

VALERIAN KWIGIZILE, Ph. D., P.E., M. ASCE

Professor, Department of Civil and Construction Engineering
Associate Director, Transportation Research Center for Livable Communities (TRCLC)

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1.1 EDUCATION

- **Ph. D. in Civil & Environmental Engineering, University of Nevada Las Vegas, 2007**
Major Area: Transportation Engineering
Dissertation: *Incorporating Spatial Characteristics in Travel Demand Models*
Advisor: Hualiang (Harry) Teng, Ph. D.
- **MSc in Civil Engineering, Florida State University, Tallahassee, 2004**
Major Area: Transportation Engineering
Thesis: *Connectionist Approach to Developing Highway Vehicles Classification Table for Use in Florida*
Advisor: Ren Moses, Ph. D., P. E.
- **B. S. in Civil Engineering (Honors), University of Dar Es Salaam, Tanzania, 2001**

1.2 PROFESSIONAL EXPERIENCE

08/23-present: Professor, Department of Civil and Construction Engineering, Western Michigan University, MI, USA.

10/13-present: Associate Director, Transportation Research Center for Livable Communities (TRCLC), Western Michigan University, MI, USA.

08/16-07/23: Associate Professor, Department of Civil and Construction Engineering, Western Michigan University, MI, USA.

08/11-07/16: Assistant Professor, Department of Civil and Construction Engineering, Western Michigan University, MI, USA.

08/08-08/11: Assistant Professor, Department of Civil Engineering, West Virginia University Institute of Technology, WV, USA.

01/08-07/08: Post-Doctoral Researcher, Department of Civil and Environmental Engineering, University of Nevada, Las Vegas, NV, USA.

01/05-12/07: Graduate Research Assistant, University of Nevada, Las Vegas, NV.

01/03-12/04: Graduate Research Assistant, Florida State University Tallahassee, FL.

06/01-12/02: Project Engineer, MILO Construction Company LTD, Dar Es Salaam, Tanzania.

10/96-09/97: Laboratory Technician, Gauff Ingenieure (JBG) Consulting Engineers, Dar Es Salaam, Tanzania.

1.3 **RESEARCH INTERESTS**

- Motorized traffic safety, simulation and operations
- Non-motorized traffic safety
- Traffic law enforcement
- Intelligent transportation systems (ITS)
- Transportation modeling and planning
- GIS application in transportation engineering

1.4 **PROFESSIONAL MEMBERSHIP AND AFFILIATIONS**

- Registered Professional Engineer (P.E.) #18947, West Virginia
- Member, Institute of Transportation Engineers (ITE)
- Member, American Society of Civil Engineers (ASCE)
- Member, American Society for Engineering Education (ASEE)
- Member, The Honor Society of Phi Kappa Phi

1.5 **RESEARCH GRANTS AND AWARDS**

1.5.1 **External Research Funding**

Over his career, Professor Kwigizile has led (as Principal Investigator or Co-Principal Investigator) externally funded research projects totaling over **US\$ 9 million**.

Research Project Title	Sponsor	Project Period	Amount
Development of Overtime Traffic Enforcement Performance Standards for Michigan (Part II)	Michigan Office of Highway Safety Planning (OHSP)	10/2012-04/2013	\$44,847
Development of Overtime Traffic Enforcement Performance Standards for Michigan (Part I)	Michigan Office of Highway Safety Planning (OHSP)	04/2012-09/2012	\$60,000
*Development of Performance Measures for Non-Motorized Dynamics	Michigan Department of Transportation (MDOT)	10/2012-12/2013	\$201,851
*Costs and Benefits of MDOT Intelligent Transportation System Deployments	Michigan Department of Transportation (MDOT)	06/2013-04/2015	\$233,395
Development of Overtime Traffic Enforcement Performance Standards for Michigan (Part III)	Michigan Office of Highway Safety Planning (OHSP)	05/2013-09/2013	\$25,399
Enforcement Data Analysis and Approach for Selecting Agencies for Funding – FY2014	Michigan Office of Highway Safety Planning (OHSP)	10/2013-09/2014	\$73,496

Research Project Title	Sponsor	Project Period	Amount
*University Transportation Research Center for Livable Communities	US Department of Transportation (USDOT)	09/2013-09/2018	\$5,634,941
Evaluation of Michigan's Engineering Improvements for Older Drivers	Michigan Department of Transportation (MDOT)	10/2013-09/2015	\$295,582
Evaluating Michigan Commercial Vehicle Enforcement Strategies and Facilities	Michigan Department of Transportation (MDOT)	05/2013-03/2015	\$268,560
Enforcement Data Analysis for Overtime Traffic Enforcement - FY2015	Michigan Office of Highway Safety Planning (OHSP)	10/2014-09/2015	\$72,999
Comprehensive Evaluation of Pedestrian and Bicycle Crashes and Causes in Michigan	Michigan Office of Highway Safety Planning (OHSP)	02/2015-09/2015	\$99,614
Evaluation of Delineation Practices in Michigan	Michigan Department of Transportation (MDOT)	10/2015-04/2017	\$159,657
Association of Michigan's Older Adult Crashes with Roadway Features	Michigan Department of Transportation (MDOT)	10/2015-03/2017	\$209,833
FY2016 Enforcement Data Analysis for Overtime Traffic Enforcement	Michigan Office of Highway Safety Planning (OHSP)	10/2015-09/2016	\$104,015
Developing Michigan Truck Strategic Plan for 2016-2019	Michigan Office of Highway Safety Planning (OHSP)	11/2015-09/2016	\$99,542
Evaluating the Impacts of Speed Limit Changes on Identified Case Studies	Michigan Department of Transportation (MDOT)	03/2016-12/2017	\$161,802
FY2017 Enforcement Data Analysis for Overtime Traffic Enforcement	Michigan Office of Highway Safety Planning (OHSP)	10/2016-09/2017	\$129,868
An Investigation of the Relationship between Crash Occurrence, Safety Belt Use, and Overtime Traffic Enforcement	Michigan Office of Highway Safety Planning (OHSP)	10/2016-09/2018	\$95,780
*Developing Michigan Transportation Construction Price Index	Michigan Department of Transportation (MDOT)	01/2020-04/2021	\$97,244
Quantifying Effectiveness and Impacts of Digital Message Signs on Traffic Flow	Michigan Department of Transportation (MDOT)	11/2019-03/2022	\$172,466

Research Project Title	Sponsor	Project Period	Amount
*Competitive Bidding in Construction Contracting	Michigan Department of Transportation (MDOT)	01/2021-09/2022	\$105,899
*Effective Pedestrian/Non-Motorized Crossing Enhancements Along Higher Speed Corridors	Michigan Department of Transportation (MDOT)	10/2021-09/2023	\$160,278
*Examination of Lighting Practices at Crosswalks Corridors	Michigan Department of Transportation (MDOT)	04/2023 - 01/2025	\$170,638.15
*Improving Cost Estimation and Budget Planning with New Michigan Highway Construction Cost Index	Michigan Department of Transportation (MDOT)	05/2023-12/2024	\$116,284.36
*Evaluation of MDOT's Methodology for Estimating Work Zone User Delay Times & Costs	Michigan Department of Transportation (MDOT)	05/2023-02/2026	\$347,947

**As Co-PI*

1.5.2 Internal Faculty Grants

Professor Kwigizile has also secured grants from Western Michigan University to support his scholarly activities.

Project Title	Source	Dates	Amount
Improving Road Safety Decision-Making Process: An Exploratory Study	Western Michigan University Office of Vice President for Research	07/2012-06/2013	\$9,482
The Impact of Road Users Diversity on Traffic Safety and Operation	Western Michigan University Office of Vice President for Research	07/2012-12/2013	\$2,468

1.5.3 Internal and External Student Research Awards

Professor Kwigizile has guided students to secure internal and external research scholarships as shown below:

Student Name	Award Title	Sponsor	Dates	Amount
Elisha Wankogere	2013 Eisenhower Graduate Fellowship	US Federal Highway Administration (FHWA)	7/1/12-6/30/13	\$5,000
Veronica Maslanka	WMU Undergraduate Research Excellence Award	WMU - Office of Vice President for Research (OVPR)	Spring 2014	\$500
Brenda Hodgell	WMU Undergraduate Research Excellence Award	WMU - Office of Vice President for Research (OVPR)	Fall 2014	\$500

1.6 PUBLICATIONS

Over his career, Professor Kwigizile has authored/co-authored more than 85 peer-reviewed publications in journals and conference proceedings. He also has authored/co-authored more than 20 research reports.

1.6.1 Peer-Reviewed Journal Publications

1. Qawasmeh, B., Kwigizile, V., and Oh, J. (2023). Performance and safety effectiveness evaluation of mini-roundabouts in Michigan. *Journal of Engineering and Applied Science* (2023) 70:36. doi: <https://doi.org/10.1186/s44147-023-00208-6>.
2. Kwayu, K., Kwigizile, V., Lee, K., Oh, J., and Nelson, T. (2022). Automatic topics extraction from crowdsourced cyclists near-miss and collision reports using text mining and Artificial Neural Networks. *International Journal of Transportation Science and Technology*. Vol. 11, No. 4.
3. Alhomaiddat, F., Abushattal, M., Kwayu, K., and Kwigizile, V (2022). Investigating the interaction between age and liability for crashes at stop-sign-controlled intersections. *Transportation Research Interdisciplinary Perspectives*, Volume 14, June 2022, 100612. doi: <https://doi.org/10.1016/j.trip.2022.100612>.
4. Kwigizile, V., Kwayu, K., and Oh, J. (2022). Leveraging the spatial-temporal resolution of crowdsourced cycling data to improve the estimation of hourly bicycle volume. *Transportation Research Interdisciplinary Perspectives*, Volume 14 (2022) 100596. doi: <https://doi.org/10.1016/j.trip.2022.100596>.
5. Hasan, M., Oh, J., and Kwigizile, V. (2021). Exploring the trend of walkability measures by applying hierarchical clustering technique. *Journal of Transport & Health* Volume 22, September 2021, 101241. <https://doi.org/10.1016/j.jth.2021.101241>.
6. Kwayu, K., Lyimo, S, and Kwigizile, V. (2021). Characteristics of cyclists using fitness tracker apps and its implications for planning of bicycle transport systems. *Case Studies on Transport Policy*. June 2021. DOI: <https://doi.org/10.1016/j.cstp.2021.06.004>.
7. Liu, H., Kwigizile, V., and Huang, W. (2021). Holistic Framework for Highway Construction Cost Index Development Based on Inconsistent Pay Items. *ASCE Journal of Construction Engineering and Management*/Volume 147 Issue 7 - July 2021. DOI: [https://doi.org/10.1061/\(ASCE\)CO.1943-7862.0002080](https://doi.org/10.1061/(ASCE)CO.1943-7862.0002080).
8. Kwayu, K.M., Kwigizile, V., Lee, K, Oh, J.-S., (2020). Discovering Latent Themes in Traffic Fatal Crash Narratives Using Text Mining Analytics and Network Topology. *Accident Analysis and Prevention*, Volume 150, February 2021. DOI: <https://doi.org/10.1016/j.aap.2020.105899>
9. Kwayu, K., Kwigizile, V., and Oh, J. (2020). Assessing the safety impacts of raising the speed limit on Michigan freeways using the multilevel mixed-effects negative binomial model. *Journal of Traffic Injury Prevention*. DOI: 10.1080/15389588.2020.1773450
10. Feizi, A., Joo, S, Kwigizile, V, and Oh, J. (2020). A Pervasive Framework Toward Sustainability and Smart Growth: Asseesing Multi-Faceted Transportation Performance Measures for Smart Cities. *Journal of Transport & Health* Volume 19, December 2020, 100956. DOI: <https://doi.org/10.1016/j.jth.2020.100956>.

11. Kwayu, K., Kwigizile, V., and Oh, J. (2020). Development of systemwide pedestrian safety performance function using stratified random sampling and a proxy measure of pedestrian exposure. *International Journal of Injury Control and Safety Promotion*. DOI: 10.1080/17457300.2020.1791905.
12. Kwayu, K., Kwigizile, V., Zhang, J., and Oh, J. (2020). Semantic N-Gram Feature Analysis and Machine Learning–Based Classification of Drivers' Hazardous Actions at Signal-Controlled Intersections. *Journal of Computing in Civil Engineering*, Volume 34, Issue 4 - July 2020. DOI: [https://doi.org/10.1061/\(ASCE\)CP.1943-5487.0000895](https://doi.org/10.1061/(ASCE)CP.1943-5487.0000895).
13. Rodriguez, L., Kwigizile, V., Oh, J., and Gates, T. (2020). Presence of Additional Safety Belt Enforcement Increases Safety Belt Use by Drivers. *Journal of Transportation Research Record 1-7*, National Academy of Sciences:Transportation Research Board 2020. DOI: <https://doi.org/10.1177/0361198120908225>.
14. Alhomaiddat, F., Kwigizile, V., and Oh, J. (2020). How does an increased freeway speed limit influence the frequency of crashes on adjacent roads? *Journal of Accident Analysis & Prevention*, Volume 136, 2020: DOI: <https://doi.org/10.1016/j.aap.2020.105433>
15. Kwayu, K., Kwigizile, V., and Oh, J. (2019). Evaluation of pedestrian crossing-related crashes at undesignated midblock locations using structured crash data and report narratives. *Journal of Transportation Safety & Security*, DOI: 10.1080/19439962.2019.1679306.
16. Boateng, R., Kwigizile, V., and Oh, J. (2019). A justification for pedestrian countdown signals at signalized intersections: The safety impact on senior motorists. *Journal of Transport & Health*, Volume 14. DOI: <https://doi.org/10.1016/j.jth.2019.100617>.
17. Feizi, A., Oh, J., Kwigizile, V. and Joo, S. (2019). Cycling Environment Analysis by Bicyclists' Skill Levels Using Instrumented Probe Bicycle (IPB), *International Journal of Sustainable Transportation*, DOI: 10.1080/15568318.2019.1610921.
18. Boateng, R., Kwigizile, V., and Oh, J. (2018). A comparison of safety benefits of pedestrian countdown signals with and without pushbuttons in Michigan. *Traffic Injury Prevention*, Volume 19, Section 6, pp:588-593. doi: 10.1080/15389588.2018.1462493.
19. Kidando, E., Kitali, A. E., Lyimo, S. M., Sando, T., Moses, R., Kwigizile, V., and Chimba, D. (2019). Applying Probabilistic Model to Quantify Influence of Rainy Weather on Stochastic and Dynamic Transition of Traffic Conditions. *Journal of Transportation Engineering, Part A: Systems*, Volume 145 Issue 5 - May 2019.
20. Oh, J. S., Kwigizile, V., & Dolatsra, H. (2018). Analysis of Influential range for Intersection Crashes. *The Journal of Eastern Asia Society for Transportation Studies*, 12, 2333–2344. doi: <https://doi.org/10.11175/easts.12.2333>
21. Mulokozi, E., Teng, H., Kwigizile, V., Chimba, D., and Sando, T. (2018). Modeling Dynamics of Vehicle-based Performance Measures of High-Occupancy Vehicle (HOV) and General-Purpose Traffic Systems. *ASCE Journal of Transportation Engineering, Part A: Systems*. Volume 144, Issue 2, February 2018.
22. Wankogere, E., Kwigizile, V., Oh, J., and Ikononov, P. (2017). Comparison of Driver Navigation at Turbo Roundabouts and Modern Two-Lane Roundabouts: A Simulation

- Study. *Transportation Research Record: Journal of the Transportation Research Board*, Volume 2637, pp. 89-98. DOI: 10.3141/2637-11.
23. Alzuhairi, A., Aldhaheri, M., Sun, Z., Oh, J. and Kwigizile, V. (2016). Vehicular emissions and concentrations in school zones: A case study. *Journal of Central South University*, July 2016, Volume 23, Issue 7, pp 1778–1785.
 24. Fink, J., Kwigizile, V., and Oh, J. (2016). Quantifying the Impact of Adaptive Traffic Control Systems on Crash Frequency and Severity: Evidence from Oakland County, Michigan. *Journal of Safety Research*, Volume 57, pp. 1-7. doi: [10.1016/j.jsr.2016.01.001](https://doi.org/10.1016/j.jsr.2016.01.001).
 25. Clark, M., Oh, J., Kwigizile, V., and Castle, C. (2015). Awareness and Utilization of Advanced Traveler Information by Active Seekers. *Transportation Research Record*, Journal of the Transportation Research Board (TRB). No. 2496, pp. 36-44.
 26. Angel, M.L., Sando, T., Chimba, D., and Kwigizile, V. (2015). Effects of Rain on Traffic Operations on Florida Freeways. *Transportation Research Record*, Journal of the Transportation Research Board, Volume 2440, pp. 51-59.
 27. Kwigizile, V., Sando, T. and Chimba, D (2014). Understanding the Role of Alcohol and Drugs on Bicyclist Injury Severity. *Advances in Transportation Studies-An International Journal*. Vol. 34, Section A, pp. 43-54.
 28. Kwigizile, V., Mulokozi, E., Teng, H., Xu, X. and Ma, C. (2014). Investigation of the Impact of Corner Clearance on Urban Intersection Crash Occurrence. *The Journal of Transportation and Statistics*. Vol.10. No. 1. pp. 35-48.
 29. Xu, X., Teng, H., Kwigizile, V., and Mulokozi, E. (2014). Modeling Signalized Intersection Safety with Corner Clearance. *ASCE Journal of Transportation Engineering*. Vol. 140, No. 6, 10.1061/(ASCE)TE.1943-5436.0000636, 04014016.
 30. Chimba, D., Sando, T., Kwigizile, V., and Kutela, B. (2014). Modeling Bus Crashes Using Zero-Inflated Model. *The Journal of Transportation Statistics*. Vol.10. No. 1. pp. 1-14.
 31. Xu, X., Kwigizile, V., and Teng, H. (2013). Identifying Access Management Factors Associated With Safety of Urban Arterials Mid-Blocks: A Panel Data Simultaneous Equation Models Approach. *The Journal of Traffic Injury Prevention*. Volume 14, pp. 734–742.
 32. Kwigizile, V., Sando, T. and Chimba, D (2011). Inconsistencies of Ordered and Unordered Probability Models for Pedestrian Injury Severity. *Transportation Research Record*, the Transportation Research Board (TRB) Journal. No. 2264, pp.110-118.
 33. Sando, T., Chimba, D., Kwigizile, V., and Walker, H. (2011). Safety Analysis of Continuous Green Through-Lane Intersections. *Journal of Transportation Research Forum*. Vol. 50, No. 1, pp. 5-17.
 34. Kwigizile, V., Chimba, D. and Sando, T (2011). A Cross-Nested Logit Model for Trip Type-Mode Choice: An Application. *Advances in Transportation Studies-An International Journal*, Volume 23, Section A (2011), pp. 29-40.

35. Teng, H., Kwigizile, V., Xie, G., Kaseko, M. and Gibby, A. R. (2010). "The Impacts of Emergency Vehicle Signal Preemption on Urban Traffic Speed". *The Journal of the Transportation Research Forum*, Volume 49, Number 1, Spring 2010, pp. 69-79.
36. Chimba, D., Sando, T. and Kwigizile, V (2010). Effect of Bus Size and Operation to Crash Occurrences. *Journal of Accident Analysis and Prevention*, 42 (2010), pp. 2063–2067.
37. Kwigizile, V. and Teng, H. (2009). Comparison of Methods for Defining Geographical Connectivity for Variables of Trip Generation Models, *ASCE Journal of Transportation Engineering*. Volume 135, No. 7, pp. 454-466.
38. Yao, J., Rakha, H., Teng, H., Kwigizile, V., and Kaseko, M. (2009). Estimating Highway Capacity Considering Two-Regime Models, *ASCE Journal of Transportation Engineering*. Volume 135, No. 9, pp. 670-676.
39. Teng, H., Xu, X., Li, X., Kwigizile, V., and Gibby, R. (2009). Evaluation of Speed Monitoring Displays for Work Zones in Las Vegas, Nevada. *Transportation Research Record*, Volume 2107, pp. 46-56.
40. Teng, H., V. Kwigizile, M. Karakouzian, D. E. James, and V. Etyemezian (2008): Investigation of the AP-42 Sampling Method. *Journal of Air & Waste Management Association*. Vol. 58:1422–1433
41. Teng, H., Kwigizile, V., James, D. E., and Merle, R. (2006) Identifying Influencing Factors On Paved Roads Silt Loading, *Journal of the Air & Waste Management Association*, Vol. 57, No. 7, pp.778-784.
42. Kwigizile, V., Mussa, R., and Selekwa, M. (2005) Connectionist Approach to Improving Highway Vehicle Classification Schemes – The Florida Case. *Transportation Research Record*, Volume 1917, pp. 182-189.
43. Mussa, R., Kwigizile, V., and Selekwa, M.F. (2006) Probabilistic Neural Networks Application for Vehicle Classification. *ASCE Journal of Transportation Engineering*, Volume 132, Number 4, pp. 293-302.
44. Selekwa, M.F., Kwigizile, V., and Mussa, R. (2005) Setting Up a Probabilistic Neural Network for Classification of Highway Vehicles. *International Journal of Computation Intelligence and Applications*, Volume 5, Number 4, pp. 411-423.

1.6.2 Peer-Reviewed Full Paper Conference Presentations and Proceedings

1. Kwigizile, V., Mwende, S., Abushattal, M., Kwayu, K., and Oh, J. (2023). Weather-Related Message Content on Dynamic Message Signs: Does it Matter in Regulating Speed of Drivers? Presented at the 102nd Annual Meeting of the Transportation Research Board (TRB), January 2023, Washington, D.C.
2. Abushattal, M., Kwigizile, V., Oh, J., and Van Houten, R. (2023). An Assessment of the Driver's Cognitive Workload Associated with Various Cyclist Accommodations in Work Zones. Presented at the 102nd Annual Meeting of the Transportation Research Board (TRB), January 2023, Washington, D.C.

3. Hassan, M., Oh, J., and Kwigizile V. (2021). Exploring the Relationship between Human Walking Trajectories and Physical-Visual Environmental: An Application of Artificial Intelligence and Spatial Analysis. Presented at the 100th Annual Meeting of the Transportation Research Board (TRB), January 2021, Washington, D.C. (Virtually).
4. Hassan, M., Oh, J., and Kwigizile V. (2021). Impact of Walking Environment on the Walkability Measures. Presented at the 100th Annual Meeting of the Transportation Research Board (TRB), January 2021, Washington, D.C. (Virtually).
5. Kwayu, K., Kwigizile, V., Oh, J and Nelson, T. (2021). Examining Crowdsourced Cyclists Near-Miss and Collision Events Using Text Mining and Artificial Neural Networks. Presented at the 100th Annual Meeting of the Transportation Research Board (TRB), January 2021, Washington, D.C. (Virtually).
6. Feizi, A., Joo, S, Kwigizile, V, and Oh, J. (2020). A Pervasive Framework Toward Sustainability and Smart Growth: Assessing Multi-Faceted Transportation Performance Measures for Smart Cities. Presented at the 99th Annual Meeting of the Transportation Research Board (TRB), January 2020, Washington, D.C.
7. Kwayu, K., Kwigizile, V, and Oh, J. (2020). Leveraging Crowdsourced Data to Improve Estimation of Bicycle Counts. Presented at the 99th Annual Meeting of the Transportation Research Board (TRB), January 2020, Washington, D.C.
8. Rodriguez, L., Kwigizile, V, Oh, J., and Gates, T. (2020). What Is the Impact Provided by the Presence of Additional Safety Belt Enforcement to Driver Safety Belt Use? Presented at the 99th Annual Meeting of the Transportation Research Board (TRB), January 2020, Washington, D.C.
9. Alhomaiddat, F., Kwigizile, V, and Oh, J. (2019). Impacts of Freeway Speed Limit on Operation Speed of Adjacent Arterial Roads. Presented at the 98th Annual Meeting of the Transportation Research Board (TRB), January 2019, Washington, D.C.
10. Feizi, A., Mastali, M., Van Houten, R. Oh, J., and Kwigizile, V. (2019). Effects of Bicycle Passing Distance Law on Drivers' Behavior. Presented at the 98th Annual Meeting of the Transportation Research Board (TRB), January 2019, Washington, D.C.
11. Alhomaiddat, F., Kwigizile, V, and Oh, J. (2019). Cycling Risks and Needs Perception of Different Skill Levels and Age Groups. Presented at the 98th Annual Meeting of the Transportation Research Board (TRB), January 2019, Washington, D.C.
12. Kwayu, K., Kwigizile, V., Oh, J., Cho, H., and Bott, M. (2018). Evaluating the Impact of Raising Speed Limit on Urban Freeways Using Mixed Effects Negative Binomial Regression. Accepted for presentation at the 97th Annual Meeting of the Transportation Research Board (TRB), January 2018, Washington, D.C.
13. Kidando, E., Kitali, A., Lyimo, S., Sando, T., Moses, R., Kwigizile, V., and Chimba, D. (2018). Exploring the Influence of Rainfall on Stochastic Evolution of Traffic Conditions. Accepted for presentation at the 97th Annual Meeting of the Transportation Research Board (TRB), January 2018, Washington, D.C.
14. Feizi, A., Kostich, B. W., Oh, J., Kwigizile, V., and Shinhye, J. (2018). Cycling Environment Analysis by Bicyclists' Skill Levels Using Instrumented Probe Bicycle

- (IPB). Accepted for presentation at the 97th Annual Meeting of the Transportation Research Board (TRB), January 2018, Washington, D.C.
15. Zhang, J., Kwigizile, V., and Oh, J. (2016). Automated Hazardous Action Classification Using Natural Language Processing and Machine-Learning Techniques. 16th COTA International Conference of Transportation, July 6-9, 2016, Shanghai, China.
 16. Machumu, K. S., Sando, T., Mtoi, E., Chimba, D. and Kwigizile, V. (2017). Simulation-Based Determination of Minimum Routing Decision Distance for Managed Lanes: Case Study of I-295 in Jacksonville, Florida. Presented at the 96th Annual Meeting of the Transportation Research Board (TRB), January 2017, Washington, D.C.
 17. Andridge, P., Ceifetz, A. H., Kwigizile, V., and Yassin, J. L. (2017). Safety Evaluation of Box Span Signal Configuration. Presented at the 96th Annual Meeting of the Transportation Research Board (TRB), January 2017, Washington, D.C.
 18. Wankogere, E., Kwigizile, V., Oh, J., and Ikononov, P. (2017). Comparison of Driver Navigation at Turbo Roundabouts and Modern Two-Lane Roundabouts: A Simulation Study. Presented at the 96th Annual Meeting of the Transportation Research Board (TRB), January 2017, Washington, D.C.
 19. Kwigizile, V., Boateng, R., Oh, J., and Lariviere, K. (2016). Evaluating the Effectiveness of Pedestrian Countdown Signals on the Safety of Older Drivers. Presented at the 95th Annual Meeting of the Transportation Research Board (TRB), January 2016, Washington, D.C.
 20. Kwigizile, V., Boateng, R., Oh, J., and Lariviere, K. (2016). Evaluating the Effectiveness of Pedestrian Countdown Signals on the Safety of Pedestrians. Presented at the 95th Annual Meeting of the Transportation Research Board (TRB), January 2016, Washington, D.C.
 21. Kwigizile, V., Ceifetz, A. H., Oh, J., Yassin, J. L., and Firman, J. (2016). Benefit-Cost Analysis of Fixed Weigh Stations – The Michigan Case. Presented at the 95th Annual Meeting of the Transportation Research Board (TRB), January 2016, Washington, D.C.
 22. Kwayu, K. M., Kwigizile, V., and Oh, J. (2016). Investigating the Correlation Between Factors Contributing to Pedestrian-Involved Crashes and their Impact on Crash Severity. Presented at the 95th Annual Meeting of the Transportation Research Board (TRB), January 2016, Washington, D.C.
 23. Fink, J., Kwigizile, V., and Oh, J. (2015). Impact of Adaptive Traffic Control Systems on Crash Frequency and Severity. Presented at the 94th Annual Meeting of the Transportation Research Board (TRB), January 2015, Washington, D.C.
 24. Dolatsara, H. A., Oh, J. and Kwigizile, V. (2015). Influential Range for Analyzing Motorized and Non-motorized Crashes at Intersections. Presented at the 94th Annual Meeting of the Transportation Research Board (TRB), January 2015, Washington, D.C.
 25. Clark, M., Oh, J., Kwigizile, V., and Castle, C. (2015). Perception of Advanced Traveler Information by Active Users. Presented at the 94th Annual Meeting of the Transportation Research Board (TRB), January 2015, Washington, D.C.

26. Kwigizile, V., Oh, J., and Darrow, J. Establishing Performance Standards for Federally Funded Traffic Enforcement in Michigan. Presented at the 93rd Annual Meeting of the Transportation Research Board (TRB), January 2014, Washington, D.C.
27. Alkhatni, F., Kwigizile, V., and Oh, J. Investigating Crash Frequency and Injury Severity at Freeway Weigh Stations in Michigan. Presented at the 93rd Annual Meeting of the Transportation Research Board (TRB), January 2014, Washington, D.C.
28. Wankogere, E., Kwigizile, V., and Oh, J. Safety Performance Functions for Partial Cloverleaf On-Ramp Loops for Michigan. Presented at the 93rd Annual Meeting of the Transportation Research Board (TRB), January 2014, Washington, D.C.
29. Clark, M., Oh, J., Kwigizile, V., and Van Houten, R. Cultural, Perceptual and Educational Factors on Non-Motorized Traffic Safety. Presented at the 93rd Annual Meeting of the Transportation Research Board (TRB), January 2014, Washington, D.C.
30. Angel, M. L., Sando, T., Chimba, D., and Kwigizile, V. Effects of Rain on Traffic Operations on Florida Freeways. Presented at the 93rd Annual Meeting of the Transportation Research Board (TRB), January 2014, Washington, D.C.
31. Sando, T., Angel, M., Hunter, W., Chimba, D., and Kwigizile, V. Operational Analysis of Shared Lane Markings “Sharrows” on Roadways With Narrow Lane Widths. Presented for Presentation at the 92nd TRB Annual Meeting, January 2013, Washington, D.C.
32. Chimba, D., Kutela, B., Kwigizile, V., and Sando, T. Paralleling the Influence of Unscheduled and Scheduled Roadwork Characteristics to Traffic Incident Durations. Presented for Presentation at the 92nd TRB Annual Meeting, January 2013, Washington, D.C.
33. Tang, P., Kanaan, O., Wang, J., Oh, J., and Kwigizile, V. Statistical Identification of Items Important for Evaluating Bridge Conditions. Presented for Presentation at the 92nd TRB Annual Meeting, January 2013, Washington, D.C.
34. Kwigizile, V., Sando, T. and Chimba, D. (2012). Modeling Bicyclist Injury Severity: A Focus on the Impact of Alcohol and Drug Use. Presented at the 91st Annual Meeting of the Transportation Research Board (TRB), January 2012, Washington, D.C.
35. Xu, X., Kwigizile, V., and Teng, H. (2012). Evaluating the Safety Impact of Access Management Techniques in Urban Areas. Presented at the 91st Annual Meeting of the Transportation Research Board (TRB), January 2012, Washington, D.C.
36. Kwigizile, V., Sando, T. and Chimba, D (2011). Inconsistencies of Ordered and Unordered Probability Models for Pedestrian Injury Severity. Presented at the 90th TRB Annual Meeting, January 2011, Washington, D.C.
37. Sando, T., Chimba, D. Kwigizile, V., and Moses, R. (2011). Operational Analysis of Interaction between Vehicles and Bicyclists on Highways with Wide Curb Lanes. Presented at the 90th TRB Annual Meeting, January 2011, Washington, D.C.
38. Sando, T., Chimba, D., Kwigizile, V., and Walker, H. (2010) Safety Characteristics of Unconventional Continuous Green Through Lane Intersections. Presented at the

Transportation Research Board (TRB) 89th Annual Meeting, January 2010, Washington, D.C.

39. Chimba, D., Sando, T., Kwigizile, V., and Moses, R. (2010) Synchronizing Roadway and Traffic Operations Influencing Bus Crashes. Presented at the Transportation Research Board (TRB) 89th Annual Meeting, January 2010, Washington, D.C.
40. Teng, H., Li, X., Kwigizile, V., and Gibby, R. (2009) Evaluation of Speed Monitoring Display for Work Zones in Las Vegas, presented at the 88th Annual Meeting of the Transportation Research Board, Washington D.C.
41. Teng, H., Kaseko, M., Xie, G., and Kwigizile, V. (2008) Evaluation of the Impacts of Emergency Vehicle on Signal Preemption, presented at the 87th Annual Meeting of the Transportation Research Board, Washington D.C.
42. Kwigizile, V. and Teng, H. (2008) Evaluation of Alternative Methods for Quantifying Spatial Effects in Trip Generation Models, presented at the 87th Annual Meeting of the Transportation Research Board, Washington D.C.
43. Kwigizile, V., Selekwa, M., and Mussa, R., (2004). Highway Vehicle Classification by Probabilistic Neural Networks”, presented at the Florida Artificial Intelligence Researchers Society Conference (FLAIRS), Miami, FL.
44. Kwigizile, V., Selekwa, M., and Mussa, R., (2004). Categorization of Highway Traffic in Florida by Using Connectionist Approach; presented at Artificial Neural Network in Engineering Conference (ANNIE), St. Louis, MO.

1.6.3 Other Conference Presentations/Publications and Speaking Engagement

1. Keynote Speaker. 1st International Conference on Transport, Logistics and Management (ICTLM 2023). Organized by the National Institute of Transport (NIT), Dar Es Salaam, Tanzania, October 18-20, 2023.
2. Oh, J., Qawasmeh, B., Mwende, S., Kwigizile, V., & Van Houten, R (2022). Non-motorized safety on high-speed corridors. Road Safety on Five Continents (RS5C 2022), October 10-12, 2022. Grapevine, Texas, USA.
3. Kwigizile, V., Lyimo, S., & Oh, J. (2022). Prioritizing Bikeability Factors for On-road Bicycle Facilities Using Analytical Hierarchy Process. Road Safety on Five Continents (RS5C 2022), October 10-12, 2022. Grapevine, Texas, USA.
4. Kwigizile, V. (2021). The Impacts of Posted Speed Limits on Road Users' Safety: Practices and Experience from Case Studies. Presented at International Congress on Transport Sector Development (ICTSD 2021), December 15-17, 2021, Dar Es Salaam, Tanzania.
5. Kwigizile, V. (2019). The Impacts of Roadway Infrastructure on Safety of Older Adult Users. Presented at International Congress on Transport Sector Development (ICTSD 2019), November 5-6, 2019, Dar Es Salaam, Tanzania.
6. Kwigizile, V. (2019). Big Data: A Case Study on Leveraging Crowdsourced Data to Improve Estimation of Cycling Activities. Presented at International Congress on Transport Sector Development (ICTSD 2019), November 5-6, 2019, Dar Es Salaam, Tanzania.

7. Kwigizile, V. (2018). Inclusion of crowdsourced cycling data in estimation of bicycle counts. Presented at the 6th Summer Conference on Livable Communities, Transportation Research Center for Livable Communities (TRCLC), July 2018, Kalamazoo, Michigan.
8. Kwigizile, V. (2017). Which Roadway Features are Problematic to Older Adults? - An Insight from Crashes. Presented at the 4th Summer Conference on Livable Communities, Transportation Research Center for Livable Communities (TRCLC), July 2017, Kalamazoo, Michigan.
9. Kwigizile, V. (2016). Pedestrian and Bicyclist Safety Development of Safety Performance Functions. Presented at the 3rd Summer Conference on Livable Communities, Transportation Research Center for Livable Communities (TRCLC), July 2016, Kalamazoo, Michigan.
10. Kwigizile, V., and Oh, J. (2016). Safety Benefits of Selected Engineering Improvements for Older Drivers in Michigan. Safe Transportation & Aging Symposium, University of Michigan Center for Advancing Transportation Leadership and Safety (ATLAS Center), September 14, 2016.
11. Kwigizile, V. (2015). Non-motorized Crashes and Countermeasures in Michigan, Presented at the 2nd Summer Conference on Livable Communities, Transportation Research Center for Livable Communities (TRCLC), July 2015, Kalamazoo, Michigan.
12. Kwigizile, V., and Oh, J. (2014). Development of Overtime Traffic Enforcement Performance Standards for Michigan. Michigan Traffic Safety Summit, March 2014, East Lansing, MI.
13. Kwigizile, V., and Teng, H. (2009). Impact of Land Use and Location on Work Trips: Las Vegas Case. Presented at 56th Annual North American Meetings of the Regional Science Association International (RSAI) Conference, San Francisco, CA.
14. Kwigizile, V. and H. Teng. (2007). The Effects of Spatial Variables in Destination Choice Models—Las Vegas Case, presented at the 2007 Fall Transportation Conference, Las Vegas, NV.

1.6.4 Research Reports

1. Van Houten, R., Kwigizile, V., Oh, J., Mwende, S., and Qawasmeh, B. (2023). Effective Pedestrian/Non-Motorized Crossing Enhancements Along Higher Speed Corridors. Final Report Prepared for the Michigan Department of Transportation (MDOT), Lansing, MI.
2. Liu, H., Kwigizile, V., & Huang, W. (2022). *Competitive Bidding in Construction Contracting*, Final Report Prepared for the Michigan Department of Transportation (MDOT), Lansing, MI.
3. Liu, H., Kwigizile, V., & Huang, W. (2021). *Michigan Transportation Construction Price Index*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
4. Kwigizile, V., Oh, J., Van Houten, R., Lee, K., Kwayu, K., Abushattal, M., Mwende, S., and Lyimo, S. (2022). *Quantifying Effectiveness and Impacts of Digital Message Signs on Traffic*, Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.

5. Kwigizile, V., Oh, J., and Lyimo, S. (2019). *Investigating and Prioritizing Factors for Quantifying Bikeability*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
6. Oh, J., Kwigizile, V., and Feizi, A. (2019). *Sustainable and Smart-growth City Ranking: Multifaceted Transportation Performance Measures in Smart Cities*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
7. Kwigizile, V., Oh, J., Acosta, L., and Gates, T. (2018). *An Investigation of the Relationship between Crash Occurrence, Safety Belt Use, and Overtime Traffic Enforcement*, Michigan Office of Highway Safety Planning (OHSP), Lansing, MI.
8. Van Houten, R., Oh, J., Kwigizile, V., Feizi, A., and Mastali, M. (2018). *Effect of Safe Bicycle Passing Laws on Drivers' Behavior and Bicyclists' Safety*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
9. Oh, J., Kwigizile, V., Hasan, M. M., and Mohammadi, S. (2018). *An Evaluation of Michigan's Continuous Count Station (CCS) Distribution*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
10. Oh, J., Kwigizile, V., and Al Houz, O. (2017). *Effectiveness of Bicycle Signals for Improving Safety and Multimodal Mobility at Urban Intersections*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
11. Kwigizile, V., Oh, J., and Kwayu, K. (2017). *Integrating Crowdsourced Data with Traditionally Collected Data to Enhance Estimation of Bicycle Exposure Measure*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
12. Kwigizile, V., Oh, J., Cho, R., Kwayu, K., and Villalobos, C. (2017). *Evaluating the Impacts of Speed Limit Changes on Identified Case Studies*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
13. Kwigizile, V., Oh, J., Akanmu, A., Lyimo, S., and Villalobos, C. (2017). *Developing Michigan's Truck Safety Strategic Plan for 2016-2019: Analysis Report*. Final Report Prepared for the Michigan Office of Highway Safety Planning (OHSP). Lansing, MI.
14. Kwigizile, V., Oh, J., Van Houten, R., Kwayu, K., Lyimo, S., Bagdade, J., and McArthur, A. (2017). *Association of Michigan's Older Adult Crashes with Roadway Features*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
15. Ceifetz, A., Kwigizile, V., Oh, J., Yassin, J., Andridge, P., and Burdick, B. (2017). *Evaluating Road Delineation Practices in Michigan*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
16. Al-Fuqaha, A., Oh, J., Kwigizile, V., Alhomaidat, F., and Mohammadi, S. (2017). *Integrated Crowdsourcing Platform to Investigate Non-Motorized Behavior and Risk Factors on Walking, Running, and Cycling Routes*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.

17. Kwigizile, V., Oh, J., Ikononov, P., Hasan, R., Villalobos, C., Kurdi, A., and Shaw, A. (2017). *Real Time Bicycle Simulation Study of Bicyclists' Behaviors and their Implication on Safety*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
18. Oh, J., Kwigizile, V., Ro, K., Feizi, A., Kostich, B.W., Hasan, R. A., and Alhomaidat, F. (2017). *Effects of Cycling Skills on Bicycle Safety and Comfort Associated with Bicycle Infrastructure and Environment*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
19. Kwigizile, V., Oh, J., Van Houten, R., Kwayu, K. (2016). *Development of Decision Support Tools to Assess Pedestrian and Bicycle Safety: Development of Safety Performance Functions*. Final Report Prepared for the WMU Transportation Research Center for Livable Communities, a Tier I USDOT University Transportation Center.
20. Kwigizile, V., Oh, J., Burdick, B., and Alzubaidi, A. (2016). *Comprehensive Evaluation of Pedestrian and Bicycle Crashes and Causes in Michigan*. Final Report Prepared for the Michigan Office of Highway Safety Planning (OHSP). Lansing, MI.
21. Kwigizile, V., Oh, J., Alkhatni, F., and Jorge, R. (2015). *Evaluating Michigan Commercial Vehicle Enforcement Strategies and Facilities*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
22. Oh, J., Kwigizile, V., Sun, Z., Clark, M., Kurdi, A. H., and Wiersma, M. (2015). *Costs and Benefits of MDOT Intelligent Transportation System Deployments*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
23. Kwigizile, V., Oh, J., Van Houten, R., Prieto, D., Boateng, R., Rodriguez, L., Ceifetz, A., Yassin, J., Bagdade, J., and Andridge, P. (2015). *Evaluation of Michigan's Engineering Improvements for Older Drivers*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.
24. Kwigizile, V., Oh, J., and Darrow, J. (2013). *Development of Federally Funded Traffic Enforcement Performance Standards for Michigan: Report on Performance Standards Recommendations*. Final Report Prepared for the Michigan Office of Highway Safety Planning. Lansing, MI.
25. Oh, J., Kwigizile, V., Van Houten, R., McKean, J., Abasahl, F., Dolatsara, H, Wegner, B., and Clark, M. (2013). *Development of Performance Measures for Non-Motorized Dynamics*. Final Report Prepared for the Michigan Department of Transportation (MDOT). Lansing, MI.

1.7 TEACHING AND STUDENT SUPERVISION EXPERIENCE

At Western Michigan University, Professor Kwigizile teaches eight (8) different courses at WMU. As chair of the committee, he has directed eight (8) Ph. D. dissertations (5 of which have been awarded while 3 are ongoing). He also has served as a member on five (5) more Ph. D. dissertation committees. In addition, Professor Kwigizile has supervised more than 20 master's theses/projects as chair of the committee/advisor and served as a member on master's thesis committees for 11 students. He also has advised 96 undergraduate students for their senior design project.

1.7.1 Courses Developed at WMU

Professor Kwigizile developed the following courses at WMU:

- CCE 5520: Highway Design Principles, 3 credits
The objective of this course is to provide students with the concepts, principles, and methods employed in highway design with emphasis on the location and design of highway facilities including, laying out potential routes, detailed design of the alignment, and evaluation of drainage, earthwork, and intersection requirements.
- CCE 6550: Travel Demand Analysis, 3 credits
The objective of this course is to provide students with the theoretical concepts of travel demand analysis and forecasting. It will help students understand how to model behaviors of travelers for transportation planning purposes.
- CCE 6580: Public Transportation, 3 credits
The objective of this course is to create an understanding of public transportation systems by students interested in professional careers in transportation. It will help students apply the knowledge from undergraduate-level transportation engineering and other civil engineering courses to design and operate (maintain) public transportation systems.
- CCE 5500: Civil Infrastructure Management and Spatial Analysis, 3 credits
The objective of this course is to introduce students to issues involved in management of civil infrastructure systems through spatial analysis techniques. It helps students become better civil infrastructure managers.

1.7.2 Teaching Record

Professor Kwigizile has taught at three different universities as follows:

Western Michigan University (WMU), Fall 2011 – present:

- CCE 2360: Geomatics (undergraduate, 3 credits)
- CCE 3300: Transportation Engineering (*undergraduate, 3 credits*)
- CCE 5400: Transportation Planning (*undergraduate/graduate, 3 credits*)
- CCE 5520: Highway Design Principles (*undergraduate/graduate, 3 credits*)
- CCE 6540: Traffic Safety Engineering (*graduate, 3 credits*)
- CCE 6550: Travel Demand Analysis (*graduate, 3 credits*)
- CCE 6580: Public Transportation (*graduate, 3 credits*)
- CCE 6960: Transportation Economics (*graduate, 3 credits*)

West Virginia University Institute of Technology (WVU Tech), Fall 2008-Spring 2011:

- CE 432: Traffic Engineering (*undergraduate, 3 credits*)
- CE 204: Surveying (*undergraduate, 3 credits*)
- ENGR 111: Software Tools for Engineers (*undergraduate, 3 credits*)
- CE 431: Highway Engineering (*undergraduate, 3 credits*)
- CE 332: Introduction to Transportation Engineering (*undergraduate, 3 credits*)

University of Nevada Las Vegas (UNLV), Spring 2006-Fall 2007:

- CEE 761: Travel Demand Analysis (*graduate, 3 credits*)
- CEE 110L: Introduction to Civil Engineering Design Laboratory (*undergraduate, 3 credits*)
- CEG 666: Geometric Design of Highways (*graduate/undergraduate, 3 credits*)

1.7.3 Ph. D. Student Dissertation Supervision

Professor Kwigizile has directed Ph.D. dissertations as the committee chair for the following individuals:

1. Fadi Alhomaidat (Fall 2018) – *Title: Impacts of Freeway Speed Limit on Safety and Operation Speed of Adjacent Arterial Roads*
2. Keneth Kwayu (Summer I, 2021) – *Title: Data Mining of Unstructured Textual Information in Transportation Safety Domain: Exploring Methods, Opportunities and Limitations*
3. Sia Lyimo (Fall 2021) – *Title: Connected and Automated Vehicles: Their Implication on Capacity of a Basic Freeway Section and Impacts on Walkway Safety*
4. Lusanni Acosta (Summer I, 2022) – *Title: Understanding Pedestrian Distraction by Phone at Intersection Crossings, Safety Implications and Potential Countermeasures*
5. Mousa Abushattal (Spring, 2023) – *Title: Associating driver behavior to surrounding environments and cyclist presence*
6. Ali Alhawitti (Expected Spring 2024) – *Title: Designing Scalable eHMI for Interaction with Autonomous Vehicles Based on Pedestrians' Informational Needs*
7. Mohammed Albalwi (Expected Summer I 2024) – *Title: TBD*
8. Sia Mwende (Expected Fall 2026) – *Title: TBD*

Professor Kwigizile has also served as a committee member for Ph.D. dissertations for the following individuals:

1. Maha Reda Alkasisbeh (Summer I, 2018)– *Title: An Integrated Decision Support Framework for Life-Cycle Building Asset Management*
2. Raed Abdullah Hasan (Fall 2019) – *Title: Analyzing Impacts of Transportation and Non-Transportation Activities on Human Health with an Advanced Platform for Collecting Travel and Physical Activity Data*
3. Md Mehidi Hasan (Fall 2020) – *Title: Application of Artificial Intelligence and Geographic Information System for Developing Automated Walkability Score*

4. Benjamin Sanda (Fall 2020) - *Title: Atmospheric Turbulence Distortion in Video: Restoration Utilizing Sparse Analysis*
5. Ahmad Feizi (Fall 2021) – *Title: Performance Evaluation of Transportation Systems for Sustainability and Smart-Growth of Cities: An Integrated Assessment of Health Impacts*

1.7.4 Masters' Student Thesis and Project Supervision

Professor Kwigizile has directed master's Thesis research as the committee chair for the following individuals:

1. Joshua Adam Fink, MSc (Fall 2013) – *Title: Safety Benefits of Adaptive Traffic Control Systems: A Case Study of Oakland County, MI*
2. Fathi Alkhatni, MSc (Fall 2014) – *Title: Investigating Crash Frequency and Injury Severity at Freeway Fixed Weigh Stations in Michigan*
3. Dario Romero Santana (Summer I 2014) – *Title: Overtime Traffic Enforcement Evaluation: A Methodology for Selecting Agencies and Enforcement Periods*
4. Elisha Wankogere (Fall 2014) – *Title: Virtual Analysis and Evaluation of Roundabout Safety and Operational Features*
5. Randy Jorge (Fall 2014) – *Title: Economic Analysis of Michigan Commercial Vehicle Enforcement Strategies*
6. Lusanni Acosta Rodriguez (Fall 2015) – *Title: Evaluation of the Safety Effectiveness of Clearview Font and Fluorescent Yellow Sheeting on Michigan Freeways and Non-Freeways*
7. Richard Atta Boateng (Spring 2016) – *Title: Comprehensive Evaluation of the Effectiveness of Pedestrian Countdown Signals on Road Users in Michigan*
8. Ahmed Al-zubaidi (Spring 2016) – *Title: Analysis of Pedestrian and Bicycle Crashes in Michigan*
9. Keneth Morgan Kwayu (Fall 2016) – *Title: Improved Methodology for Developing Non-Motorized Safety Performance Functions*
10. Brenda Burdick (Fall 2016) – *Title: Safety Benefit Analysis of Alternative Delineation Practices in Michigan*
11. Oluwaseun Adegaju (Fall 2018) – *Title: Establishing Delay-Based Criteria for Installing Traffic Signals at Two-Lane Roundabouts*
12. Sia Mwende (Summer I, 2023) – *Title: Investigating Disparities and Safety Equity in Pedestrian Nighttime Crashes in Michigan*

Professor Kwigizile has also served as a committee member for Master's Thesis for the following individuals:

1. Omar Kanaan (Summer I 2012) – *Title: Regression-Based Prioritization and Data Modeling for Customized Civil Engineering Data Collection*
2. Farhad Abasahl (Summer I 2013) – *Title: Spatial Factors Impacting Non-Motorized Exposures and Crash Risks*
3. Hamidreza Dolatsara (Summer I 2014) – *Title: Development of Safety Performance Functions for Non-Motorized Traffic Safety*
4. Matthew Clark (Summer I 2015) – *Title: A Microscopic Simulation Approach to Performance Evaluation of Intelligent Transportation System Corridors: A Case in Michigan*
5. Marino Esteban Calderon Diaz (Spring 2015) – *Title: Analysis of Mobility Impact for Implementing Complete Streets*
6. Fnu Zahed (Fall 2016) – *Title: Transportation System and Its Association with Human Health – A Review and Modeling Approach*
7. Mohammed Al-Akash (Fall 2017) – *Title: Enhancing Intersection Safety for the Blind and Visually Impaired (BVI) Pedestrian Using Device-to-Infrastructure Communication*
8. Odai Al Houz (Fall 2018) - *Title: Evaluation of Bike Boxes and Protected Intersections with Bicycle Signal Treatments for Improving Safety and Multimodal Mobility at Urban Signalized Intersections*
9. Ali Hamza Alzuhairi (Summer I 2016) – *Title: Comparison of Safety and Operational Performances for Three Engineering Countermeasures*
10. Rostam Ameen Qatra (Fall 2016) – *Title: Analysis of Transit Accessibility for People with Disabilities*
11. Funda Yavuz (Summer I 2016) – *Title: Economic Impact Analysis of Bridge Construction*

Also, Professor Kwigizile has supervised Master's Project for the following individuals:

1. Abdulaziz Khalid Almofawez (Fall 2014)
2. Lucía Álvarez Soto (Spring 2015)
3. Tejaswi Vangapattu (Summer I 2016)
4. Ahmed Kabli (Fall 2017)
5. Paola Rosario (Spring 2018)
6. Ali Alhawitti (Fall 2018)
7. Oghenekaro Gideon Kpangban (Fall 2018)
8. Cole Villalobos (Spring 2019)
9. Everlyn Fikumani (Spring 2023)

1.8 **PROFESSIONAL SERVICE RECORD**

1.8.1 **Leadership Positions Held**

1. March 2022-June 2023: **Guest Associate Editor, Journal of Frontiers in Transportation, Transport Safety**. Professor Kwigizile led an effort to collect, review and publish research papers on a special topic on “Micromobility and Other Emergent Transportation Technologies for All Road Users.”
2. August 2019-June 2021: **Chair, WMU Campus Planning and Finance Council (CPFC)**. In addition to reviewing budget and financial issues of the university and making recommendations to the administration, the CPFC reviews major plans for the university's physical facilities, including on- and off-campus facilities, transportation and infrastructure, and how they impact safety, security, aesthetics, finances and the surrounding environment. CPFC also develops and recommends guidelines as well as reviewing existing policies that provide a framework which campus agencies may use as a benchmark in making decisions related to campus planning and finance matters.
3. January 2020: **Co-Lead Organizer, Transportation Research Board (TRB) Workshop on Speed Management**, held at the 99th TRB Annual Meeting, January 12, 2020. Washington, D.C. The workshop provided an overview on community-wide speed management strategies and resources, followed by 3 case studies (city, state, international). It concluded with a break-out session to discuss topics like speed setting laws, design solutions, and level of service impact.
4. August 2020-present: **Paper Review Coordinator for TRB Standing Committee on Pedestrians**. Professor Kwigizile coordinates review of papers submitted to TRB annual meetings.
5. October 2013-present: **Associate Director, Transportation Research Center for Livable Communities (TRCLC)**, a Tier I USDOT University Transportation Center at Western Michigan University. The TRCLC is a consortium of five universities aiming to address the nation's critical transportation challenges through the prism of livable communities. The Center's primary goal is to improve affordable and environmentally sustainable transportation options for conventionally underserved communities with special attention paid to non-motorized travel, pedestrian and bicycle safety, job accessibility and 'smart' transport technologies. As associate director, Professor Kwigizile provided support to the director in running the center. He also led the Research Advisory Committee – coordinating call for proposals as well as reviewing and selection of research projects.

1.8.2 **Professional Service to the WMU Community**

Professor Kwigizile has a track record of providing professional service to the university community as follows:

- June 2021-present: Member, WMU Racial Justice Advisory Committee (RJAC)
- Spring 2020-present: Member, WMU's Aspire iChange Network Institutional Leadership Team
- Spring 2016-Fall 2018: Member, Business Technology and Research (BTR) Park 2.0 Advisory Committee

- Fall 2018-Fall 2019: Member, Senate South Neighborhood Transportation Planning Task Committee
- Spring 2020, 2021, and 2022: Reviewer, WMU's Faculty Research and Creativity Activities Award (FRACAA).
- Fall 2016 – Spring 2019: Member, WMU's Professional Concerns Committee
- Fall 2018-present: Member, University Campus Planning and Finance Council
- Fall 2021-present: Member, CEAS ad hoc Committee on Systems Engineering Certificate
- Fall 2014-present: Member, CCE Departmental Curriculum Committee.
- Fall 2013-present: Member, College (CEAS) Committee on Diversity and Inclusion (CDI)
- Fall 2013-present: Member, University Academic Integrity Committee
- Fall 2012-present: Member, CCE Departmental Infrastructure Committee.
- Fall 2012-present: Member, CCE Departmental Assessment Committee.
- Spring 2012: Member, CEAS Strategic Plan Research Committee.
- Fall 2011: Member, CCE Departmental Search Committee for Construction Faculty position.
- Spring 2012: Judge, the Sixth Annual WMU Research and Creative Activities Poster Day.

1.8.3 Professional Service to the Local Community

In addition, Professor Kwigizile serves the local community in various capacities as follows:

- February 2021-present: Member, Bike Friendly Kalamazoo's Advisory Council
- March 2017: Judge, the 2017 Southwest Michigan Science and Engineering Fair, Kalamazoo, MI
- March 2015: Judge, the 2015 Southwest Michigan Science and Engineering Fair, Kalamazoo, MI
- March 2013: Judge, the 2013 Southwest Michigan Science and Engineering Fair, Kalamazoo, MI
- March 2012: Judge, the 2012 Southwest Michigan Science and Engineering Fair, Kalamazoo, MI

1.8.4 Professional Service to the National/International Community

At the national and international levels, Professor Kwigizile serves in various capacities as follows:

- Research Panel Member, the Transit Cooperative Research Program (TCRP) Project A-38 (*Guidebook for Pedestrian Crossings for Public Transit Rail Service*).
- Research Proposal Reviewer:
 - i. University of Washington (UW) Tacoma Catalyst Award (2022)
 - ii. Center for Accessibility and Safe Transportation for an Aging Population, FSU Transportation Research Center (2017)
 - iii. The Canada Foundation for Innovation (2018)
- Transportation Research Board (TRB) Committees:

- i. Member, Standing Committee on Pedestrians (ACH10)
- ii. Friend, Standing Committee on Bicycle Transportation (ACH20)
- iii. Friend, Committee on Transportation Demand Forecasting (AEP50)
- iv. Friend, Committee on Air Quality and Greenhouse Gas Mitigation (AMS10)
- Paper reviewer for journals and conferences:
 - i. *Transportation Research Board (TRB) Annual Meeting*
 - ii. *Transportation Research Record (TRR) Journal of the TRB*
 - iii. *ASCE Journal of Transportation Engineering, Part A: Systems*
 - iv. *Journal of Transportation Interdisciplinary Research*
 - v. *Journal of Traffic and Transportation Engineering*
 - vi. *4th International Conference on Transportation and Health*
 - vii. *Korean Society for Civil Engineers (KSCE) Journal of Civil Engineering*
 - viii. *Transportation Research Part A: Policy and Practice*
 - ix. *15th International IEEE Annual Conference on Intelligent Transportation Systems*
 - x. *IEEE Intelligent Transportation Systems Transactions and Magazine*
 - xi. *Journal of Transportation Technologies*
 - xii. *Advances in Transportation Studies: An International Journal*
 - xiii. *International Journal of Transportation Science and Technology*

1.9 **HONORS AND AWARDS**

- 2022 WMU's Institutional Mid-America Conference (MAC) Outstanding Faculty for Student Success.
- Excellence in Discovery, Largest Interdisciplinary Research Grant as Principal Investigator. Western Michigan University, March 2021.
- Excellence in Discovery, Research and External Funding over \$1 Million for Five Years (2012-2016) as Principal Investigator. Western Michigan University, February 2017.
- Excellence in Discovery, Research and External Funding over \$1 Million for Five Years (2012-2016) as Co- Principal Investigator. Western Michigan University, February 2017.
- Excellence in Discovery, Research and External Funding over \$1 Million for Five Years (2010-2015) as Co- Principal Investigator. Western Michigan University, February 2016.
- 2014/15 Best Senior Design Faculty Advisor, Department of Civil and Construction Engineering, Western Michigan University, April 2015.
- 2015 Outstanding Service to Students Award, College of Engineering and Applied Sciences, Western Michigan University, April 2015.
- 2013 Outstanding New Researcher, College of Engineering and Applied Sciences, Western Michigan University, January 2014.
- 2013 Outstanding Service to Students Award, College of Engineering and Applied Sciences Award, Western Michigan University, April 2013.
- 2007 Outstanding Graduate, awarded by the University of Nevada Las Vegas, December 2007.

- The Roosevelt Fitzgerald Academic Achievement Award for Outstanding Scholarship and Leadership, awarded by The Alliance of Professionals of African Heritage, University of Nevada Las Vegas, May 2007.
- Graduate Research Training (GREAT) Assistantship, University of Nevada Las Vegas, Summer 2006 and Summer 2007.
- Graduate Research Assistantship, University of Nevada Las Vegas, January 2005-December 2007
- Graduate Research Assistantship, Florida State University, January 2003-December 2004.