

## Appendix D – Outputs – Publications, Conference Papers, & Presentations

Grant No. 69A3551747108

Mountain-Plains Consortium, North Dakota State University

Reporting Period End Date: March 31, 2022

SAPR#10

### Publications

- Published: Abdallah, Abdelrahman M., Rebecca A. Atadero, and Mehmet E. Ozbek. "A State-of-the-Art Review of Bridge Inspection Planning: Current Situation and Future Needs." ASCE Journal of Bridge Engineering, 27(2), 03121001, 2022. DOI:[10.1061/\(ASCE\)BE.1943-5592.0001812](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001812). Acknowledgement of federal support: Yes. \*This article was selected as the editor's choice for the Journal of Bridge Engineering in the month of February.
- Published: Alrejail, Anas and Khaled Ksaibati. "Impact of Combined Alignments and Different Weather Conditions on Vehicle Rollovers." KSCE Journal of Civil Engineering, 26:893–906, 2022. DOI:[10.1007/s12205-021-5023-5](https://doi.org/10.1007/s12205-021-5023-5). Acknowledgement of federal support: Yes.
- Published: Alrejail, Anas, Ahmed Farid, and Khaled Ksaibati. "Investigating Factors Influencing Rollover Crash Risk on Mountainous Interstates." Journal of Safety Research, 80:391-398, 2022. DOI:[10.1016/j.jsr.2021.12.020](https://doi.org/10.1016/j.jsr.2021.12.020). Acknowledgement of federal support: Yes.
- Published: Amatya, Ibin, Junwon Seo, Todd Letcher, and Dan Bierschbach. "Tensile- and Shear-Strength Tests with Adhesive Connections in Dynamic Message Signs." ASCE Journal of Materials in Civil Engineering, 33(6). DOI:[10.1061/\(ASCE\)MT.1943-5533.0003781](https://doi.org/10.1061/(ASCE)MT.1943-5533.0003781). Acknowledgement of federal support: Yes.
- Published: Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Incorporating Horizontal Curves and Roadway Geometry into the Automated Updated Grade Severity Rating System." Transportation Research Record: Journal of Transportation Research Board, 2022. DOI:[10.1177/03611981221078288](https://doi.org/10.1177/03611981221078288). Acknowledgement of federal support: Yes.
- Published: Asib, Abu Sufian Mohammad, Rizwanur Rahman, Pedro Romero, Michael Hoepfner, and Abdullahal Mamun. "Physicochemical Characterization of Short and Long-Term Aged Asphalt Mixtures for Low-Temperature Performance." Construction and Building Materials, 319(126038), 2022. DOI:[10.1016/j.conbuildmat.2021.126038](https://doi.org/10.1016/j.conbuildmat.2021.126038). Acknowledgement of federal support: Yes.
- Published: Bridgelall, Raj and Denver Tolliver. "Budgeting the Adoption of Sensors on Connected Trains." Transportation Planning and Technology, 45(1):100-116, 2022. DOI:[10.1080/03081060.2021.2017205](https://doi.org/10.1080/03081060.2021.2017205). Acknowledgement of federal support: Yes.
- Published: Bridgelall, Raj, Pan Lu, Denver Tolliver, Neeraj Dhingra, and Bhavana Bhardwaj. "Benefit Cost Analysis of Railroad Track Monitoring Using Sensors Onboard Revenue Service Trains." MPC-21-446, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.
- Published: Cvijovic, Zorica, Milan Zlatkovic, Aleksandar Stevanovic, and Yu Song. "Conditional Transit Signal Priority for Connected Transit Vehicles." Transportation Research Record, Journal of the Transportation Research Board, 2676(2):490–503, 2021. DOI:[10.1177/03611981211044459](https://doi.org/10.1177/03611981211044459). Acknowledgement of federal support: Yes.
- Published: Dangol, Ijan and Chris P. Pantelides. "Resilient Posttensioned Bridge Bent with Buckling Restrained Brace." ASCE Journal of Bridge Engineering, 27(2), 2022. DOI:[10.1061/\(ASCE\)BE.1943-5592.0001823](https://doi.org/10.1061/(ASCE)BE.1943-5592.0001823). Acknowledgement of federal support: Yes.

- Published: Dangol, Ijan, Dipendra Thapa, and Chris P. Pantelides. "Experimental Evaluation of Post-tensioned Bridge Bent under Cyclic Loads and Comparison to Hybrid Bridge Bents." *Engineering Structures*, 256(113962), 2022. DOI:[10.1016/j.engstruct.2022.113962](https://doi.org/10.1016/j.engstruct.2022.113962). Acknowledgement of federal support: Yes.
- Published: Faisal, H M Nasrullah. "In-Silico Investigation of Geological and Biological Materials by Molecular Dynamics Simulations." Doctoral Dissertation, North Dakota State University, 2021. Acknowledgment of federal support: Yes. \*Embargoed from public dissemination for 12 months to allow time for manuscripts to be submitted.
- Published: Farhadmanesh, Mohammad, Chandler Cross, Ali H. Mashhadi, Abbas Rashidi, and Jessica Wempen. "Highway Asset and Pavement Condition Management Using Mobile Photogrammetry." *Transportation Research Record: Journal of Transportation Research Board*, 2675(9): 296-307, 2021. DOI:[10.1177/03611981211001855](https://doi.org/10.1177/03611981211001855). Acknowledgment of federal support: Yes.
- Published: Farid, Ahmed and Khaled Ksaibati. "Modeling Two-Lane Highway Passing-Related Crashes Using Mixed Ordinal Probit Regression." *ASCE Journal of Transportation Engineering, Part A: Systems*, 146(9), 2020. DOI:[10.1061/JTEPBS.0000428](https://doi.org/10.1061/JTEPBS.0000428). Acknowledgement of federal support: Yes.
- Published: Farid, Ahmed, Anas Alrejjal, and Khaled Ksaibati. "Two-Lane Highway Crash Severities: Correlated Random Parameters Modeling Versus Incorporating Interaction Effects." *Transportation Research Record: Journal of the Transportation Research Board*, 2675(11):565-575, 2021. DOI:[10.1177/03611981211018473](https://doi.org/10.1177/03611981211018473). Acknowledgement of federal support: Yes.
- Published: Farid, Ahmed, Zephaniah Connell, James Mock, Suresh Muknahallipatna, and Khaled Ksaibati. "Introducing a New Apparatus for Designating Two-Lane Highway Passing and No-Passing Zones." *Transportation Research Record: Journal of the Transportation Research Board*, 2675(6):420-428, 2021. DOI:[10.1177/0361198121994112](https://doi.org/10.1177/0361198121994112). Acknowledgement of federal support: Yes.
- Published: Fosu-Saah, Benjamin, Marwan Hafez, and Khaled Ksaibati. "A Review of Accelerated Pavement Testing Applications in Non-Pavement Research." *CivilEng*, 2(3):612-631, 2021. DOI:[10.3390/civileng2030034](https://doi.org/10.3390/civileng2030034). Acknowledgement of federal support: Yes.
- Published: Greenaway, Evan. "Seismic Performance of Mechanically Spliced Precast Bridge Columns with New Couplers." Master's Thesis, South Dakota State University, 2021. <https://openprairie.sdstate.edu/etd2/271>. Acknowledgement of federal support: Yes.
- Published: Haq, Muhammad Tahmidul, Ahmed Farid, and Khaled Ksaibati. "Estimating Passing Sight Distances for Overtaking Truck Platoons - Calibration and Validation Using VISSIM." *International Journal of Transportation Science and Technology*, 11(1), 2021. DOI:[10.1016/j.ijtst.2021.03.009](https://doi.org/10.1016/j.ijtst.2021.03.009). Acknowledgement of federal support: Yes.
- Published: Haq, Muhammad Tahmidul, Amirarsalan Mehrara Molan, and Khaled Ksaibati. "Evaluating the Operational Efficiency of Two Versions of Super Diverging Diamond Interchange Design: A Case Study in Denver, Colorado." *Transportation Research Record: Journal of Transportation Research Board*, 2676(1):747-762, 2021. DOI:[10.1177/03611981211037241](https://doi.org/10.1177/03611981211037241). Acknowledgement of federal support: Yes.
- Published: Huang, Ying, Pan Lu, Raj Bridgelall, Xinyi Yang, and Yihao Ren. "Infrastructure Safety Support System for Smart Cities with Autonomous Vehicles." MPC-21-447, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.

- Published: Humagain, Prasanna and Patrick A. Singleton. "Advances in Pedestrian Travel Monitoring: Temporal Patterns and Spatial Characteristics Using Pedestrian Push-Button Data from Utah Traffic Signals." *Journal of Transport and Land Use*, 14(1):1341-1360, 2021. DOI: [10.5198/jtlu.2021.2112](https://doi.org/10.5198/jtlu.2021.2112). Acknowledgement of federal support: Yes.
- Published: Liu, Zhaocai, Zhibin Chen, Yi He, and Ziqi Song. "Network User Equilibrium Problems with Infrastructure-Enabled Autonomy." *Transportation Research Part B: Methodological*, 154, 2021. DOI: [10.1016/j.trb.2021.07.005](https://doi.org/10.1016/j.trb.2021.07.005). Acknowledgement of federal support: Yes.
- Published: Lu, Pan, Raj Bridgelall, Denver Tolliver, Bhavana Bhardwaj, and Neeraj Dhingra. "Track Surface Irregularity Position Localization with Smartphone-Based Solution." MPC-21-445, North Dakota State University – Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.
- Published: Nasr Esfahani, Hossein, Zhaocai Liu, and Ziqi Song. "Optimal Pricing for Bidirectional Wireless Charging Lanes in Coupled Transportation and Power Networks." *Transportation Research Part C: Emerging Technologies*, 135(103419), 2022. DOI: [10.1016/j.trc.2021.103419](https://doi.org/10.1016/j.trc.2021.103419). Acknowledgement of federal support: Yes.
- Published: Perry, Brandon J., Yanlin Guo, and Hussam N. Mahmoud. "Automated Site-Specific Assessment of Steel Structures through Integrating Machine Learning and Fracture Mechanics." *Automation in Construction*, 133(104022), 2022. DOI: [10.1016/j.autcon.2021.104022](https://doi.org/10.1016/j.autcon.2021.104022). Acknowledgement of federal support: Yes.
- Published: Perry, Brandon J., Yanlin Guo, Rebecca Atadero, and John W. van de Lindt. "A Streamlined Bridge Inspection Framework Utilizing Unmanned Aerial Vehicles." MPC-21-443, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.
- Published: Poudel, Niranjana and Patrick A. Singleton. "Preferences for Roundabout Attributes among US Bicyclists: A Discrete Choice Experiment." *Transportation Research Part A: Policy and Practice*, 155:316-329, 2022. DOI: [10.1016/j.tra.2021.11.023](https://doi.org/10.1016/j.tra.2021.11.023). Acknowledgement of federal support: Yes.
- Published: Rezapour, Mahdi and Khaled Ksaibati. "Modeling Crashes Involving Children, Finite Mixture Cumulative Link Mixed Model." *International Journal of Injury Control and Safety Promotion*, 28(4):494-502, 2021. DOI: [10.1080/17457300.2021.1964088](https://doi.org/10.1080/17457300.2021.1964088). Acknowledgement of federal support: Yes.
- Published: Rezapour, Mahdi and Khaled Ksaibati. "Partial Proportional Odds Model for Analyzing Pedestrian Crashes, Considering Threshold Heterogeneity by Scale and Proportional Odds Factor." *Traffic and Transportation (English version)*, 2021. Acknowledgement of federal support: Yes.
- Published: Rezapour, Mahdi and Khaled Ksaibati. "The Latent Class Multinomial Logit Model for Modeling Passenger Seat Belt Usage, Considering Seat Belt Stats of Drivers." *Future Transport*, 1(3), 2021. DOI: [10.3390/futuretransp1030029](https://doi.org/10.3390/futuretransp1030029). Acknowledgement of federal support: Yes.
- Published: Safazadeh, Faramarz, Pedro Romero, Abu Sufian Mohammad Asib, and Kevin VanFrank. "Practicality of Driven Parameters of Semicircular Bending Test at Intermediate Temperature." *ASCE Journal of Transportation Engineering, Part B: Pavements*, 147(3), 2021. DOI: [10.1061/JPEODX.0000284](https://doi.org/10.1061/JPEODX.0000284). Acknowledgement of federal support: Yes.
- Published: Seo, Junwon and Ibin Amatya. "Fatigue Load Testing of Full-Scale Dynamic Message Signs." *Engineering Structures*, 226(111357), 2021. DOI: [10.1016/j.engstruct.2020.111357](https://doi.org/10.1016/j.engstruct.2020.111357). Acknowledgement of federal support: Yes.

- Published: Seo, Junwon and Ibin Amatya. "Optimized Adhesive Performance in Electronic Transportation Sign Construction." MPC-21-442, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.
- Published: Seo, Junwon and Ibin Amatya. "Structural Performance of Dynamic Message Signs with Adhesive and Welded Connections." *Engineering Structures*, 252(112961), 2022. DOI:[10.1016/j.engstruct.2021.112961](https://doi.org/10.1016/j.engstruct.2021.112961). Acknowledgement of federal support: Yes.
- Published: Seo, Junwon, Ibin Amatya, Todd Letcher, and Euseok Jeong. "Welding versus Adhesive Bonding Strength Investigation." *Engineering Failure Analysis*, 129(105664), 2021. DOI:[10.1016/j.engfailanal.2021.105664](https://doi.org/10.1016/j.engfailanal.2021.105664). Acknowledgement of federal support: Yes.
- Published: Vachal, Kimberly. "Ridesourcing in Rural Communities, North Dakota Driver Survey." MPC-21-444, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2021. Acknowledgement of federal support: Yes.
- Published: Wu, Yangyang, Guangyang Hou, and Suren Chen. "Post-earthquake Resilience Assessment and Long-Term Restoration Prioritization of Transportation Network." *Reliability Engineering and System Safety*, 211(107612), 2021. DOI:[10.1016/j.res.2021.107612](https://doi.org/10.1016/j.res.2021.107612). Acknowledgement of federal support: Yes.
- Published: Zhao, Jingnan, Hao Wang, Pan Lu, and Jiaqi Chen. "Mechanistic-Empirical Analysis of Pavement Performance Considering Dynamic Axle Load Spectra Due to Longitudinal Unevenness." *Applied Sciences*, 12(5), 2022. DOI:[10.3390/app12052600](https://doi.org/10.3390/app12052600). Acknowledgement of federal support: Yes.
- Published: Zhou, Yirong, Xiaoyue Cathy Liu, and Tony Grubestic. "Unravel the Impact of COVID-19 on the Spatio-Temporal Mobility Patterns of Microtransit." *Journal of Transport Geography*, 97(103226), 2021. DOI:[10.1016/j.jtrangeo.2021.103226](https://doi.org/10.1016/j.jtrangeo.2021.103226). Acknowledgement of federal support: Yes.
- Published: Zlatkovic, Milan, Mohamed Ahmed, Zorica Cvijovic, and Sara Bashir. "Connected-Autonomous Traffic Signal Control Algorithms for Trucks and Fleet Vehicles." WY2103F, Wyoming Department of Transportation, December 2021.
- In Press: Alrejjal, Anas and Khaled Ksaibati. "Impact of Crosswinds and Truck Weight on Rollover Propensity When Negotiating Combined Curves." *International Journal of Transportation Science and Technology*, 2022. DOI:[10.1016/j.ijtst.2022.01.001](https://doi.org/10.1016/j.ijtst.2022.01.001). Acknowledgement of federal support: Yes.
- In Press: Ting, F. C. K. and G. S. Kern. "Finding the Bed Shear Stress on a Rough Bed Using the Log Law." *Journal of Waterway, Port, Coastal, and Ocean Engineering*, 2022. DOI:[10.1061/\(ASCE\)WW.1943-5460.0000707](https://doi.org/10.1061/(ASCE)WW.1943-5460.0000707). Acknowledgement of federal support: Yes.
- Under Review: Abdallah, A.M., M.E Ozbek, and R.A. Atadero. "Transferring Research Innovations in Bridge Inspection Planning to Bridge Inspection Practice: A Qualitative Study." *ASCE Practice Periodical on Structural Design and Construction*, 2022. Acknowledgement of federal support: Yes.
- Under Review: Abu Shanab, Israi and Andrew Sorensen. "Air Emission Pollutants of Different Partial Depth Concrete Bridge Deck Repair Techniques: A Comparative Study." *Journal of Structural Integrity and Maintenance*, February 2022. Acknowledgement of federal support: Yes.
- Under Review: Ampadu, Vincent and Khaled Ksaibati. "Automating the Updated Grade Severity Rating System (GSRS) using the Visual BASIC.net Programming Language." *International Journal of Software Engineering, Technology and Applications*, 2021. Acknowledgement of federal support: Yes.
- Under Review: Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Evaluating the Performance and Cost-Effectiveness of Air Disc Brakes and Air Drum Brakes with Respect to Variations in Grade and Speed." *SAE International Journal of Transportation Safety*, 2022. Acknowledgement of federal support: Yes.

- Under Review: Ampadu, Vincent, Muhammad Tahmidul Haq, and Khaled Ksaibati. "Comparing Grade Severity Rating System (GSRS) Models for Trucks Fitted with Drum Brakes Versus Disc Brakes." SAE International Journal of Transportation Safety, 2022. Acknowledgement of federal support: Yes.
- Under Review: Bridgelall, R. and D. Tolliver. "Railroad Reliability Engineering by Natural Language Processing." Reliability Engineering & System Safety, 2022. Acknowledgement of federal support: Yes.
- Under Review: Bridgelall, R., T. Askarzadeh, and D. Tolliver. "Introducing an Efficiency Index to Evaluate eVTOL Designs." Technology Forecasting and Social Change, 2022. Acknowledgement of federal support: Yes.
- Under Review: Bridgelall, Raj and Denver Tolliver. "Quantifying Supply Chain Disruption Risks from Railroad Accidents." International Journal of Production Economics, 2022. Acknowledgement of federal support: Yes.
- Under Review: Bridgelall, Raj, Bhavana Bhardwaj, Pan Lu, Denver Tolliver, and Neeraj Dhingra. "Signal Enhancement by Ensemble Processing to Detect Roadway and Railway Anomalies." IEEE Transactions on Intelligent Transportation Systems, 2020. Acknowledgement of federal support: Yes.
- Under Review: Cvijovic, Zorica, Milan Zlatkovic, Aleksandar Stevanovic, and Yu Song. "Signal Control Priority Operations for Vehicle Platoons and Transit in Connected Vehicle Environments." Journal of Intelligent Transportation Systems: Technology, Planning and Operations, 2022. Acknowledgement of federal support: Yes.
- Under Review: Dhingra, N., R. Bridgelall, P. Lu, J. Szmerekovsky, B. Bhardwaj. "Ranking Risk Factors in Financial Losses from Railroad Incidents: A Machine Learning Approach." Transportation Research Record: Journal of Transportation Research Board, 2022. Acknowledgement of federal support: Yes.
- Under Review: Farhadmanesh, Mohammad, Abbas Rashidi, Paul Schonfeld, Rakas Jasenka, and Nikola Markovic. "Aircraft Surface Movement and Operation Monitoring Systems in General Aviation and Commercial Airports: A State-of-the-Art Review." IET Intelligent Transport Systems, 2022. Acknowledgment of federal support: Yes.
- Under Review: Farhadmanesh, Mohammad, Chandler Cross, Abbas Rashidi, and Jessica Wempen. "Feasibility Study of Using Close-Range Photogrammetry as an Asset Inventory Tool at Public Transportation Agencies." ASCE Journal of Performance of Constructed Facilities, 2022. Acknowledgment of federal support: Yes.
- Under Review: Farhadmanesh, Mohammad, Nikola Markovic, and Abbas Rashidi. "An Automated Video-Based Air Traffic Surveillance System for Counting Light Aircraft Operations at Non-towered Airports." Transportation Research Part A: Policy and Practice, 2022. Acknowledgment of federal support: Yes.
- Under Review: Farhadmanesh, Mohammad, Nikola Markovic, and Abbas Rashidi. "General Aviation Aircraft Identification at Non-Towered Airports Using A Two-Step Computer Vision-based Approach." Journal of Transportation Engineering, Part A: Systems, 2022. Acknowledgment of federal support: Yes.
- Under Review: Fosu-Saah, B., Fagbade Isaiah A., M. Hafez, and K. Ksaibati. "Identifying the Trends of Pavement Research Using Accelerated Pavement Testing: A Machine Learning Approach." International Journal of Pavement Research and Engineering, 2021. Acknowledgement of federal support: Yes.
- Under Review: Fosu-Saah, B., M. Hafez, and K. Ksaibati. "Exploring Lessons Learned from Partnerships to Establish a Regional Accelerated Pavement Testing Facility in Wyoming." International Journal of Pavement Engineering, 2021. Acknowledgement of federal support: Yes.

- Under Review: Fosu-Saah, B., M. Hafez, and K. Ksaibati. "Integrating Deterministic and Fuzzy Concepts into the Benefit-Cost Analysis of Wyoming's Proposed Accelerated Pavement Testing Facility." *International Journal of Pavement Research and Engineering*, 2021. Acknowledgement of federal support: Yes.
- Under Review: Haq, Muhammad Tahmidul, Amirarsalan Mehrara Molan, and Khaled Ksaibati. "Evaluating Pedestrian Service of the New Super Diverging Diamond Interchange on Three Case Study Sites in Denver, Colorado." *ASCE Journal of Transportation Engineering, Part A: Systems*, 2021. Acknowledgement of federal support: Yes.
- Under Review: Haq, Muhammad Tahmidul, Vincent Ampadu, and Khaled Ksaibati. "An Investigation of Brake Failure related Crashes and Injury Severity on Mountainous Roadways in Wyoming." *Journal of Transportation Safety & Security*, 2022. Acknowledgement of federal support: Yes.
- Under Review: Irvin IV, Ben C., Jeffrey D. Niemann, Mark A. Perry, Kallie E. Bauer, and William T. McCormick III. "Parameter Estimation Methods for Models of Major Flood Events in Ungauged Mountain Basins in Colorado." *Journal of Hydrology: Regional Studies*, 2021. Acknowledgement of federal support: Yes.
- Under Review: Tazarv, Mostafa, Theodore Sjurseth, Evan Greeneway, Kallan Hart, Mathew LaVoy, and Nadim Wehbe. "Experimental Studies on Seismic Performance of Mechanically Spliced Precast Bridge Columns." *ASCE Journal of Bridge Engineering*, 2022. Acknowledgement of federal support: Yes.
- Under Review: Thapa, K.B., K.S. Katti, and D.R. Katti. "Influence of the Fluid Polarity on Shear Strength of Sodium Montmorillonite Clay: A Steered Molecular Dynamics Study." *Applied Clay Sciences*, 2021. Acknowledgment of federal support: Yes.
- Under Review: Thapa, K.B., K.S. Katti, and D.R. Katti. "Quasistatic Nanomechanical Evaluation of Expansive Clay during Swelling." *International Journal of Geomechanics*, 2021. Acknowledgment of federal support: Yes.
- Under Review: Yang, X., H. U. Ahmed, Y. Huang, and P. Lu. "Cumulatively Anticipative Car-following Model with Enhanced Safety for Autonomous Vehicles in Mixed Driver Environments." *Urban Technology*, 2022. Acknowledgement of federal support: Yes.
- Under Review: Zhang, Keping, Ranting Cui, Yuning Wu, and Xuan Zhu. "Selective Generation of Ultrasonic Non-propagating Modes Using Eletromechanical Impedance Method." *International Journal of Structural Health Monitoring*, 2023. Acknowledgment of federal support: Yes.
- Accepted: Haq, Muhammad Tahmidul, Amirarsalan Mehrara Molan, and Khaled Ksaibati. "Surrogate Safety Assessment of Two Versions of Super DDI Design: A Case Study in Denver, Colorado." *Journal of Transportation Safety & Security*, 2022. Acknowledgement of federal support: Yes.
- Accepted: Islam, M.S., K.W. Ng, and S.S. Wulff. "Improved Wave Equation Analysis of Steel H-Piles in Shales Considering LRFD and Economic Impact Studies." *Journal of Bridge Engineering*, 2022. Acknowledgement of federal support: No.
- Accepted: Masud, N., K.W. Ng, T. Johnson, and S.S. Wulff. "Driven Piles in Fine-Grained Soil-Based Intermediate GeoMaterials." *Journal of Bridge Engineering*, 2022. Acknowledgement of federal support: Yes.
- Submitted: Abdallah, Moatassem, Caroline M. Clevenger, and Shahryar Monghasemi. "Expanding the Capabilities of Business Commute Optimization System to Model Additional Transportation Alternatives and On-Demand Needs." MPC-22-449, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.



- Submitted: Bhaskar, Aditi S., Suren Chen, Guangyang Hou, and Kathryn L. Knight. "Assessing the Use of Dual-Drainage Modeling to Determine the Effects of Green Stormwater Infrastructure on Roadway Flooding and Traffic Performance." MPC-22-454, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Chen, Suren and Guangyang Hou. "Traffic Performance Assessment of Disrupted Roadway Networks Following Hazards." MPC-22-448, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Gong, Yaobang, Tanner Isoms, Pan Lu, Xianfeng Yang, and Aaron Wang. "Modeling the Impact of COVID-19 on Transportation at Later Stage of the Pandemic: A Case Study of Utah." Journal of Intelligent Transportation Systems, 2022. Acknowledgement of federal support: Yes.
- Submitted: Janson, B., M. Meshah, and W. Marshall. "Factors Affecting Severe Pedestrian Crash Percentages at Intersections in Colorado 2006 - 2018." Safer Communities, 2022. Acknowledgement of federal support: Yes.
- Submitted: Liu, Xiaoyue Cathy and Nima Haghighi. "Exploratory Modeling and Analysis for Automated Vehicles in Utah." MPC-22-452, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Liu, Xiaoyue Cathy, Yirong Zhou, and Nima Haghighi. "Impact of Mobility as a Service on Transit Access." MPC-22-453, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Sjurseth, Theodore, Evan Greeneway, Kallan Hart, Mathew LaVoy, Mostafa Tazarv, and Nadim Wehbe. "Mechanically Spliced Precast Bridge Columns." MPC-22-451, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Vachal, Kimberly, Sajad Ebrahimi and Kelly Bengtson. "Local Road Safety Practices and Perceptions in North Dakota." MPC-22-450, North Dakota State University - Upper Great Plains Transportation Institute, Fargo: Mountain-Plains Consortium, 2022. Acknowledgement of federal support: Yes.
- Submitted: Vachal, Kimberly. "Do Advisory Letters Engage Parents in Teen Driver Safety?" Accident Analysis and Prevention, 2021. Acknowledgement of federal support: Yes.
- Submitted: Wang, Y., Y. Chen, I.O. Ryzhov, X. Liu and N. Marković. "Resource Allocation Subject to Stochastic Failures: Application to Snow Plowing Operations in Utah." Transportation Science, 2022. Acknowledgement of federal support: Yes.
- Submitted: Zhang, Zhao, Yun Yuan, Xianfeng Yang, Mingcheng Li, and Pan Lu. "Empirical Study of the Effects of Physics-Guided Machine Learning on Freeway Traffic Flow Modeling: Model Comparisons Using Field Data." Transportation Research Part C: Emerging Technologies, 2022. Acknowledgement of federal support: Yes.

## Conference Papers

- Published: Cvijovic, Zorica, Milan Zlatkovic, Aleksandar Stevanovic, and Yu Song. "Signal Control Priority Operations for Vehicle Platoons and Transit through Connected Vehicle Technologies." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Published: Farhadmanesh, Mohammad, Abbas Rashidi, and Nikola Markovic. "Implementing Haar Cascade Classifiers for Automated Rapid Detection of Light Aircrafts at Local Airports." ASCE Computing in Civil Engineering 2021: Data, Sensing, and Analytics, 2021.
- Published: Farhadmanesh, Mohammad, Chandler Cross, Ali H. Mashhadi, Abbas Rashidi, and Jessica Wempen. "Use of Mobile Photogrammetry Method for Highway Asset Management." 100th Transportation Research Board Annual Meeting, 2021.
- Published: Farhadmanesh, Mohammad, Nikola Markovic, and Abbas Rashidi. "An Image Processing Method for Light Aircraft Tail Number Detection in General Aviation Airports." Transportation Research Board, 2022.
- Published: Humagain, P., A. Biehl, and P. A. Singleton. "Segmentation Analysis of Attribution of Responsibility over Air Pollution and Its Impacts on Travel Behavioral Responses." Presented at the 101th Transportation Research Board Annual Meeting, Washington, DC, January 2022.
- Published: Masud, Nafis B., Kam Ng, and Shaun S. Wulff. "New Static Analysis Methods for the Prediction of Driven Pile Resistance in Siltstone." ASCE Geo-Congress, Charlotte, NC, March 2022. DOI:[10.1061/9780784484029.009](https://doi.org/10.1061/9780784484029.009).
- Published: Masud, Nafis B., Kam Ng, Md. Shafiqul Islam, and Shaun S. Wulff. "Static and Dynamic Pile Load Tests on Steel H-Piles in Intermediate Geomaterials." ASCE Geo-Congress, Charlotte, NC, March 2022. DOI:[10.1061/9780784484029.010](https://doi.org/10.1061/9780784484029.010).
- Published: Oluwatuyi, Opeyemi E., Rasika Rajapakshage, Shaun S. Wulff, and Kam Ng. "Quantifying Geological Uncertainty Using Conditioned Spatial Markov Chains." ASCE Geo-Congress, Charlotte, NC, March 2022. DOI:[10.1061/9780784484036.043](https://doi.org/10.1061/9780784484036.043).
- Published: Sherry, Patrick and Jesse Owen. "Validation of AlertMeter® Mobile Phone Fatigue Assessment Device." Proceedings of the Future Technologies Conference, Volume 1, 2021. DOI:[10.1007/978-3-030-89906-6\\_33](https://doi.org/10.1007/978-3-030-89906-6_33).
- Published: Wang, Qinzheng, Xianfeng Yang, and Yun Yuan. "Signalized Arterial Origin-Destination (OD) Flow Estimation Using Connected Vehicle (CV) Trajectories: A Deep Learning without Ground-Truth Approach." 101st Transportation Research Board Annual Meeting, #22-01828, Washington, DC, 2022.
- Published: Yang, Xinyi, Yihao Ren, Liuqing Hu, Ying Huang, and Pan Lu. "Evaluating the Impact of Road Quality in Driving Behavior of Autonomous Vehicles." SPIE 11591, Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems, March 2021. DOI:[10.1117/12.2583641](https://doi.org/10.1117/12.2583641).
- Published: Zhou, Yirong, Cathy Liu, and Tony Grubestic. "Unraveling the Impact of the COVID-19 Pandemic on the Spatio-Temporal Mobility Patterns of Microtransit." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Published: Zlatkovic, Milan and Sarah Zlatkovic. "Assessment of Motorcycle Crash Severities and Contributing Factors in Wyoming: Multinomial Logistic Regression Modeling Approach." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Under Review: Jamal, MD and Ahmed Abdelaty "An Analysis of the Contractor's Project Performance based on Field Performance Rating." 12th International Conference on Construction in the 21st Century, Amman, Jordan, May 2022.



- Under Review: Jamal, MD, Ahmed Abdelaty, and Joseph Shrestha. "Construction Delay Analysis Using Daily Work Report Data for Short Construction Seasons." 9th International Conference on Construction Engineering and Project Management, Las Vegas, NV, June 2022.
- Under Review: Liu, P., C. Zhang, H. Li, M. Liang, and B. Dyer. "A Systematic Review and Analysis of the Application of Eye Tracking Technology on Construction Safety." International Conference on Construction Engineering and Project Management, June 2022.
- Under Review: Zhang, Keping, Ranting Cui, Yuning Wu, and Xuan Zhu. "Extracting Non-Propagating Modes in Waveguides via Electro-Mechanical Impedance Technique." ASNT Research Symposium, 2022.
- Accepted: Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Evaluating The Performance and Cost-Effectiveness of Air Disc Brakes and Air Drum Brakes with Respect to Variations in Grade and Speed." Proceedings of the 100th Transportation Research Board Annual Meeting, Washington, DC, 2021.
- Accepted: Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Incorporating Horizontal Curves and Roadway Geometry into the Automated Updated Grade Severity Rating System." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Accepted: Ampadu, Vincent, Shaun Wulff, and Khaled Ksaibati. "Estimating Average Annual Cost of Crashes on Wyoming Downgrades over a 20-year period using Time Series Analysis." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Accepted: Dangol, Ijan, Chris P. Pantelides, and Brandt Saxey. "Seismic Performance of Self-Centering Bridge Bent with Buckling Restrained Brace." ASCE Structures Congress, Atlanta, GA, April 2022.
- Accepted: Dangol, Ijan, Dipendra Thapa, and Chris P. Pantelides. "Performance Evaluation of Two Hybrid Bridge Bents Using Quasi-Static Cyclic Tests." 12th National Conference on Earthquake Engineering, Salt Lake City, UT, June/July, 2022.
- Accepted: Haq, Muhammad Tahmidul, Amirarsalan Mehrara Molan, and Khaled Ksaibati. "Assessing the Traffic Safety Performance of Two Versions of Super DDI Design: A Case Study in Denver, Colorado." Proceedings of the 101st Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Accepted: Majumder, S., C. Clevenger, M. Abdallah, M. Ghafoori and M. Russell. "Physiological Metrics across Construction Activity" Associated Schools of Construction 58th Annual Proceeding, Atlanta, GA, 2022.
- Accepted: Neupane, Suman, MJ Ameli, Ryan Barton, and Chris P. Pantelides. "Numerical Modeling of Bridge Piers used in Accelerated Bridge Construction." Proceedings of the 12th National Conference on Earthquake Engineering, Salt Lake City, UT, 2022.

## Presentations

- Abdallah, Abdelrahman. "Transferring Research Innovations in Bridge Inspection Planning to Bridge Inspection Practice: A Qualitative Study." TRB Research Innovation Implementation Management Committee Meeting, Washington, DC, January 2022.
- Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Evaluating The Performance and Cost-Effectiveness of Air Disc Brakes and Air Drum Brakes with Respect to Variations in Grade and Speed." 100th Transportation Research Board Annual Meeting, Washington, DC, January 2021.
- Ampadu, Vincent, Anas Alrijjal, and Khaled Ksaibati. "Incorporating Horizontal Curves and Roadway Geometry into the Automated Updated Grade Severity Rating System." 101st Transportation Research Board Annual Meeting, Washington, DC, January 2022.
- Ampadu, Vincent, Shaun Wulff, and Khaled Ksaibati. "Estimating Average Annual Cost of Crashes on Wyoming Downgrades over a 20-Year Period Using Time Series Analysis." 101st Transportation Research Board Annual Meeting, Washington, DC, January 2022.
- Bartlett, Steven. "Application of Lightweight Fills in Civil and Transportation Engineering." Presentation to the American Society of Civil Engineers, Kansas City, MO, January 2022.
- Bridgelall, R. and A. Reinholz. "UAS Research at UGPTI." UAS Summit & Expo 2021, UAS Magazine and BBI International, Exhibit, Grand Forks, ND, 2021.
- Bridgelall, R. and D. Tolliver. New Drone Related Research. Meeting of the Advisory Council, Upper Great Plains Transportation Institute, 2021.
- Chen, Jianli. "Mobile Phone-Based Artificial Intelligence Development for Maintenance Asset Management." UDOT Progress Meeting Presentation, Dec 2021 and Mar 2022.
- Cross, Chandler, Mohammad Farhadmanesh, and Abbas Rashidi. "Assessing Close-Range Photogrammetry as an Asset Management Tool at UDOT Divisions." UDOT Progress Meeting Presentation, August 2020.
- Cvijovic, Zorica, Milan Zlatkovic, Aleksandar Stevanovic, and Yu Song. "Conditional Transit Signal Priority in Connected Vehicles Environment." 17th Annual Colorado Transportation Symposium, October 2021.
- Cvijovic, Zorica, Milan Zlatkovic, Aleksandar Stevanovic, and Yu Song. "Signal Control Priority Operations for Vehicle Platoons and Transit through Connected Vehicle Technologies." 101st Transportation Research Board Annual Meeting, Washington, DC, January 2022.
- Farhadmanesh, Mohammad, Abbas Rashidi, and Nikola Markovic. "A Vision-Based Light-Aircraft Operation Detection System Using Haar Cascade." Computing in Civil Engineering Conference, September 2021.
- Farhadmanesh, Mohammad, Abbas Rashidi, and Nikola Markovic. "Image Processing and Machine Learning for Automated Detection of Aircraft at Utah Airports." UDOT Progress Meeting Presentation, June 2021.
- Farhadmanesh, Mohammad, Nikola Markovic, and Abbas Rashidi. "An Image Processing Method for Light Aircraft Tail Number Detection in General Aviation Airports." 101st Transportation Research Board Annual Meeting, Aviation System Planning Committee, January 2022.
- Fitzgerald, Robert and Farnoush Banaei-Kashani. "System-Optimal Ride-Sharing." National Renewable Energy Laboratory, Golden, CO, February 2022.
- Gong, Yaobang, Tanner Isom, Xianfeng Yang, Pan Lu, and Aaron Wang. "Modeling the Impact of the COVID-19 on Transportation at Later Stage of the Pandemic: A Case Study of Utah." Presentation number: TRBAM-22-01838, Transportation Research Board Annual Meeting, Washington, DC, 2022.

- Hafez, M. "A Regional Road Track Pavement Testing Facility on I-80 in Wyoming." Rocky-Mountain Asphalt User/Producer Annual Meeting, Tucson, AZ, October 2021.
- Haq, Muhammad Tahmidul, Amirarsalan Mehrara Molan, and Khaled Ksaibati. "Assessing the Traffic Safety Performance of Two Versions of Super DDI Design: A Case Study in Denver, Colorado." 101st Transportation Research Board Annual Meeting, Washington, DC, January 2022.
- Hoopman, Doug and Anthony Hoaby. "CDL (Commercial Drivers License) Fundamentals." Multiple presentations to the MHA Nation, ND, during this reporting period.
- Hua, Guanghui. "Removal of E. Coli from Stormwater Runoff Using Filtration with Recycled Steel Byproduct Media." Big Sioux River Water Summit, Sioux Falls, SD, December 2021.
- Johnson, Matthew, Ed Ryen, and Brad Wentz. "GRIT (Geographical Road Inventory Tool) Training." Presentation scheduled for the MHA Nation, March 2022.
- Mamun, Abdullah Al, Pedro Romero, and Abu Sufian Mohammad Asib. "Laboratory Simulation of Hot Mix Asphalt in a Cold Region: An Artificial Intelligence–Based Approach." Paper TRBAM-22-04180. Proceedings of the Transportation Research Board, Washington, DC, January 2022.
- Ng, Kam. "A Recent Development on Driven Piles in Intermediate Geomaterials." ASCE 6th Annual Live Streaming Web Conference, Deep Foundation Session, Geo-Institute, December 2021.
- Niemann, J.D., B.C. Irvin IV, D. Woolridge, M.A. Perry, K.E. Bauer, and W.T. McCormick III. "Proposed Updates to Colorado Dam Safety's Guidelines for Watershed Modeling." Water Science and Engineering Seminar Series, Fort Collins, CO, February 2022.
- Olevson, Brenden, Abdoul Kouanda, Peng Dai, Kyungnan Min, Christopher Schmit, and Guanghui Hua. "Performance Evaluation of Pilot Scale Filter Using Recycled Steel Byproducts in Removing Escherichia Coli from Stormwater." Virtual Conference on the Environment, Air & Waste Management Association Upper Midwest Section, November 2021.
- Ototivo, R., M. Shirgaokar, and W. Marshall. "Accessible Transportation: Investigating the Travel Experiences of People with Disabilities." Paper presented at the Association of the Collegiate Schools of Planning Annual Conference, October 2021.
- Riasat, Nazia, Yun Zhou, Kimberly Vachal, and Megan Orr. "Teen Driver Training and Safety Outcomes with Graduated Licensing Policy." Western Regional Science Association, Annual Conference, Phoenix, AZ, 2022.
- Sherry, Patrick. "Leadership & Safety Culture." MTC Leadership Conference, San Francisco, CA, February 2022.
- Sherry, Patrick. "Measuring Safety Culture." International Conference on Knowledge, Culture, and Change in Organizations, Auckland, New Zealand, January 2022.
- Sherry, Patrick and A. Pusavat. "Preventing Railroad Suicide by Trespassers." Metrolink Safety Conference, Pomona, CA, December 2021.
- Singleton, P. A. "Pedestrian Traffic Signal Data: Models and Methods for Pedestrian Traffic Monitoring and Other Applications." 101st Annual Meeting of the Transportation Research Board, Washington, DC, January 2022
- Singleton, P. A. "Pedestrian Volume Data from Traffic Signals: Models and Methods for Monitoring, Planning, Safety, and Other Applications." Graduate/Research Seminar Series, Parks College of Engineering, Aviation and Technology, Saint Louis University, St. Louis, MO, February 2022.
- Singleton, P. A. "Safety and Planning Uses for Pedestrian Volumes Estimated from Traffic Signal Data." Utah Department of Transportation Annual Conference, Sandy, UT, October 2021.
- Wang, Yinhu, Liu, Cathy and Markovic, Nikola. "Snowplow Route Optimization for Northern Utah." UDOT Research Day Conference, Salt Lake City, Utah, October 2021.

- Yuan, Yun, Qinzhen Wang, Xianfeng Yang, and Pan Lu. "Freeway Vehicle Trajectory Reconstruction Using Physics Regularized Gaussian Process." Presentation number: TRBAM-22-03520, Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Yuan, Yun, Qinzhen Wang, Xianfeng Yang, and Pan Lu. "Physics Regularized Streaming Learning for Freeway Traffic State Estimation." Presentation number: TRBAM-22-03416, Transportation Research Board Annual Meeting, Washington, DC, 2022.
- Zhao, Jingnan, Hao Wang, and Pan Lu. "Impact of Traffic Loading on Pavement Performance: Traditional Regression Model and Machine Learning Method." Transportation Research Board Annual Meeting, Washington, DC, 2021.
- Zlatkovic, Milan and Sarah Zlatkovic. "Assessment of Motorcycle Crash Severities and Contributing Factors in Wyoming: Multinomial Logistic Regression Modeling Approach." 101st Transportation Research Board Annual Meeting, Washington, DC, January 2022.