for Urban Dynamics Prediction. In Proc. IEEE International Conference on Data Mining (ICDM'21), Auckland, New Zealand, Nov. 7-10, 2021
8. Yingxue Zhang, Yanhua Li, Xun Zhou, Zhenming Liu, and Jun Luo. C3-GAN: Complex-Condition-Controlled Urban Traffic Estimation through Generative Adversarial Networks

- In Proc. IEEE International Conference on Data Mining (ICDM'21), Auckland, New Zealand, Nov. 7-10, 2021.
9. Menghai Pan, Xin Zhang, Yanhua Li, Xun Zhou and Jun Luo. Learning Decision Making Strategies of Non-experts: A NEXT-GAIL Model for Taxi Drivers. In Proceedings of the ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL'21), 2021.
 10. Yiqun Xie, Xiaowei Jia, Han Bao, Xun Zhou, Jia Yu, Rahul Ghosh and Praveen Ravirathinam. Spatial-Net: A Self-Adaptive and Model-Agnostic Deep Learning Framework for Spatially Heterogeneous Datasets. In Proceedings of the ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (SIGSPATIAL'21), 2021.
 11. Deliali A., Fournier, N., Knodler, M., and Christofa, E. 2022. Investigating the safety impact of segment- and intersection-level bicycle treatments on bicycle-motorized vehicle crashes Transportation Research Board 101st Annual Meeting, 9-13 January, Washington D.C., Paper No. 22-04595.
 12. Christofa, E. Ai, C., Deliali, A., Tainter, F., Cestic, L., Hannon, T., and Kostopoulou, E. 2022. Bicyclist and motorist behavior at bike boxes. Transportation Research Board 101st Annual Meeting, 9-13 January, Washington, D.C., Paper No. 22-04722.
 13. Han, Z., Gonzales, E.J., Christofa, E., Oke, J. 2022. Modeling system-wide urban rail transit energy consumption: A case study of Boston. Transportation Research Board 101st Annual Meeting, 9-13 January, Washington, D.C., Paper No. 21-00892.
 14. Han, Z., Gonzales, E.J., Christofa, E., and Oke, J. 2021. Modeling system-wide energy in urban rail systems for sustainable strategy discovery and decision-making. INFORMS Annual Meeting, 24 -27 October, Anaheim, California.
 15. Deliali, A., Ai, C., and Christofa, E. 2021. Assessing the impact of bicycle infrastructure treatment type on the frequency of right-hook conflicts between bicyclists and motor vehicles at signalized intersections. International Cycling Safety Conference, 10-12 November, Lund, Sweden.
 16. Christofa, E., 2021. Effectiveness of Bike Boxes in Massachusetts, 2021 Moving Together Conference, December 7 [Online]
 17. Alberto Figueroa-Medina, Didier Valdés, Benjamín Colucci, Natacha Cardona, and Andrés Chamorro. September 2021. Pedestrian Walking speeds and Success Rates on Mid-Block Crossing Using Virtual Reality Simulation.

Accepted/Not yet presented

1. Figueroa-Medina, D. Valdés, B. Colucci, N. Cardona & A. Chamorro. 2022. Pedestrian Walking Speeds and Success Rates on Mid-Block Crossings using Virtual Reality Simulation. Abstract accepted for Road Safety and Simulation Conference (RSS 2022), Athens, Greece.
2. Gonzales, E., Roberts, S. C., & Mehrotra, S. (accepted). Curb Management Policy Insights and Recommendations for Communities of All Sizes. In Proceedings of the Transportation Research Board 101st Annual Meeting 2022.
3. Nassereddine H., Santiago-Chaparro K.R., and D. Noyce. A Framework for Quantifying Right-Turn-on-Red Conflicts from Existing Radar-Based Vehicle Detection Infrastructure. Transportation Research Record. International Conference on

Transportation & Development 2022. May 31 – June 3, 2022.

Submitted

Nothing to report

1.1.5 Paper/poster awards

1. Fatima Afifah. UCF. Winner of Best Poster Competition, “Spatial Pricing of Ride-sourcing Services In A Congested Transportation Network”, Institute for Operations Research and the Management Sciences (INFORMS) Annual Conference, 2021

1.1.6 External grants related to SAFER-SIM

Awarded

1. Zhaomiao Guo from UCF was awarded a grant from NSF - Optimizing Information Value in Heterogeneous Multi-agent Transportation Systems (OPTIMA), National Science Foundation, 2022, \$351k.
This project addresses the use of advanced sensing, communications, and computing technologies in studying value of information in transportation systems made up of heterogeneous traffic (cars, autonomous and connected vehicles, buses, bicycles, etc.) The wealth of data available on these systems enables new approaches to information provisioning that have the potential to improve transportation system efficiency, reliability, and resilience. Data from [this SAFER-SIM project](#) helped write the proposal for this grant.

Submitted

1. Pradhan - Consumer education for advanced vehicle technologies: Tailored training based on drivers' self-perceptions and knowledge
2. Shannon Roberts submitted a proposal that uses knowledge gained from [this Safer-Sim project](#): DRIVE - Decreasing cybersecurity Risk In Vehicles for law Enforcement, National Science Foundation, \$500,000, 06/01/2022-05/31/2025, PI
The goal of the proposal is to iteratively establish and evaluate an evidence-based education program that examines LEOs' knowledge of vehicle cybersecurity risk and trains them to be more resilient. This proposal builds off the current SaferSim work because it's focused on the design of training programs to improve driver behavior, which requires an understanding and appreciation of drivers' mental models.
3. Shannon Roberts submitted a proposal that uses knowledge gained from [this Safer-Sim project](#): Picking Human Machine Interfaces for Material Handlers, Raymond Corporation University Research Program, \$265,000, 06/01/2022-05/31/2023, PI.
The proposed research aims to establish human-machine interfaces design principles that aid material handlers in the picking process. This proposal extends this current SaferSim work by applying design principles (e.g., as they related to mental models) to areas outside of driving.

4. Shannon Roberts submitted a proposal that uses knowledge gained from [this Safer-Sim project](#): Training the Untrainable: Identifying, Categorizing, and Evaluating Approaches to Training for Driving Automation Systems, AAA Foundation for Traffic Safety, \$225,000, 04/01/2022-09/30/2023, PI

The objective of this proposal is to: (1) review and synthesize literature to identify training approaches for DASs, (2) gather insight from vehicle automation experts and non-experts on training for DASs, (3) generate guidelines to categorize training approaches, and (4) conduct a driving simulator study to evaluate the most promising training approaches. This proposal is very similar to this current SaferSim work, but is instead focused on training for driving automation systems, which will hopefully yield appropriate mental models.

5. Shannon Roberts submitted a proposal that uses knowledge gained from [this Safer-Sim project](#): Reimagining trucking: Forging an equitable and driver-centered system in a highly automated world, National Science Foundation, \$2,000,000, 09/01/2022-08/31/2026, PI.

The objective of the proposed research is to understand more fully the challenges and take advantage of opportunities to reimagine this partnership and the future of truck driving. This proposal uses knowledge from this current SaferSim work as it related to optimal design of an HMI for driving automation systems, but for a different set of drivers (truckers) who have different mental models of the systems they use.

1.2 Leadership Development Accomplishments

1.2.1 *Invited presentations*

1. Abdel-Aty, M. 2021 Florida Automated Driving (FAV) Summit, November 2021
2. O'Neal, E.E Child Development and Road Traffic Injury Risk. 2022 Iowa Safe Routes to School Conferences, Des Moines, January 27, 2022.
3. O'Neal, E.E. Learning to Drive: Parent-Teen Study. Statewide Traffic Records Coordinating Committee, University of Iowa, September 23, 2021.
4. Shannon Roberts gave a presentation called "Distraction and Glance Behavior" for Google Lunch & Learn (Online) on October 27, 2021.
5. Shannon Roberts gave a presentation called "Future of the Commonwealth's Curb" for the Baystate Roads Stump the Instructor Session (Online) on November 3, 2021.

1.2.2 *Invited papers*

Nothing to report

1.2.3 *Invited workshops*

1. Pradhan - Expert panelist on NHTSA/UNC Workshop on novice drivers and vehicle automation.

1.2.4 *Grant review panels*

1. Zhaomiao Guo served on an NSF Civil Infrastructure Systems review panel

2. Shannon Roberts served on an NSF proposal review panel.
3. Shannon Roberts served on an NIH proposal review panel for HCMF (Human Complex Mental Function).
4. Shannon Roberts continues to serve on a BTSCR panel for BTS-01: Guidance for Employer-Based Behavioral Traffic Safety Programs for Drivers in the Workplace. For the panel, she provided guidance for the contractor in terms of how drivers will respond to traffic safety programs.

1.2.5 Advisory committees

1. Dr. Mohamed Abdel-Aty: Member Board of Directors (2020-2022) International Road Federation, Washington DC.
2. Dr. Mohamed Abdel-Aty: Board of Directors, National Safety Council (2021-2023)
3. Dr. Mohamed Abdel-Aty: ITF Roundtable on Artificial Intelligence in Road Traffic Crash Prevention, OECD, 2021
4. Dr. Samiul Hasan: Transportation Safety Committee of ASCE's Transportation & Development Institute (T&DI)
5. Dr. Samiul Hasan : Artificial Intelligence (AI) Committee of ASCE's Transportation & Development Institute (T&DI)
6. Shannon Roberts is on the Center for Research on Families Steering Committee.
7. Shannon Roberts is on the Internal Advisory Board for the Institute of Diversity Sciences.
8. Dr. Mohamed Abdel-Aty: Member, World Conference on Transport Research Society – WCTRS (2004 – ongoing)
9. Dr. Mohamed Abdel-Aty: Member, Editorial Board, ITS Journal, Taylor & Francis (2003 – ongoing)
10. Dr. Mohamed Abdel-Aty: Member, Editorial Board, International Journal of Sustainable Transportation, Taylor & Francis (2013 – ongoing).
11. Dr. Mohamed Abdel-Aty: Member, Editorial Board, Analytic Methods in Accident Research (AMAR) (2019- ongoing)
12. Dr. Mohamed Abdel-Aty: Member, Editorial Board, Transportation Research Part C (2019- ongoing)
13. Dr. Yina Wu: Member, TRB Committee on Surface Transportation Weather (AH010) (2020 – ongoing)
14. UI Injury Prevention Research Center Executive Committee (Reyes)
15. UI Great Plains Center for Agricultural Health Internal Advisory Committee (Reyes)
16. Engineering Staff Advisory Council (Reyes)
17. Transportation Research Board of the National Academies: Standing Committee on Vehicle User Education, Training, and Licensing; and Young Driver Subcommittee, Member (Reyes)
18. Shannon Roberts is on the Center for Research on Families Steering Committee.
19. Shannon Roberts is on the Internal Advisory Board for the Institute of Diversity Sciences
20. TRR Editorial Board Task Force (Christofa)
21. Didier Valdés-Díaz, Applied Human Factors and Ergonomics (AHFE 2017-Present) Scientific Advisory Board.
22. Benjamín Colucci-Ríos, Applied Human Factors and Ergonomics (AHFE 2017-Present) Scientific Advisory Board.
23. Benjamín Colucci-Ríos, Member TRB Committee AHB55 Work Zone Traffic Control.

24. Benjamín Colucci-Ríos, Member Best Paper Award TRB Committee AHB55 Work Zone Traffic Control.
25. Benjamín Colucci-Ríos, Member of the Advisory Committee of the Puerto Rico - State Transportation Innovation Council (STIC).
26. Benjamín Colucci-Ríos, Member of the Advisory Committee of the US Virgin Islands - State Transportation Innovation Council (STIC).
27. Benjamín Colucci-Ríos, 2021 Latin American and Caribbean Consortium of Engineering Institution (LACCEI) International Multi-Conference for Engineering, Education, and Technology Scientific Advisory Board.
28. Benjamín Colucci-Ríos, Transportation Research Board Representative of University of Puerto Rico at Mayaguez, 1985 - Present.
29. Benjamín Colucci-Ríos, Member, TRB Standing Committee ACH50 Road User Measurement and Evaluation, 2020 - Present.
30. Benjamín Colucci-Ríos, Member, TRB Standing Committee ACP55 Traffic Control Devices, 2020 - Present.
31. Benjamín Colucci-Ríos, Co-Chair of the Traffic Enforcement Committee, International Road Federation (IRF). 2013 - Present
32. Benjamín Colucci-Ríos, Co-Chair Vision Zero Conference in Latin America Steering Committee, International Road Federation (IRF). 2021
33. Benjamín Colucci-Ríos, Member, Transportation Forensics and Risk Management (T-FARM), Institute of Transportation Engineers (ITE), 2018 – Present.
34. Benjamín Colucci-Ríos, Member, Transportation Education Council, Institute of Transportation Engineers (ITE), 2017 – Present.
35. Benjamín Colucci-Ríos, Member, Transportation Safety Council, Institute of Transportation Engineers (ITE), 2019 – Present.
36. Benjamín Colucci-Ríos, Member of the Executive Committee of the National Institute for Congestion Reduction (NICR), University Transportation Center (UTC). November 2019 - Present.
37. Benjamín Colucci-Ríos, American Association of State Highways and Transportation Officials (AASHTO) Co-Liaison representing the National Local Technical Assistance Program Association (NLTAPA). August 2019 - Present.
38. Benjamín Colucci-Ríos, Partnership Workgroup, representing the National Local Technical Assistance Program Association (NLTAPA). July 2018 - Present.
39. Benjamín Colucci-Ríos, Safety Workgroup representing the National Local Technical Assistance Benjamin Colucci, Innovation, and Implementation Workgroup representing the National Local Technical Assistance Program Association (NLTAPA). July 2018 - Present.
40. Benjamín Colucci-Ríos, Innovation, and Implementation Workgroup representing the National Local Technical Assistance Program Association (NLTAPA). July 2018 - Present.
41. Benjamín Colucci-Ríos, Strategic Highway Safety Plan (SHSP) - Puerto Rico, stakeholder representing Puerto Rico LTAP - T2; Traffic Incident Management (TIM) workgroup, 2013 - Present.
42. Benjamín Colucci-Ríos, President of Transportation and Mobility Commission College of Engineers and Surveyors of Puerto Rico (CIAPR), August 2020 - Present.
43. Benjamín Colucci-Ríos, President of Highway and Transportation Task Force, American

- Society of Civil Engineers (ASCE) - Puerto Rico Section, June 2020 - Present.
44. Benjamín Colucci-Ríos, Puerto Rican Academy of Engineering (APrI) Founding Member 2010 - Present.
 45. Alberto M. Figueroa-Medina, Standing Committee on Performance Effects of Geometric Design AKD-10 (formerly known as Operational Effects of Geometrics AHB-65), Transportation Research Board, 2013-Present.
 46. Alberto M. Figueroa-Medina, Transportation Education Council, Institute of Transportation Engineers (ITE).
 47. Alberto M. Figueroa-Medina, Transportation Safety Council, Institute of Transportation Engineers (ITE).
 48. Alberto M. Figueroa-Medina, Executive Committee of the National Institute for Congestion Reduction (NICR), University Transportation Center (UTC). Nov. 2019 - Present.
 49. Alberto M. Figueroa-Medina, Technical Committee of the Pan American Federation of Engineers Societies (UPADI), 2020-Present.
 50. Dr. Chris Schwarz: TRB committee on vehicle automation
 51. Dr. Chris Schwarz: SAE On Road Automated Driving Simulation Task Force
 52. Dawn Marshall: ACH40 Human Factors of Infrastructure Design and Operations
 53. Dawn Marshall: ACH40 Joint Subcommittee on Human Factors of In-Vehicle Systems (with ACH30)
 54. Kelvin Santiago: City of Sun Prairie Public Works Committee
 55. David A. Noyce: Wisconsin ACES (Automated Connected Electric Shared)
 56. David A. Noyce: Board of Governors (elected), President 2021-2022. Transportation & Development Institute, American Society of Civil Engineers.
 57. David A. Noyce: Member, Undergraduate Student Progression Committee. College of Engineering, University of Wisconsin-Madison.
 58. David A. Noyce: Member, Dean's Leadership Council. College of Engineering, University of Wisconsin-Madison.
 59. Erynn Schroedder: Justice, Equity, Diversity and Inclusive (JEDI) committee of the Civil and Environmental Engineering Department. UW

1.2.6 Journal editing

1. Shannon Roberts joined the editorial board of Ergonomics.
2. Dr. Mohamed Abdel-Aty: Editor-in-Chief (July 2013 – 2021), Accident Analysis and Prevention, Elsevier.
3. Dr. Mohamed Abdel-Aty: Associate Editor, Transportation Research Interdisciplinary Perspectives (TRIP).
4. Dr. Mohamed Abdel-Aty: Member, Editorial Board, ITS Journal, Taylor & Francis (2003 – ongoing)
5. Dr. Mohamed Abdel-Aty: Member, Editorial Board, International Journal of Sustainable Transportation, Taylor & Francis (2013 – present).
6. Dr. Mohamed Abdel-Aty: Member, Editorial Board, Analytic Methods in Accident Research (AMAR), 2019-present.
7. Dr. Mohamed Abdel-Aty: Member, Editorial Board, Transportation Research Part C, 2019-present
8. Dr. Mohamed Abdel-Aty: Associate Editor, Journal of Transportation Engineering, Part

A: Systems, 2021-present

9. Yina Wu: Editorial Board member, Accident Analysis and Prevention, Elsevier.
10. Lishengsa Yue, handling editor (April 2021 – ongoing), Journal of Transportation Research Record
11. Samiul Hasan, Associate Editor, Journal of Big Data Analytics in Transportation
12. Samiul Hasan, Associate Editor, IEEE ITS conference
13. Samiul Hasan, Associate Editor, Highway Transportation System Security and Emergency Response, Journal of Transportation Safety and Security (JTSS)
14. ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT), Associate Editor (Rector)
15. ACM Transactions on Accessible Computing (TACCESS), Reviewer (Rector)
16. ACM Transactions on Accessible Computing (TACCESS), Reviewer (Rector)
17. ACM CHI 22 Conference on Human Factors in Computing Systems, Reviewer (Kearney, Malik)
18. IEEE Internet of Things Journal (Kearney)
19. Transportation Research Record Handling Editor (Christofa)
20. Editorial Advisory Board of Transportation Research Part C: Emerging Technologies (Christofa)
21. Didier Valdés-Díaz, Applied Human Factors and Ergonomics (AHFE), Scientific Advisory Board, 2017-Present.
22. Didier Valdés-Díaz, 19th LACCEI International Multi-Conference for Engineering, Education, and Technology.
23. Didier Valdés-Díaz, 101th TRB Annual Meeting, January 2022, Washington DC.
24. Didier Valdés-Díaz, Editorial Board Member of International Journal of Natural Disasters, Accidents and Civil Infrastructure (RIDNAIC), Scipedia, August 2020 - Present.
25. Benjamín Colucci-Ríos, Applied Human Factors and Ergonomics (AHFE), Scientific Advisory Board, 2017-Present.
26. Benjamín Colucci-Ríos, President Editorial Board of International Journal of Natural Disasters, Accidents and Civil Infrastructure (RIDNAIC), Scipedia, February 2020 - Present.
27. Benjamín Colucci-Ríos, Co-editor “La Columna” Journal of the Institute of Civil Engineers (IIC), College of Engineers and Surveyors of Puerto Rico. 2020 - Present
28. Benjamín Colucci-Ríos, Assistant to the Editor of Dimension Journal, College of Engineers and Surveyors of Puerto Rico (CIAPR), September 2019 - Present.
29. Benjamín Colucci-Ríos, Transportation Research Records of the Transportation Research Board (TRB) Annual Meetings. National Academies of Sciences, Engineering, and Medicine. Washington, D.C., 1987 - Present.
30. Benjamín Colucci-Ríos, Member, TRB Standing Committee AND30 Simulation and Measurements of Vehicle and Operator Performance, 2019-2022.
31. Benjamín Colucci-Ríos, Member, TRB Standing Committee on Road User Measurement and Evaluation (ACH50); 2020-2022.
32. Benjamín Colucci-Ríos, Latin American and Caribbean Consortium of Engineering Institution (LACCEI) International Multi-Conference for Engineering, Education, and Technology Scientific Advisory Board. 2021
33. Alberto M. Figueroa-Medina, 101th Transportation Research Board (TRB) Annual

Meeting, January 2022, Washington, DC.

34. Alberto M. Figueroa-Medina, Transportation Research Record, TRB Journal.
35. Alberto M. Figueroa-Medina, Accident Analysis and Prevention Journal, Elsevier.
36. Alberto M. Figueroa-Medina, Dimension Journal of the College of Engineers and Surveyors of Puerto Rico, 2019 - Present.
37. Alberto M. Figueroa-Medina, International Journal of Natural Disasters, Accidents and Civil Infrastructure (RIDNAIC), Scipedia, September 2020 - Present.
38. David A. Noyce: Journal of Transportation Engineering (ASCE). Associate Editor.
39. David A. Noyce: International Journal on Sustainable Transportation. Editorial Board.
40. David A. Noyce: Accident Analysis and Prevention Journal. Editorial Advisory Board.

1.2.7 Leadership positions in professional organizations

1. 2022 ACM SIGACCESS Conference on Computers and Accessibility, Organizing Committee (Rector)
2. Editorial Board, Driving Simulation Conference 2022 (Kearney)
3. M. Zaki: Paper Review Co-chair of the 2022 TRB AED50 AI and Advanced Computing Applications Committee
4. 2022 ACM CHI Conference on Human Factors in Computing Systems, Program Committee (Rector)
5. 2022 ACM SIGACCESS Conference on Computers and Accessibility, Organizing Committee (Rector)
6. TRB ACP25 Traffic Signal Systems Committee Member and Paper Review Coordinator (Christofa)
7. TRB AME70 Transportation and Public Health Committee Member and Secretary (Christofa)
8. Didier Valdés-Díaz, Technical Committee, Pan American Federation of Engineering Associations (UPADI), 2020-Present.
9. Benjamín Colucci-Ríos, Member, Board of Directors of the Pan-American Academy of Engineering (PAE), 2018 - Present.
10. Benjamín Colucci-Ríos, Member, Board of Trustees of the Society of Engineers of Puerto Rico (SIPR), 2019 - Present.
11. Benjamín Colucci-Ríos, President of the Pan-American Transport Systems Committee, Pan-American Federation of Engineering Associations (UPADI), 2017 - Present.
12. Benjamín Colucci-Ríos, Vice-President of the International Society for Maintenance and Rehabilitation of Transport Infrastructures (ISMARTI). 2016 - Present.
13. Benjamín Colucci-Ríos, Assistant to the Editor, Editorial Commission, Dimension Journal Commission, College of Engineers and Surveyors of Puerto Rico, 2019 - Present.
14. Benjamín Colucci-Ríos, Member, International Network of Abertis Chairs
15. Benjamín Colucci-Ríos, Director of Abertis Chair in Puerto Rico.
16. Benjamín Colucci-Ríos, UPRM Program Manager of Dwight David Eisenhower Transportation Fellowship Program (DDETFP) for Hispanic Serving Institutions, 2010 - Present.
17. Benjamín Colucci-Ríos, Spokesperson for the Decade of Action Road Safety of Puerto Rico, 2011- 2020 & 2021-2030.
18. Benjamín Colucci-Ríos, Member of the Board of Directors of the Institute of Civil Engineers, College of Engineers and Surveyors of Puerto Rico (CIAPR-IIC), 2019-

Present.

19. Benjamín Colucci-Ríos, Founder and Director of the Puerto Rico Transportation Technology Transfer Center (PR-LTAP). 1986 - Present.
20. Benjamín Colucci-Ríos, Every Day Count (EDC) Program Technical Oversight Director of Puerto Rico PRHTA and U.S. Virgin Islands DPW.
21. Benjamín Colucci-Ríos, Editor-in-Chief El Puente Bilingual Newsletter, Puerto Rico LTAP, 1986 - Present.
22. Benjamín Colucci-Ríos, Co-editor “La Columna” Journal of the Institute of Civil Engineers (IIC), College of Engineers and Surveyors of Puerto Rico. 2020 - Present
23. Benjamín Colucci-Ríos, President, Mobility and Transportation Commission, College of Engineers and Surveyors of Puerto Rico (CIAPR), 2020-Present.
24. Alberto M. Figueroa-Medina, Editorial Commission, Dimension Journal of the College of Engineers and Surveyors of Puerto Rico, 2019 - Present.
25. Alberto M. Figueroa-Medina, Pan-American Transport Systems Technical Committee, Pan-American Federation of Engineering Associations (UPADI), 2020-Present.

1.2.8 SAFER-SIM Webinars

Webinar	Date	Registrants	Archived Views
Effect of Large Vehicles on Left Turn Gap Acceptance at Signalized Intersections	10/19/2021	21	42
Interfacing Synchrono & NADS for Virtual Simulation of Conventional, Connected & Autonomous Vehicles	11/2/2021	21	67
Using Simulation to Study Communication between Autonomous Vehicles and Vulnerable Road Users	11/16/2021	18	63
Impact of Road Information Assistive Systems on Pedestrian Crossing Safety	11/23/2021	39	59
Defining Safety-Critical Scenarios for Simulation-Based Automated Vehicle Evaluation	11/30/2021	23	64
Multitask Learning and Prediction of Baseline Driving Performance Measures	12/7/2021	9	32
Investigation of Driving Behavior at Alternative Intersection Designs and Safety Improvement	12/21/2021	25	47
Investigation of Merge Strategies at Ramp Area in Connected Vehicle Environment based on Multi-Driver Simulator System	2/8/2022	18	32
Understanding Bicyclists’ Behaviors Through Learning from Big Trip Data	2/22/2022	16	25
Evaluating the Effects of Cooperative Perception on Avoiding Pedestrian Crashes for Connected and Automated Vehicles	3/1/2022	33	26

Using Augmented Reality to Help Older Adults Make Safe Road-Crossing Decisions	3/22/2022	17	28
Understanding of advanced vehicle technology: Role of system exposure and perceptions of other road users	3/29/2022	69	27

1.2.9 Professional awards

1. Dr. Mohammed Abdel-Aty: American Road and Transportation Builders Association (ARTBA)'s Research and Education Division's (RED) [S.S. Steinberg Award](#), 2022.
2. Jorge Ugan received CUTC Student of the Year Award
3. Apoorva Hungund - AAAM H. Clay Gabler Scholar's Program Award
4. Jorge Ugan received the SaferSim Excellence Award for UCF Graduate Students.
5. Leila Cesic received the SaferSim Excellence Award for UM Undergraduate Students.
6. Shashank Mehrotra received the SaferSim Excellence Award for UM Graduate Students.
7. Lakshmi Subramanian received the SaferSim Excellence Award for UI Graduate Students.
8. Jah'inaya Parker received the UMass award for Rising Researcher. The award is given to exceptional undergraduate students who excel in research, scholarship, and creative activity
9. Center for Research on Families Family Research Scholar [UMass] (Christofa): The impact of bicycle treatments on adolescents' choice to bike in socioeconomically diverse communities
10. 2022 College of Engineering Outstanding Senior Faculty Award [UMass] (Knodler)

1.3 Education and Workforce Development Accomplishments

1.3.1 Peer-reviewed journal publications w/ student authors

1. Lishengsa Yue, Mohamed Abdel-Aty, Zijin Wang, Effects of Connected and Autonomous Vehicle Merging Behavior on MainLine Human Driven Vehicle, Journal of Intelligent & Connected Vehicles. <https://doi.org/10.1108/JICV-08-2021-0013>
2. Subramanian, L. D., O'Neal, E. E., Mallaro, S., Williams, B., Sherony, R., Plumert, J. M. & Kearney, J. K. (2022). A comparison of daytime and nighttime pedestrian road-crossing behavior using an immersive virtual environment, Traffic Injury Prevention, 23:2, 97-101, DOI: <https://doi.org/10.1080/15389588.2021.2023738>
3. Rahimian, P., Plumert, J. M., & Kearney, J. K. (2021). The Effect of Visuomotor Latency on Steering Behavior in Virtual Reality. Frontiers in virtual reality, 2, <https://doi.org/10.3389/frvir.2021.727858>
4. O'Neal, E. E., Rahimian, P., Jiang, Y., Zhou, S. Nikolas, M., Kearney, J. K., & Plumert, J. M. (2022). How do child ADHD symptoms and oppositionality impact parent-child interactions when crossing virtual roads? Journal of Pediatric Psychology, 47(3), 337-349, <https://doi.org/10.1093/jpepsy/jsab102>
5. Subramanian, L. D., O'Neal, E. E., Roman, A., Sherony, R., Plumert, J. M., & Kearney, J. K. (2021). How do pedestrians respond to adaptive headlamp systems in vehicles? A road-crossing study in a virtual environment. Accident Analysis and Prevention, 160, 106298, <https://doi.org/10.1016/j.aap.2021.106298>

6. Parr, M. D. N., Tang, H., Mallaro, S. R., Kearney, J. K., & Plumert, J. M. (2021). Do inattention/hyperactivity and motor timing predict children's virtual road-crossing performance? *Journal of Pediatric Psychology*, 46(9):1130-1139.
<https://doi.org/10.1093/jpepsy/jsab054>
7. Yue, L., Abdel-Aty, M. and Wang, Z. (2022), "Effects of connected and autonomous vehicle merging behavior on mainline human-driven vehicle", *Journal of Intelligent and Connected Vehicles*, Vol. 5 No. 1, pp. 36-45. <https://doi.org/10.1108/JICV-08-2021-0013>
8. Deliali, A., Tainter, F., Ai, C., and Christofa, E., 2022. A Framework for Mode Classification in Multimodal Environments Using Radar-based Sensors. *Journal of Intelligent Transportation Systems: Technology, Planning, and Operations*.
<https://doi.org/10.1080/15472450.2022.2051702>
9. Deliali, A., Esenther, S., Frisard, C., Goins, K.V., Lemon, S., Pollitt, K., Christofa, E., 2021. Incorporating health-related criteria for project scoring in Massachusetts. *Transportation Research Record*, 03611981211057050.
<https://doi.org/10.1177%2F03611981211057050>
10. Parthasarathy, A. R., Mehrotra, S., Fitzpatrick, C., Roberts, S., Christofa, E., & Knodler Jr, M. 2021. Driver behavior and performances on in-vehicle display based speed compliance. *Accident Analysis & Prevention*, 162, 106390.
<https://doi.org/10.1016/j.aap.2021.106390>

1.3.2 Book chapters w/ student authors

Nothing to report

1.3.3 Conference posters and papers w/ student authors

1. Deliali A., Fournier, N., Knodler, M., and Christofa, E. 2022. Investigating the safety impact of segment- and intersection-level bicycle treatments on bicycle-motorized vehicle crashes Transportation Research Board 101st Annual Meeting, 9-13 January, Washington D.C., Paper No. 22-04595.
2. Christofa, E. Ai, C., Deliali, A., Tainter, F., Cesic, L., Hannon, T., and Kostopoulou, E. 2022. Bicyclist and motorist behavior at bike boxes. Transportation Research Board 101st Annual Meeting, 9-13 January, Washington, D.C., Paper No. 22-04722.
3. Han, Z., Gonzales, E.J., Christofa, E., Oke, J. 2022. Modeling system-wide urban rail transit energy consumption: A case study of Boston. Transportation Research Board 101st Annual Meeting, 9-13 January, Washington, D.C., Paper No. 21-00892.
4. Han, Z., Gonzales, E.J., Christofa, E., and Oke, J. 2021. Modeling system-wide energy in urban rail systems for sustainable strategy discovery and decision-making. *INFORMS Annual Meeting*, 24 -27 October, Anaheim, California.
5. Deliali, A., Ai, C., and Christofa, E. 2021. Assessing the impact of bicycle infrastructure treatment type on the frequency of right-hook conflicts between bicyclists and motor vehicles at signalized intersections. *International Cycling Safety Conference*, 10-12 November, Lund, Sweden.

1.3.4 Paper/poster awards w/ student authors

1. Fatima Afifah. UCF. Winner of Best Poster Competition, “Spatial Pricing of Ride-sourcing Services In A Congested Transportation Network”, Institute for Operations Research and the Management Sciences (INFORMS) Annual Conference, 2021

1.3.5 Graduate students working on and supported by SAFER-SIM related projects

Site	Number
University of Iowa	6
University of Wisconsin Madison	3
University of Massachusetts Amherst	7
University of Central Florida	6
University of Puerto Rico Mayaguez	8

1.3.6 Undergraduate students working on and supported by SAFER-SIM related projects

Site	Number
University of Iowa	4
University of Wisconsin Madison	0
University of Massachusetts Amherst	6
University of Central Florida	1
University of Puerto Rico Mayaguez	2

1.3.7 Student attendance and presentations at the SAFER-SIM symposium

7 students
4 presentations

1.3.8 Transportation-related M.A. and PhD theses

1. Shashank Mehrotra successfully defended his PhD on October 26, 2021 (UM)
2. Assessing the Impact of Bicycle Treatments on Bicycle Safety: A Multi-Methods Approach [PhD Dissertation, Aikaterini Deliali; supervised by E. Christofa] (UM)

1.3.9 Curriculum modules developed

1. Curriculum module on policy gradient methods has been added in CGN 5617 Infrastructure System Optimizaiton Course at UCF.
2. CS 4500:0001 Research Methods in Human-Computer Interaction at UI

1.3.10 Student internships related to SAFER-SIM

Nothing to report

1.3.11 Presentations to student groups or classes

1. Presenter: Samiul Hasan. ITE UCF Student Chapter. Title: Data Science for Smart Cities
2. Foundation of the Learning Sciences, Fall 2021, Guest Lecture: Elizabeth O'Neal
3. Research Methods in Human-Computer Interaction, Fall 2021, Guest Lecture: Elizabeth O'Neal
4. Advanced Psychology for Pre-Medical Track, Spring 2022, Guest Lecture: Elizabeth O'Neal
5. CPH:4220:0001 Global Road Safety, Lab demonstrations (24) (February 17, 2022) (Oneal)
6. Shannon Roberts presented a presentation entitled "How (Human Factors) Engineering Can Promote Equity and Social Justice" for the Integrative Frameworks for Technology, Environment, and Society course at Harvard University on November 18, 2021.

1.3.12 # Schools visited and # students present

1. Oelwein Middle School on 12/6 & 12/7 – 120 students
2. Oelwein High School on 12/9/ & 12/10 – 120 students
3. Bettendorf Middle School 8th Grade Science Visit on 2/8/2022 – 95 students

1.3.13 # Career fairs visited and # of attendees

1. Johnson County STEAM Institute on 11/23/2021 – 300 students

1.3.14 Summer institutes and programs and # of students participating

Nothing to report

1.4 Technology Transfer

1.4.1 SAFER-SIM webinars

12 webinars

1.4.2 Registrations for webinars

309 registrations

1.4.3 Views of archived webinar content

512 views

1.4.4 Press releases for SAFER-SIM related research

1. [Innovative Headlights, Studied by CSRC, Could Help Save Pedestrians, Bicyclists](#) – Toyota Newsroom

1.4.5 Media requests

Title	Publisher
1. UI simulator helps cut winter traffic deaths, develop new tech	CBS 2 Iowa
2. The Latest Research on Drugged Driving with Dr. Timothy Brown	Global Road Safety Podcast
3. UI researchers find link between cannabis and driving impairment	The Daily Iowan
4. Washington County Participants Sought for Automated Bus Trials	KCII Radio
5. ‘Arbitrary’ cutoffs of THC levels make it difficult to measure impaired driving	NBC News
6. The road ahead: Driving tests go virtual	The Star
7. University of Central Florida’s Dr. Mohamed Abdel-Aty Honored With Prestigious National Research Award	ARTBA
8. College of Engineering Selects Michael Knodler and Yubing Sun as 2022 Outstanding Faculty Members	UMass College of Engineering

1.4.6 Tours of facilities

1. Approximately 50 students visited the driving simulator laboratory as part of the Introduction to Transportation Engineering course (UW-Madison, CEE 370) on February 3, 2022.
2. A tour of the driving simulator for a DOT Supervisor was conducted on January 19, 2022 to discuss the potential use of the driving simulator to student the impact of ignition interlock devices on safety when the vehicle is operational.
3. A tour of the driving simulator for 2 executives from Lab Midwest was conducted on December 6, 2021 to discuss the integration of educational technologies.
4. A tour of the driving simulator for approximately 10 high school students was conducted on December 2021. The purpose of the event was to encourage girls to pursue engineering as a career.
5. Approximately 10 students visited the driving simulator laboratory as part of the Traffic Control course (UW-Madison, CEE 574) on December, 2021.
6. Two professors from Brazil visited the driving simulator on November 17, 2021 as one their tours during a visit to campus.
7. University of Iowa President Barbara Wilson
8. Raytheon
9. Iowa State Representative Dustin Hite
10. Legislators in the Lab including Iowa State Senators and Representatives and UI staff
11. Iowa DOT
12. Central Iowa Transportation Advisory Group
13. Marion Home School Assistance Program
14. Local Boy Scout Troup
15. Iowa Association of County Conservation Board Employees

16. US Representative Marionette Miller-Meeks staff
17. Project Lead the Way
18. UI Human Factors and Ergonomics Society (HFES) Student Chapter
19. Transportation Research Center, Inc.
20. Iowa City Community School District Teachers Professional Development

1.4.7 Website traffic

Metric	This Period	Lifetime
Total Users	2,771	25,158
New Users	2,723	24,598
Sessions	4,155	46,892
Page Views	7,961	98,429

1.4.8 Patents filed

Nothing to report

1.4.9 DOT requests for presentations or proposals related to SAFER-SIM

Nothing to report

1.4.10 Practitioner attendance at events

1. 41 practitioners at SAFER-SIM webinars
2. 2 practitioners at SAFER-SIM symposium

1.4.11 Number of improved or new simulation technologies, software, methods, or processes

1. Through this [project](#), UM developed two interfaces that better informs drivers of the functionality of automated vehicle technology. In comparison to a bare bones interface, the two improved interfaces yielded optimal performance (i.e., drivers took back control of the vehicle quickly and efficiently).

1.5 Collaboration

1.5.1 Attendance at the SAFER-SIMposium

43 attendees

1.5.2 Interdisciplinary research projects within and across sites

1. Using Simulation to Assess and Reduce Conflicts between Drivers and Bicyclists (Computer Science/Psychological & Brain Sciences)
2. Multi-modal Distributed Simulation Combining Cars, Bicyclists, and Pedestrians (Computer Science/Psychological & Brain Sciences)

3. Using Simulation to Study Communication between Autonomous Vehicles and Vulnerable Road Users (Computer Science/Psychological & Brain Sciences)
4. Understanding Bicyclists' Behaviors Through Learning from Big Trip Data (Business/Public Health/Urban & Regional Planning)
5. Defining Safety-Critical Scenarios for Simulation-Based Automated Vehicle Evaluation - (UW-Madison Engineering/Global Health Institute)
6. Attention and Adaption of Teen Drivers to Driving Automated Systems – (UMass College of Engineering/College of Natural Sciences)

1.5.3 Collaborative research projects across SAFER-SIM or other UTC sites

1. Multi-modal Distributed Simulation Combining Cars, Bicyclists, and Pedestrians (UI/UW/UM)
2. Using Simulation to Assess and Reduce Conflicts between Drivers and Bicyclists (UI/UM/UCF)
3. Enhancing School Zone and School Bus Safety (UCF/UPR)
4. Evaluation of Safety Enhancements in School Zones with Familiar and Unfamiliar Drivers (UPR/UM)
5. The Impact of Driver's Mental Models of Advanced Vehicle Technologies on Safety and Performance (UI/UM)
6. Analyzing the Performance of Remote-Drivers on Transit Shuttle Short Routes (UW/UPR)
7. Interfacing Synchro and NADS for Virtual Simulation of Conventional & Connected and Autonomous Vehicles (UW/UI)
8. AAAFTS/SaferSim Cooperative Research Program (UI/UM/UW/UCF)

1.5.4 Collaborations with industry partners and government agencies

<i>Organization Name</i>	<i>Location</i>	<i>Contribution</i>
1. Aisin Technical Center of America	Northville, MI	Financial support
2. AAA Foundation for Traffic Safety	Washington D.C.	Financial support Collaborative research
3. InSight Learning Technologies	Pacific Palisades, CA	Personnel exchange
4. Mandli Communications Inc.	Madison, WI	In-kind support Facilities Collaborative Research
5. Continental Mapping Consultants Inc	Madison, WI	In-kind support Facilities Collaborative Research
6. Council of University Transportation Centers	Washington D.C	Financial support
7. Hyundai America Technical Center Inc.	Superior Township, MI	Financial support
8. City of Orlando	Orlando, FL	Collaborative Research
9. Recreative Association of	Mayaguez, PR	Facilities

Sport Buenaventura		
10. Mayaguez Bureau of Highway Patrol	Mayaguez, PR	Facilities Personnel Exchange
11. Club de Oficinistas de Mayagüez	Mayaguez, PR	Facilities
12. Puerto Rico LTAP Center, University of Puerto Rico at Mayaguez	Mayaguez, PR	Facilities
13. VHB	Washington D.C.	In-kind support
14. Lee Engineering	Phoenix, AZ	In-kind support
15. UW-Madison Global Health Institute	Madison, WI	Collaborative Research
16. City of Racine	Racine, WI	Financial support
17. Gateway Technical College	Racine, WI	In-kind support

1.5.5 Collaborative peer-reviewed journal publications

Nothing to report

1.5.6 Collaborative book chapters

Nothing to report

1.5.7 Student exchanges with other SAFER-SIM sites

Nothing to report

1.5.8 Students pursuing advanced degrees at other SAFER-SIM sites

Nothing to report

1.5.9 Programs involving community colleges

1. University of Wisconsin Shuttle Project involving Gateway Technical College

1.5.10 Graduates hired at SAFER-SIM, other UTC sites, or external organizations

Nothing to report

1.6 Diversity

1.6.1 # SAFER-SIM projects involving underrepresented/minority (U/M) students

22 projects involving 23 students

1.6.2 # U/M events attended

1. Shannon Roberts attended the Annual Meeting for the National Society of Black Engineers, as the faculty advisor for the UMass Chapter, from March 23-27, 2022. The meeting comprises the largest gathering of Black engineers, with >5000 attendees. Twenty students from UMass attended the Annual Meeting.

1.6.3 # U/M students at attended events

5000 students

1.6.4 Graduating U/M student placement

1. Aikaterini Deliali, Postdoctoral Research Associate at the National Technical University of Athens

1.7 Outcomes

1.7.1 Number of improved or new technologies, software, methods, or processes adopted

1. Through this [project](#), UM developed two interfaces that better informs drivers of the functionality of automated vehicle technology. In comparison to a bare bones interface, the two improved interfaces yielded optimal performance (i.e., drivers took back control of the vehicle quickly and efficiently).

1.7.2 Stakeholders who adopt, implement or deploy SAFER-SIM research findings or technologies through policy, practice, regulation, rulemaking or legislation

Nothing to report

1.7.3 Number of projects that reach adoption, implementation or deployment

Nothing to report

1.8 Impacts

1.8.1 Expected reductions in crashes from implemented policy, practice, regulation, rulemaking, or legislation

1. We expected the research outcome from [this SAFER-SIM project](#) to have a clear idea of traffic safety factors of the highway before starting a major project.
2. If the advanced dashboard interface from this [project](#) were implemented on a larger scale, more drivers would be aware of automated vehicle functionality and would more closely monitor the technology when it is activated. This would in turn lead to fewer instances of unexpected vehicle behavior (e.g., the vehicle doesn't stop for a pedestrian at an

intersection) and fewer crashes.

1.8.2 Expected reduction in congestion and traffic conflicts from implemented policy, practice, regulation, rulemaking or legislation

1. We expected the research outcome from [this SAFER-SIM project](#) to improve the transportation infrastructure and stakeholders to be informed about possible scenarios for reducing traffic congestion.