

NASIR G. GHARAIBEH, PH.D., P.E.

Associate Professor and holder of the Zachry Career Development Professorship I, Texas A&M University

Division Head, Transportation & Materials Engineering

Zachry Department of Civil Engineering

3136 TAMU, 503-E

College Station, TX 77843-3136

Phone: 979-845-3362 | Email: ngharaibeh@civil.tamu.edu | <http://ceprofs.civil.tamu.edu/ngharaibeh>

EDUCATION

University of Illinois at Urbana-Champaign	Civil Engineering	Ph.D., October 1997
Jordan University of Science and Technology	Civil Engineering	M.S., August 1991
Jordan University of Science and Technology	Civil Engineering	B.S., January 1990

PROFESSIONAL EXPERIENCE

9/2016 – Present	Division Head, Transportation & Materials Engineering, Civil Engineering, Texas A&M University
9/2014 – Present	Associate Professor, Civil Engineering, Texas A&M University
8/2008 – 8/2014	Assistant Professor, Civil Engineering, Texas A&M University
1/2004 – 8/2008	Assistant Professor, Civil Engineering, University of Texas at El Paso
6/1997 – 1/2004	Senior Engineer, Applied Research Associates (ARA), Inc.
1/1994 – 6/1997	Graduate Research Assistant, University of Illinois at Urbana-Champaign
11/1992 – 12/1993	Highway Construction Engineer, Nishikawa Gumi Corporation, Japan

PUBLICATIONS

* indicates student under the advisement of Dr. Gharaibeh.

Refereed Journal Papers (Published or in Press)

1. Dalla Rosa, F., *Liu, L., and Gharaibeh, N.G. (2017) "IRI Prediction Model for Use in Network-Level Pavement Management Systems," *Journal of Transportation Engineering, Part B*, 143(1):04017001.
2. *Menendez, J. R., and Gharaibeh, N.G. (2017) "Incorporating Risk and Uncertainty into Infrastructure Asset Management Plans for Pavement Networks," *Journal of Infrastructure Systems*, ASCE, 23(4):04017019.
3. *Zabihi Siabil, S., and Gharaibeh, N.G. (2017) "Assessing the Effect of Considering Multiple Data Properties on Detecting Potential Errors in Pavement Condition Data." *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2639, pp. 39-45.

4. *Gurganus, C.F., Gharaibeh, N.G., and Scullion, T. (2017) “Case Study on the Use of Mobile LiDAR to Produce a Preliminary Drainage Design,” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2655, pp. 82-90.
5. *Zabihi Siabil, S., and Gharaibeh, N.G. (2016) “Computational Technique for Detecting Errors in Network-level Pavement Condition Data.” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2589, pp. 14-19.
6. *Saliminejad, S. and Gharaibeh, N. G. (2016) “Proximity-Based Outlier Detection Method for Roadway Infrastructure Condition Data.” *Journal of Computing in Civil Engineering*, Vol. 30, No. 1, pp 1-8.
7. *Liu, L. and Gharaibeh, N.G. (2015) “Simulation-Based Methodology for Developing Performance-Related Specifications for Pavement Preservation Treatments.” *Journal of Transportation Engineering*, Vol. 141, No. 8, pp 1-10.
8. *Liu, L. and Gharaibeh, N.G. (2014) “Bayesian Model for Predicting the Performance of Pavements Treated with Thin Hot-Mix Asphalt Overlays.” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2431, pp. 33-41.
9. Arambula, E. and Gharaibeh, N. (2014) “Methods for Accumulating Construction and Material Quality Test Results and Their Effect on Acceptance Decisions,” *Journal of Construction Engineering and Management*, Vol. 140, No. 8, August 2014, pp. 1-3.
10. Gharaibeh, N.G. and *Lindholm, D. B. (2014). “A condition assessment method for roadside assets,” *Structure and Infrastructure Engineering: Maintenance, Management, Life-Cycle Design and Performance*, 10:3, pp. 409-418.
11. *Saliminejad, S. and Gharaibeh, N. G. (2013) “Impact of Error in Pavement Condition Data on Output of Network-Level Pavement Management Systems.” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2366, pp. 110–119.
12. *Menendez, J.R., *Zabihi Siabil, S., *Narciso, P., and Gharaibeh, N.G. (2013) “Evaluating Worst-First and Benefit-Cost Analysis Approaches for Prioritizing Infrastructure Maintenance and Rehabilitation Activities under Various Budgetary Scenarios.” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2361, pp. 56–62.
13. *Wani, S. S. and Gharaibeh, N. G. (2013) “Evaluating the Use of Contractor-Performed Test Results in Highway Construction and Materials Acceptance Decisions,” *Journal of Infrastructure Systems*, ASCE, Vol. 19, No. 1, pp. 67-73.
14. *Saliminejad, S. and Gharaibeh, N. G. (2012) “A Spatial-Bayesian Technique for Imputing Pavement Network Repair Data,” *Journal of Computer-Aided Civil and Infrastructure Engineering*, Volume 27, Issue 8, pp. 594–607.
15. Gharaibeh, N. G., *Liu, L., and *Wani, S. S. (2012) “Skip-Lot Acceptance Sampling Plans for Highway Construction and Materials,” *Journal of Construction Engineering and Management*, ASCE, Volume 138, No. 7, pp. 791-796.
16. *Gurganus, C. F. and Gharaibeh, N.G. (2012) “Project Selection and Prioritization of Pavement Preservation: A Competitive Approach,” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2292, pp. 36–44.

17. *Ahmed, J., Gharaibeh, N.G., and Damjanovic, I. D. (2012) “Best-Value Bid Selection Methods for Performance-Based Roadway Maintenance Contracts,” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2292, pp. 12–19.
18. Gharaibeh, N. G., *Zou, Y., and *Saliminejad, S. (2010) “Assessing the Agreement among Pavement Condition Indexes,” *Journal of Transportation Engineering*, ASCE, Volume 136, Issue 8, pp. 765-772.
19. Gharaibeh, N.G., Garber, S.I., and *Liu, L. (2010) “Determining Optimum Sample Size for Percent-Within-Limits Specifications,” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2151, pp. 77–83.
20. Tirado, C., Carrasco, C., *Mares, J. M, Gharaibeh, N. G., Nazarian, S., Bendana, L. J. (2010) “Process to Estimate Permit Costs for Movement of Heavy Trucks on Flexible Pavements,” *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2154, pp. 187–196.
21. Gharaibeh, N.G., *Valenzuela, B., *Machado, J., and Cook, S. (2009) “A Green Approach for Coping with the High Cost of Infrastructure Services in U.S. Colonias,” *Journal of Infrastructure Systems*, ASCE, Vol. 15, No. 4, pp. 417-424.
22. Gharaibeh, N.G. and *Shirazi, H. (2009) “A Risk-based Model for Pricing Highway Infrastructure Warranties,” *Journal of Infrastructure Systems*, ASCE, Vol. 15, No. 4, pp. 378-382.
23. Gharaibeh, N.G., *Camacho, G., *Elgendy, M., and Ramirez, I.D. (2009) “Geographic Information System Framework for Stormwater Drainage Asset Management,” *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 2121, pp. 1-12.
24. Gharaibeh, N.G., and Miron, A. (2008) “Warranty Specifications for Highway Construction: Current Practices and Evolution to Advanced Quality Systems,” *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 2081, pp. 77-82.
25. Gharaibeh, N.G., Chiu, Y-C., and Gurian, P.L. (2006). “A Decision Methodology for Allocating Funds across Transportation Infrastructure Assets,” *Journal of Infrastructure Systems*, ASCE, Volume 12, Issue 1, pp. 1-9.
26. *Velivelli, K.L., Gharaibeh, N.G., and Nazarian, S. (2006). “Sample Size Requirements for Seismic and Traditional Testing of Concrete Pavement Strength,” *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 1946, pp. 33-38.
27. Gharaibeh, N.G. and Darter, M.I. (2003). “Probabilistic Analysis of Highway Pavement Life for Illinois,” *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 1823, pp. 111-120.
28. Gharaibeh, N.G., Stefanski, J. A., and Darter, M.I. (2002). “Evaluation of Concrete Pavement Construction Scenarios Under Performance-related Specifications,” *Transportation Research Record, Journal of the Transportation Research Board*, Vol. 1813, pp. 21-27.
29. Gharaibeh, N.G. and Darter, M.I. (2001). “Benefits and Costs of Jointed Plain Concrete Pavement Design Features,” *Transportation Research Record*, Vol. 1778, pp. 1-8.
30. Gharaibeh, N.G., Darter, M.I., and Uzarski, D.R. (1999). “Development of a Prototype Highway Asset Management System,” *Journal of Infrastructure Systems*, ASCE, Vol. 5, No. 2, pp. 61-68.

31. Gharaibeh, N.G., Darter, M.I., and Heckel, L.B. (1999). "Field Performance of Continuously Reinforced Concrete Pavement in Illinois," *Transportation Research Record*, Vol. 1684, pp. 44-50.
32. Gharaibeh, N.G., Wilson, C., Darter, M.I., and Jones, G. (1998). "Development of a Bike Path Management System for the University of Illinois at Urbana-Champaign," *Transportation Research Record*, Vol. 1636, pp 56-63.
33. Gharaibeh, N.G., LaTorre, F., Darter, M.I., and Lippert, D.L. (1997). "Use of PMS Data for Pavement Engineering Application," *Transportation Research Record*, Vol. 1592, pp. 35-45.

Refereed Conference Proceedings

1. Dalla Rosa, F., Gharaibeh, N.G., Fernando, E.G. and Wimsatt, A. (2016). "Quality Assurance for Automated and Semi-Automated Pavement Condition Surveys," *Proceedings of the ASCE Transportation and Development Institute (T&DI) International Conference on Transportation & Development (ICTD)*, pp. 192-201. DOI: 10.1061/9780784479926.018.
2. *Liu, L., *Rashed, A., and Gharaibeh, N. G. (2016). "CRCP Performance Patterns Gleaned from Texas Pavement Management Data," *Proceedings of the 11th International Conference on Concrete Pavements (ICCP)*, San Antonio, Texas, August 28-September 1, 2016.
3. *Gurganus, C. F., *Narciso, P. J. R., and Gharaibeh, N. G. (2016). "Understanding the Links between Asset Management and Performance Measurement Decision Making Processes." *Proceedings of the 95th Annual Meeting of the Transportation Research Board*, Washington, D. C., January 2016.
4. Gharaibeh, N.G. and *Lindholm, B. (2013). "Development of Performance-Based Specifications for Roadside Maintenance," *Proceedings of the ASCE Green Streets, Highways, and Development 2013: Advancing the Practice*, Austin, Texas, November 3-6, 2013, pp. 78-88.
5. Gharaibeh, N. G. and *Saliminejad, S. (2013). "Clustering Pavement Condition Data Based on Spatiotemporal Patterns," *Proceedings of the Airfield and Highway Pavement 2013: Sustainable and Efficient Pavements, ASCE Transportation and Development Institute (T&DI)*, Los Angeles, California, June 9-12, 2013, pp. 772-780.
6. *Hart, W. S., and Gharaibeh, N. G. (2011). "Use of Micro Unmanned Aerial Vehicles in Roadside Condition Surveys," *Integrated Transportation and Development for a Better Tomorrow, Proceedings of the 1st Transportation and Development Institute (T&DI) Congress*, ASCE, Chicago, IL., March 2011, pp. 80-92.
7. *Camacho, G. L., Gharaibeh, N. G., Chang-Albitres, C., Aldouri, R. (2010). "A GIS Technique for Managing Dynamic Infrastructure Data," *Proceedings of the 89th Annual Meeting of the Transportation Research Board – CDROM*, Washington, D. C., January 2010.
8. Gharaibeh, N.G., Button, J. W., and *Jalvi, P. (2009). "Case Studies of Design-Build Project Delivery for Highway Pavements," *Proceedings of the 1st International Conference on Transportation Construction Management*, Orlando, FL, February 2009.
9. Gharaibeh, N.G., Button, J. W., and *Jalvi, P. (2007). "Concrete Pavement Aspects in Design-Build Contracts: Case History Projects from Texas," *Proceedings of the 86th Annual Meeting of the Transportation Research Board – CDROM*, Washington, D. C., January 2007.

10. Gharaibeh, N.G., Smith, K.L., and Plei, M.N. (2005). "A Methodology for Evaluating the Cost-Effectiveness of CRCP Design Features," *Proceedings of the 8th International Conference on Concrete Pavements*, Volume II, Colorado Springs, Colorado, August 2005, pp. 658-673.
11. Gharaibeh, N.G. and Walter, J.D. (2004). "Evaluation of Data Collection and Processing Techniques for Transportation Asset Management." *Proceedings of the 2nd Gulf Conference on Roads*, Abu Dhabi, United Arab Emirates.
12. Gharaibeh, N.G. (2003) "Longevity of Highway Concrete Pavements in the United States," *Proceedings of the International Conference on Highway Pavement Data, Analysis, and Mechanistic Design Applications*, Vol. 1, Columbus, Ohio, pp. 241-250.
13. Bham, G.H., Darter, M.I., and Gharaibeh, N.G. (2002) "Consequences of Utilizing Alternative Pavement Ratings for Prioritizing Pavement Rehabilitation of Illinois Interstate Highway Network," *Proceedings of the Application of Advanced Technologies in Transportation Conference*, ASCE, ISBN/SKU 0784406324, pp. 537-544.
14. Gharaibeh, N.G., Darter, M.I., Kopac, P., and Hoerner, T.E. (2001) "Effect of Variability and Central Tendency in Performance-Related Specifications for Concrete Pavement," *Proceedings of the 7th International Conference on Concrete Pavements*, Vol. 1, Orlando, Florida, pp. 513-524.
15. Gharaibeh, N.G., Hicks, J.E., and Hall, J.P. (1997). "Statistical and Spatial Analyses of Accidents, Traffic, and Pavement Conditions," *Proceedings of the Traffic Congestion and Traffic Safety in the 21st Century: Challenges, Innovation, and Opportunities*, ASCE, Chicago, IL, pp. 396-402.

Invited Talks and Conference Presentations

1. Gharaibeh, N.G. (1/2017). *Detecting and Assessing the Impact of Errors in Pavement Condition Data*, Dalarna University, Borlänge, Sweden, January 19, 2017.
2. Gharaibeh, N.G. (4/2016). *Infrastructure Asset Management: A Close Look at Data Quality*. Qatar University, Doha, Qatar, April 21, 2016.
3. Gharaibeh, N.G. (12/2012). *Recent Advances in Pavement Design Procedures: AASHTO's Mechanistic-Empirical Pavement Design Procedure*. Universidade Federal do Paraná Curitiba, Brazil, Dec 17-18, 2012.
4. Gharaibeh, N.G. (2009). Alternatives to the Use of Contractor Test Data. Presented at the Federal Highway Administration (FHWA) Technical Working Panel Brainstorming Session, McLean, Virginia, February 2, 2009.
5. Gharaibeh, N.G. (2009). Quality Systems for Concrete Pavement. Presented at the 10th Annual Pennsylvania Concrete Conference, Grantville, Pennsylvania, January 28, 2009.
6. Gharaibeh, N.G. (2006). Pavement Warranty Specifications. Presented at the Federal Highway Administration (FHWA) Advanced Quality Systems Workshop, Alexandria, Virginia, November 7-8, 2006.
7. Gharaibeh, N.G. (2005). Development of a Prototype Construction Information System for El Paso. Presented at the Quad Section-ASCE Fall 2005 Conference, El Paso, Texas.

8. Gharaibeh, N.G., Darter, M.I., and Bham, G.H. (2003). Development of a Prototype GIS-based Pavement Information and Management System for Illinois. Presented at the 2003 GIS for Transportation Symposium, Colorado Spring, Colorado.
9. Gharaibeh, N.G. (2003). Implementation of Performance-Related Specifications for PCC Pavement. Presented at the Southeastern Association of State Highway and Transportation Officials (SASHTO) Quality Conference, Williamsburg, Virginia, March 3-6, 2003.
10. Gharaibeh, N.G. (2002). Comparative Performance and Costs of In-Service Highway Pavements. Presented at Iowa Concrete Pavement Association (ICPA) Annual Workshop, Des Moines, Iowa, February 7-8, 2002.
11. Gharaibeh, N.G., C. A. Beckemeyer, and K. Smith (2001). Maintenance Quality Assurance - How Do Your Asset Preservation Efforts Measure Up? Presented at the 1st International Conference and Exhibition on the Quality Control and Quality Assurance of Construction Materials, Dubai, United Arab Emirates, October 29-30, 2001.
12. Gharaibeh, N.G., B. Killingsworth, and J. Hall (2001). Performance-Related Specifications for Highway Pavements: Current Status and Future Directions. Presented at the 1st International Conference and Exhibition on the Quality Control and Quality Assurance of Construction Materials, Dubai, United Arab Emirates, October 29-30, 2001.

Published Technical Reports

1. Gharaibeh, N., *Oti, I., Schrank, D., Zmud, J. (2017) Data Management and Governance Practices, NCHRP Synthesis of Highway Practice, Issue 508, Transportation Research Board, ISSN: 0547-5570.
2. Gharaibeh, N.G., *Narciso, P., Cha, Y., Oh, J., *Menendez, J.R., Dessouky, S., and Wimsatt, A. (2014). A Methodology to Support the Development of 4-Year Pavement Management Plan, Report No. FHWA/TX-14/0-6683-1, Texas Department of Transportation and Federal Highway Administration.
3. Gharaibeh, N., Freeman, T., Saliminejad, S., Chang-Albitres, C., Weissman, J., Weissman, A., Wimsatt, A., and Charles Gurganus (2012). *Evaluation and Development of Pavement Scores, Performance Models, and Needs Estimates for the TXDOT Pavement Management Information System*, Report No. FHWA/TX-12/0-6386-3, Texas Department of Transportation and Federal Highway Administration.
4. Gharaibeh, N., Wimsatt, A., *Saliminejad, S., *Menendez, J.R., Weissmann, A.J, Weissmann, J., and Chang-Albitres, C. (2012). *Implementation of New Pavement Performance Prediction Models in PMIS*, Report No. FHWA/TX-12/5-6386-01-1, Texas Department of Transportation and Federal Highway Administration.
5. Gharaibeh, N.G, *Shelton, D., Ahmed, J., Chowdhury, A., and Krugler, P.E. (2011) *Development of Performance-Based Evaluation Methods and Specifications for Roadside Maintenance*, Report No. FHWA/TX-11/0-6387-1, Texas Department of Transportation and Federal Highway Administration.

6. *Hart, W.S., and Gharaibeh, N.G. (2010) *Use of Micro Unmanned Aerial Vehicles in Roadside Condition Assessment*, Report No. SWUTC/10/476660-00019-1, Southwest Region University Transportation Center.
7. Papagiannakis, A., Gharaibeh, N., Weissmann, J., and Wimsatt, A. (2009). *Pavement Scores Synthesis*, Report No. FHWA/TX-09/0-6386-1, Texas Department of Transportation and Federal Highway Administration.
8. Evans, L., Smith, K. L., Gharaibeh, N. G., and Darter, M. I. (2008). *Development and Implementation of a Performance-Related Specification for SR 9A, Florida*, Final Report, Report No. FHWA-HIF-09-016, Federal Highway Administration, Washington DC.
9. Miron, A.G., Gharaibeh, N., Rasmussen, R., Rogers, R., Ferragut, T. (2007). *Defining an Advanced Quality System and the Elements that Integrate It*, Report No. FHWA-HRT-07-058, Federal Highway Administration, Washington DC.
10. Gharaibeh, N.G. and *Elgendy, M. (2006). *Integration of TxDOT's Pavement Forensic Studies*, Final Report, IAC 46-6PVIA012, Texas Department of Transportation, Center for Transportation Infrastructure Systems, The University of Texas at El Paso.
11. Gharaibeh, N.G., Button, J. W., and *Jalvi, P. (2005). *Pavement Aspects in Design-Build Contracting for Highway Projects*, Report No. TTI-2005-1, Texas Transportation Institute, Texas Department of Transportation.
12. Bham, G.H., Gharaibeh, N.G., and Darter, M.I. (2003). *GIS-ILLINET Version 2.0 Pavement Management and Information System-User's Guide*, Report No. FHWA-IL-UI-286, Illinois Cooperative Highway Research Program.
13. Gharaibeh, N.G. and Darter, M.I. (2002). *Longevity of Highway Pavements in Illinois-2000 Update*, Report No. FHWA-IL-UI-283, Illinois Cooperative Highway Research Program.
14. Hoerner, T.E., Darter, M. I., Gharaibeh, N. G., and Crow, T. L. (2001). *Comparative Performance and Cost of In-Service Highway Pavements—I-15, Utah*, PCA R&D Serial No. 2209a, Portland Cement Association.
15. Gharaibeh, N.G., and Crow, T. L. (2000). *Comparative Performance and Costs of In-Service Highway Pavements I-40, Tennessee*, PCA R&D Serial No. 2209, Portland Cement Association.
16. Gharaibeh, N.G., Darter, M.I., and Heckel, L.B. (1999). *Field Performance of Continuously Reinforced Concrete Pavement in Illinois*, Report No. FHWA-IL-UI-268, Illinois Cooperative Highway Research Program.
17. ERES Consultants (Owusu-Antwi, E.B., Khazanovich, L., Gharaibeh, N.G., and Darter, M.I.) (1999). *Evaluation of Unbonded Portland Cement Concrete Overlays*, Report No. 415, National Cooperative Highway Research Program (NCHRP), National Academy Press.
18. Gharaibeh, N.G., LaTorre, F., and Darter, M.I. (1997). *Performance of Original and Resurfaced Pavements on the Illinois Freeway System*, Report No. 540-1, FHWA-IL-UI-261, Illinois Cooperative Highway Research Program.
19. M. Demos, Gharaibeh, N.G., and Darter, M.I. (1995). *Evaluation of Potential Application of End-Result and Performance-Related Specifications, Portland Cement Concrete Pavements*, Report No. 425, FHWA-IL-UI-256, Illinois Cooperative Highway Research Program.

RESEARCH SUPPORT

At Texas A&M University

EAGER Citizen Science for Infrastructure Monitoring at the Neighborhood Level

Principal Investigator

Period: 9/2016-9/2017

Sponsor: National Science Foundation (NSF)

NCHRP Synthesis Topic 47-05: Data Management Practices

Principal Investigator

Period: 11/2015-2/2017

Sponsor: National Cooperative Highway Research Program (NCHRP)

Developing a Surface Drainage Rating for Inclusion in TxDOT's Asset Management System

Co- Principal Investigator

Period: 9/2015-8/2017

Sponsor: Texas Department of Transportation (TxDOT)

Test Procedure for Validation of Automated Distress Data

Collaborator

Period: 11/2014-3/2016

Sponsor: Texas Department of Transportation (TxDOT)

Framework for Implementing Performance Planning for Rural Planning Organizations

Collaborator

Period: 1/2015-7/2016

Sponsor: Texas Department of Transportation (TxDOT)

Development of a Pavement Project Evaluation Index to Support the 4-Year Pavement Management Plan

Principal Investigator

Period: 9/2011-9/2013

Sponsor: Texas Department of Transportation (TxDOT)

Performance-Related Specifications for Pavement Preservation Treatments – Phase 1

Principal Investigator

Period: 7/2010-2/2012

Sponsor: National Cooperative Highway Research Program (NCHRP)

Advanced Quality Systems: Alternatives to the Use of Contractor Test Results: Phase 2

Principal Investigator

Period: 9/2009-7/2011

Sponsor: Federal Highway Administration (FHWA), through The Transtec Group

Advanced Quality Systems: Alternatives to the Use of Contractor Test Data: Phase 1

Principal Investigator

Period: 9/2008-9/2009

Sponsor: Federal Highway Administration (FHWA), through The Transtec Group

Performance-based Roadside Maintenance Specifications

Principal Investigator

Period: 9/2008-9/2010

Sponsor: Texas Department of Transportation (TxDOT)

Use of Micro Unmanned Aerial Vehicles (MUAVs) for Roadside Condition and Inventory Surveys

Principal Investigator

Period: 9/2009-9/2010

Sponsor: Southwestern University Transportation Center (SWUTC) – US Department of Transportation

Evaluation and Development of Pavement Scores, Performance Models, and Needs Estimates

Co-PI (Andrew Wimsatt PI)

Period: 9/2008-9/2011

Sponsor: Texas Department of Transportation (TxDOT)

Implementation of New Pavement Performance Prediction Models in PMIS

Co-Principal Investigator (Andrew Wimsatt PI)

Period: 9/2011-9/2012

Sponsor: Texas Department of Transportation (TxDOT)

At the University of Texas at El Paso

A Partnership for Advancing Technology in *Colonia* Housing: Access to Technology, Capital, and Knowledge

Co-Principal Investigator (Steve Cook PI)

Period: 2004-2008

Sponsor: Department of Housing and Urban Development (HUD)

Advanced Quality Systems: Determining Optimum Sample Sizes for Acceptance Sampling and Testing Plans

Principal Investigator

Period: 2007-2008

Sponsor: Federal Highway Administration (FHWA), through the Transtec Group

Enhancements to El Paso's GIS-based Infrastructure Management Systems

Principal Investigator

Period: 2007-2008

Sponsor: City of El Paso

Development of a Prototype GIS for Integrating Storm Water Drainage Infrastructure Data for El Paso

Principal Investigator

Period: 2007-2008

Sponsor: Geospatial Service Center/UTEP

Review of TxDOT's Pavement Forensic Studies

Principal Investigator

Period: 2006

Sponsor: Texas Department of Transportation (TxDOT), under Interagency Cooperation Contract

Synthesis of Pavement Design and Construction Requirements for Alternate Procurement Projects (Design-Build Contracts and Comprehensive Development Agreements)

Principal Investigator

Period: 2005

Sponsor: Texas Department of Transportation (TxDOT), under Interagency Cooperation Contract

At Applied Research Associates, Inc. (Research & Consulting Projects)

Field Trial of Performance-Related Specifications (PRS) for PCC Pavement in Tennessee

Principal Investigator

Period: 2003-2004

Sponsor: Federal Highway Administration (FHWA)

Beta Testing and Validation of HMA PRS

Task leader

Period: 2000-2004

Sponsor: National Cooperative Highway Research Program (NCHRP)

Development of the 2002 Guide for the Design of New and Rehabilitated Pavement Structures

Task leader

Period: 1998-2002

Sponsor: National Cooperative Highway Research Program (NCHRP)

Development of a Roadway Infrastructure Management System GIS Visual Model

Principal Investigator

Period: 2003-2004

Sponsor: Illinois State Toll Highway Authority (ISTHA)

Development and Implementation of PRS for highway JPCP Construction in California

Project Manager

Period: 2002-2003

Sponsor: California Department of Transportation (CALTRANS)

Determine Actual Lifecycle Costs of Highway Pavements

Principal Investigator

Period: 2002-2003

Sponsor: Innovative Pavement Research Foundation (IPRF)

Technical Guide for the Construction of Continuously Reinforced Concrete Pavement (CRCP)

Principal Investigator

Sponsor: Federal Highway Administration (FHWA)

Period: 2002-2003

Development and Implementation of Performance-Related Specifications (PRS) for Highway Jointed Plain Concrete Pavement (JPCP) Construction in Florida

Project Manager

Period: 2001-2003

Sponsor: Florida Department of Transportation

Enhancements to Illinois Pavement Management System

Project Manager

Period: 1998-2003

Sponsor: Illinois Department of Transportation

On-call Technical Assistance for Purdue University for the Development and Implementation of PRS for JPCP Construction in Indiana

Project Manager

Period: 2001-2003

Sponsor: Purdue University

Benefit-Cost Analysis for CRC Pavements

Principal Investigator

Sponsor: Concrete Reinforcing Steel Institute (CRSI)

Period: 2001-2002

Technical Assistance for University of Florida for the Investigation of Relationships between Cost and Quality in PRS

Principal Investigator

Period: 2002

Sponsor: Federal Highway Administration (FHWA)

Comparative Performance and Costs of In-service Highway Pavements

Project Manager

Period: 1998-2001

Sponsor: American Concrete Pavement Association (ACPA)

Performance of In-service Highway Pavements in Florida

Project Manager

Sponsor: Florida Concrete and Products Association (FC&PA)

Period: 1999-2000

Pavement Management System Implementation for the City of Livonia, Michigan

Research Engineer

Period: 1998-2000

Sponsor: City of Livonia, Michigan

Review of Life-Cycle Costing Analysis Procedures

Research Engineer

Period: 1997-1998

Sponsor: Ontario Ministry of Transportation (MTO), Canada

TEACHING & ADVISING

Courses Taught at Texas A&M University

- CVEN 624 Infrastructure Engineering and Management
Average class size: 14 students
Average students evaluation: 4.69 (Fall 15), 4.88 (Fall 2014), 4.64 (Fall 13), 4.89 (Fall 12), 4.52 (Fall 11), 4.96 (Fall 10), 4.36 (Fall 09)
- CVEN 303 Civil Engineering Measurement
Average class size: 53 students
Average students evaluation: 4.38 (Spring 16), 4.1 (Fall 15), 4.5 (Spring 15), 4.16 (Spring 14), 4.22 (Fall 13), 4.41 (Spring 13), 4.14 (Fall 10), 4.25 (Spring 10), 4.39 (Fall 09), 3.84 (Spring 09), 3.89 (Fall 08)
- CVEN 418/689 Tools for Highway Materials and Pavement Design (stacked course)
Average class size: 11 students

Average students evaluation: 4.10 for CVEN418 & 4.77 for CVEN689 (Spring 11), 4.92 for CVEN418 & 4.5 for CVEN689 (Spring 12)

- CVEN 403 Civil Engineering Surveying Practical Experience. Summer 12 (co-taught with instructors from industry).
- CVEN 489 Sensor Technology for the Built Environment. Summer 12 (co-taught with Drs. Hurlebaus, Cahill, Chang, & Socolofsky)

PhD Advisee at Texas A&M University (Committee Chair)

- Charles Gurganus, (expected 2017)
- Isaac Oti, (expected 2018)
- Salar Zabihi Siabil, Integration of Heuristics and Statistics to Improve the Quality of Network-Level Pavement Condition Data, (graduated 2016).
- Jose Rafael Menendez, Incorporating Risk and Uncertainty into Pavement Network Maintenance and Rehabilitation Budget Allocation Decisions, (graduated 2014).
- Litao Liu, A Methodology for Developing Performance-Related Specifications for Pavement Preservation Treatments, (graduated 2013).
- Siamak Saliminejad, GIS-Based Probabilistic Approach for Assessing and Enhancing Infrastructure Data Quality, (graduated 2012).

MS Advisee at Texas A&M University (Committee Chair)

- Sina Abbasgholipour, (expected 2018).
- Saurav Neupane, (expected 2017).
- Amir Rashed, Evaluation of Pavement Network Performance in Texas Considering Multiple Performance Metrics, (graduated 2016).
- Jing Li, Measuring the Effect of Uncertainty in Unit Cost and Pre-Treatment Condition on Pavement Maintenance and Rehabilitation Decisions, (graduated 2014).
- Paul John Narciso, Development of a Pavement Maintenance and Rehabilitation Project Formation and Prioritization Methodology that Reflects Agency Priorities and Improves Network Condition, (graduated 2013).
- Charles Gurganus, Bridging the Gap between Network and Project Selection Levels in Pavement Management, (graduated 2011).
- William S. Hart, Use of Micro Unmanned Aerial Vehicles in Transportation Infrastructure Condition Surveys, (graduated 2010).
- Debora (Brooke) Shelton Lindholm, Development of Quality Assurance Methods for Performance-Based Maintenance Contracts for Roadway Assets, (graduated 2010).
- Jubair Ahmed, Methods for Identifying Best-Value Bid for Performance-based Maintenance Contracts, (graduated 2010).
- Sujay Wani, Alternatives to the use of Contractor's Quality Control Data for Acceptance and Payment Purposes, (graduated 2010).

ME Advisee at Texas A&M University (with project report)

- Andrew Lange, Infrastructure Management program, (graduated 2016)
- Someshwar Katukuri, Retarding Aging of Asphalt Using Anti-Oxidant Additives (graduated 2016).
- Kiran Ravi, A Report on the Design of NC 55 pavement in Bayboro, NC (graduated 2015).
- Nathaniel V. Wood, White Paper on Engineered Cementitious Composite, (graduated 2013).
- Sunny K. Goklani, A GIS Framework for Reducing Carbon Footprint of Concrete Production in Texas, (graduated 2013).
- Sagar Kale, Statistical Analysis of the Effect of Acceptance Lot Size on Pavement Quality (graduated 2010).
- Roberto Alvarado Vazquez, Maintenance and Rehabilitation Plan for Texas A&M University Campus, (graduated 2010).

Graduate Committee Member at Texas A&M University

- Marccus Hendricks, Landscape Architecture and Urban Planning, PhD, graduated 2017
- Yu Chen, Civil Engineering, MS, graduated 2016
- Mustafa M. Cobanoglu, Civil Engineering, MS, graduated 2014.
- Bailey Hewes, Civil Engineering, MS, graduated 2013.
- Aishwarya Baranikumar, Civil Engineering, MS, graduated 2013.
- Narain Hariharan, Civil Engineering, MS, graduated 2013.
- Meng Ling, Civil Engineering, MS, graduated 2013.
- Yasser Koohi, Civil Engineering, Ph.D., graduated 2012.
- Brandon T. Pitre, Civil Engineering, MS, graduated 2012.

Undergraduate Research Assistants at Texas A&M University

- Joshua Rivera: Undergraduate Transportation Scholars Program (UTSP), Southwest Region University Transportation Center, summer 2011.
- Dyane Bates: Undergraduate Summer Research Grant (USRG), Dwight Look College of Engineering, summer 2010.
- Jennifer Tovar: Undergraduate Transportation Scholars Program (UTSP), Southwest Region University Transportation Center, summer 2010.
- Tom Dobson, Student worker appointment, fall 2010.
- Justin L. Lansdowne, Student worker appointment, spring 2009.

Undergraduate Students Advised at Texas A&M University: 41

Courses Taught at the University of Texas at El Paso

- CE 6301 Infrastructure Management
- CE 3313 Engineering Measurements

- CE 5324 Construction Management
- BE 3373 Engineering Probability and Statistical Models
- CE 6195 Civil Engineering Seminar

MS Advisee at the University of Texas at El Paso (Committee Chair)

- Mohamed Elgendy, Condition Assessment and Data Integration for GIS-Based Storm Water Drainage Infrastructure Management Systems, (graduated 8/2008).
- Brian Valenzuela, Assessment of Energy Efficiency in a Passive Solar Housing Development, (graduated 12/2007).
- Prashant Jalvi, Best Bid Identification in Design-Build Contracting Using Game Theory, (graduated 5/2006).
- Josue Machado, Assessment of Housing and Infrastructure Conditions in El Paso County Colonias, (graduated 5/2006).
- Lakshmi Velivelli, Construction Acceptance Methods for Concrete Pavement Based on Seismic Testing, (graduated 8/2005).

Graduate Committee Member at the University of Texas at El Paso: Gema Camacho, Srinivasa Rao Manduva, Yaqi Wanyan, Hua Yang, Gilda Lizeth Carrasco Martinez.

Undergraduate Research Assistants at the University of Texas at El Paso: Jesus Avila, Tania Balboa, Lorena Blanco, Julie Ann Flores, Christopher Genera, Alberto Hernandez, Iraki Ibarra, Alejandra Nunez, Albert Ortega, and Pablo Ruiz.

AWARDS

- Birdwell Excellence in Teaching Award (2014)
- TTI Research Diversity Bonus Award (2011)

SERVICES

Journal Editorial Services

ASCE Journal of Infrastructure Systems, Member of the Editorial Board, (2009 - Present).

Conference Organization

- Member of Scientific Committee for ASCE 2013 Green Streets, Highways and Development Conference, Austin, TX, November 2013.
- Member of Scientific Committee for ASCE 1st Transportation and Development Institute (T&DI) Congress: Advanced Technologies in Transportation Systems, Chicago, IL, March 2011.

Reviewer for Journals

ASCE Journal of Infrastructure Systems; ASCE Journal of Transportation Engineering; ASCE Journal of Construction Engineering and Management; Transportation Research Record; International Journal of Pavement Engineering; Journal of Environmental Management; Building and Environment Journal; Canadian Journal of Civil Engineering; Construction Management and Economics, Computer-Aided Civil and Infrastructure Engineering, Structure and Infrastructure Engineering.

Proposal Reviewer

- National Science Foundation (NSF): 2006, 2007, 2008, 2009, 2011, & 2014.
- Qatar National Research Fund (QNRF): 2013 & 2015

Department, College, & University Services

- Zachry Department of Civil Engineering, Division Head, Transportation & Materials Engineering, 9/2016-present.
- Zachry Department of Civil Engineering, Graduate Area Advisor, Materials area, 8/2012-8/2016.
- Zachry Department of Civil Engineering, Curriculum Committee, 8/2014-present.
- Zachry Department of Civil Engineering, Curriculum Assessment & Implementation Team (CAIT), 2013-present.
- Zachry Department of Civil Engineering, Coordinator for Surveying Program (upgraded equipment, hosted industry representatives, assisted in Survey Summer Camp, and conducted ABET mock and final reviews), 10/2008-present.
- Zachry Department of Civil Engineering Committees: Sensors Committee, member 2011; CEOB Reorganization Committee, member, 2016; Faculty Evaluation Criteria Committee, Chair, 2016.
- Advised Texas A&M University chapter of Engineers Without Borders on performing construction and topographical surveys using total station for their project in Costa Rica (5/2009, 2/2010)
- Zachry Department of Civil Engineering, Coordinated the Instructional Enhancement Fees (IEF) requests for the Materials Lab and the Surveying Lab, (FY 2009, FY 2010, and FY 2012).
- Dwight Look College of Engineering, Member of the Doctor of Engineering Admissions Committee, 10/2011-present.

National Committee Membership

- Member, Transportation Research Board Standing Committee on Geographic Information Science and Applications (2017-present).
- Member, Transportation Research Board Standing Committee on Pavement Management Systems (4/2014-present).
- Member, ASCE Infrastructure Systems Committee (ISC) (4/2009-present).
- Member, ASCE Highway Pavement Committee (HPC) (4/2009-present).
- Member, Transportation Research Board Committee on Portland Cement Concrete Pavement Construction (4/2004-4/2014).

- Member, Transportation Research Board Standing Committee on Management of Quality Assurance (4/2006-4/2012).

Societal Membership

- American Society of Civil Engineers (ASCE)
- Transportation Research Board (TRB), The National Academies of Sciences, Engineering, and Medicine.

Professional Licensing

Professional Engineer, Ohio (License No. 68391)