

Sanjaya P. Senadheera, P.D.

Associate Professor of Civil, Environmental and Construction Engineering

Contact Information

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Education

Ph.D. Civil Engineering, 1995, Texas A & M University, College Station.
M. S. Civil Engineering, 1990, Texas A & M University, College Station.
B.Sc. (Honors) Civil Engineering, 1981, University of Peradeniya, Sri Lanka

Honors, Awards and other Recognition

Inducted to the Texas Tech Teaching Academy, 2012
George T. and Gladys Abell-Hanger Faculty Award, TTU College of Engineering, 2008
Recipient of one of the five TTU faculty recognitions for outstanding service and dedication to Texas Tech by the TTU Forum Chapter of the Mortar Board National College Senior Honor Society, 2008
CE Department Nominee for College of Engineering Teaching Award, Fall 2005
Forum Chapter of Mortar Board Apple Polishing, Feb. 2005
Texas Tech Alumni Association New Faculty Award, 2004
TxDOT Top 10 Research Innovation Award for *Roadway Lighting Design by STV*, 2001
TxDOT Top 10 Research Innovation Award for *Seal Coat Constructability Review*, 1999
Merit Award, Professional Licensure Exam, Inst. of Civil Engineers, London, England, 1985

Experience in the Academic Research Administration Environment

Director, Texas Tech Center for Multidisciplinary Research in Transportation (TechMRT), 2015-
Transportation Area Coordinator, International University Partnership for the Establishment of Postgraduate Program in Civil Engineering & Construction Technology in Ethiopia
Associate Director, Southern Plains Transportation Center, USDOT Region 6 University Transportation Center
Interim Director, Texas Tech Center for Multidisciplinary Research in Transportation (TechMRT), 2012-2015)

Experience in the Academic Environment

Associate Professor, Tenured (2007-), Dept. of Civil, Env. & Construction Engineering, Texas Tech Univ.
Honorary Professor, (2018-), Dept. of Civil & Environmental Engineering, Jimma University, Ethiopia.
Assistant Professor, Tenure-Track (2001-07), Dept. of Civil & Env. Engineering, Texas Tech Univ.
Research Assistant Professor, Graduate Faculty, (1996-2001), Dept. of Civil Engineering, Texas Tech Univ.
Post-doctoral Research Associate (1994-96), Department of Civil Engineering, Texas Tech University

Professional Experience in the Industrial Environment

Business Analyst/Software Development Team Leader (1986-87), Data Management Systems Ltd., Sri Lanka
Works Manager, Building Components Group (1985-86), State Engineering Corporation of Sri Lanka
Design Engineer, Consultancy Group (1984-85), State Engineering Corporation of Sri Lanka
Project Engineer, Construction Group (1981-84), State Engineering Corporation of Sri Lanka

Research Grants

Funded (PI or Co-PI)

- 2017-19, The British Council, (\$1,078,935), Stephen Ekwaro-Osire, Joseph Aranha, Tewodros Ghebrab, Dave Louis, Gad Perry, **Sanjaya Senadheera** and Venkatesh Uddameri, CONTINUATION: Recruitment for International University Partnership for the Establishment of Postgraduate Programmes in Ethiopia
- 2016-18, The British Council, (\$1,098, 000), Stephen Ekwaro-Osire, Joseph Aranha, Tewodros Ghebrab, Dave Louis, Gad Perry, **Sanjaya Senadheera** and Venkatesh Uddameri, Recruitment for International University Partnership for the Establishment of Postgraduate Programmes in Ethiopia
- 2015-18, TxDOT, (\$2,628,198), **S. Senadheera**, Ronald Hedden, Darryl James, P. W. Jayawickrama, Rajesh Khare, Daan Liang and Hong Chao Zhang, Novel Material Systems for the Next Generation Pavement Infrastructure.
- 2013-19, USDOT, (\$645,000), **S. Senadheera**, P. W. Jayawickrama and H. Liu, Southern Plains Transportation Center (SPTC), USDOT Region 6 University Transportation Center.
- 2014-16, TxDOT, (\$281,470), **S. Senadheera**, Coordination of Services in Support of TxDOT's Research Program.
- 2014-16, TxDOT, (\$203,285), M. Won, **S. Senadheera** and P. Choi, Research on Joint Sealant Materials to Improve Installation and Performance.
- 2012-15, TxDOT, (\$416,428), W. A. Jackson, W. D. Lawson, K. A. Rainwater, A. N. Morse, **S. Senadheera**, D. Liang and W. Yang, Evaluation of Snow & Ice Control in Texas Roads.
- 2012-14, TxDOT, (\$142,789), **S. Senadheera** and W. D. Lawson, Seal Coat Quality: Does Low Cost Mean Low Quality?
- 2012, TxDOT, (\$70,000), Won, M.-C. and **S. Senadheera**, Optimizing Concrete Pavement Type Selection Based on Aggregate Availability
- 2012-14, TxDOT, (\$239,342), Nash, P. and **S. Senadheera**, Best Practices for TxDOT on Handling Wildfires
- 2011-12, TxDOT, (\$333,490), W. D. Lawson and **S. Senadheera**, Implementing the Ultra-High Pressure Water Cutter for Roadway Maintenance Applications
- 2010-11, TxDOT, (\$80,000), Hongchao Liu, **S. Senadheera** and P.T. Nash, Synthesis of Successful Bicycle Planning in Mid-size Cities
- 2010-11, TxDOT, (\$150,000), Hongchao Liu, Cynthia McKinney, **S. Senadheera**, Moon Won and Richard Zartman, Inter-Agency Contract: Technical Assistance to Lubbock District
- 2010-12, TxDOT, (\$146,691), Bill Lawson, P. W. Jayawickrama and **S. Senadheera**, Geotechnical Engineering Training: TxDOT GEO101 & GEO102.
- 2009-11, TxDOT, (\$126,915), **S. Senadheera**, Laboratory Evaluation of Constructability Issues with Surface Treatment Binder
- 2009-11, TxDOT, (\$180,348), M. Won, **S. Senadheera** and P.W. Jayawickrama, Rational Use of Terminal Anchorages in Portland Cement Concrete Pavement
- 2006-08, TxDOT, (\$157,515), P.W. Jayawickrama and **S. Senadheera**, Develop a New Testing and Evaluation Protocol to Assess Flexbase Performance using Strength of Soil Binder.
- 2007-08, TxDOT, (\$48,639), Bill Lawson, P. W. Jayawickrama and **S. Senadheera**, Geotechnical Engineering Training: TxDOT GEO101 & GEO102.
- 2005-06, TxDOT, (\$117,667 for 1 year), W. Lawson, **S. Senadheera** and M. Leaverton, Short-term Solutions to Bleeding Asphalt Pavements.
- 2004-06, TxDOT, (\$233,824 for 2 years), **S. Senadheera** and M. Leaverton, Constructability of Surface Treatments Constructed on Base Courses.
- 2003-06, TxDOT, (\$267,159 for 3 years), **S. Senadheera** and J. Kobza, Further Development of Binder Quality Assurance Program.
- 2003-04, TxDOT, (11,908 for 1 year), **S. Senadheera** (with Texas A&M University/TTI), Texas Seal Coat Manual Update

2001-03, TxDOT, (\$238,072 for 2 years), **S. Senadheera**, R. Wm Tock and S. Hossain, Develop Testing and Evaluation Protocol to Assess Seal Coat Binder-Aggregate Compatibility

2001-2003, TxDOT, (\$196,536 for 2 years), W. Lawson and **S. Senadheera**, Improving Edge Repair and Stabilization

2001-02, TxDOT, (\$6,050 for 1 year), K. Mulligan and **S. Senadheera**, Develop Report Format in GIS for TxDOT Odessa District

2001-03, TxDOT, (\$281, 727 for 2 years), R.S. Phelan, W.P. Vann, P.W. Jayawickrama, W.R. Burkett and **S. Senadheera**, Innovative Design and Construction Methods for Off-System Bridges

2000-01, TxDOT, (\$12,875 for 1 year), **S. Senadheera**, Standardized Seal Coat Performance Terminology

2000-01, TxDOT, (\$56,673 for 1 year), **S. Senadheera** and R. Wm Tock, Inorganic Additives to Reduce Concrete Pavement Spalling

2000-01, TxDOT, (\$168,717 for 2 years), P. Nash and **S. Senadheera**, Regional Workshops on Non-hazardous Recycled Materials

1999-2004, TxDOT, (\$1,391,681 for 6 years), R.S. Phelan and **S. Senadheera**, Effects of Wet Mat Curing and Earlier Loading on Bridge Deck Durability

1999-2000, TxDOT, (\$172,491 for 2 years), P. Nash, **S. Senadheera**, J. Leggoe and A. Jackson, Environmental Assessment of Traditional Construction Materials

1997-2000, TxDOT, (\$318,727 for 3 years), D. Gransberg, **S. Senadheera** and P.W. Jayawickrama, Seal Coat Constructability Review

1998-2000, TxDOT, (\$132,549 for 2 years), P.W. Jayawickrama, **S. Senadheera** and D. Gransberg, Comparative Analysis of Micro-Deval and Magnesium-Sulfate Soundness Tests

1998-2000, TxDOT, (\$281,910 for 2 years), P.W. Jayawickrama, D. Gransberg and **S. Senadheera**, Evaluation of Backfill Materials and Installation Methods for HDPE Pipe

1997-99, FHWA, (\$115,000 for 2 years), P. Nash, **S. Senadheera** and P.W. Jayawickrama, The Road to Recycling, FHWA Priority Technology Program

1997-99, TxDOT, (\$222,000 for 2 years), P.W. Jayawickrama, D. Gransberg and **S. Senadheera**, Use of Whole Tires and Fly Ash in Earth Retaining Structures

1998-99, TxDOT, (\$30,000 for 1 year), **S. Senadheera**, P.W. Jayawickrama, P. Nash, Pavement Forensic Study Support for TxDOT

1997-98, TxDOT, (\$56,651 for 1 year), **S. Senadheera**, P.W. Jayawickrama, P. Nash and D. Gransberg, Evaluate the Use for Scrap Tires in Transportation Applications

1996-98, TxDOT, (\$458,000 for 3 years), D. Gransberg, B. Green, **S. Senadheera** and A. Ertas, Evaluation of Roadway Lighting Systems Designed by STV Method

1996-97, TxDOT, (\$74,850 for 1 year), D. Gransberg and **S. Senadheera**, Turn-key Construction

Funded (Participated at Texas A&M University, College Station)

1990-94, TxDOT, Evaluation of the Performance of Texas Pavements Made with Different Coarse Aggregates, PI: B.F. McCullough (UT Austin), Co-PI: D.G. Zollinger (Texas A&M)

1987-89, United States Air Force, Modeling Stress and Strain States in Pavement Structures Incorporating Thick Granular Layers, PI: W.W. Crockford, Co-PIs: R.L. Lytton and D.N. Little

Pending Proposals

2019-22, USDOT, Sensors and Materials Approaches to Rural Transportation: Toward Emergent Resilience (SMART-ER) Shankar, V. (Principal), with Co-Principals **Senadheera, S.**, Li, C., Ren, B., Liu, H., Jayawickrama, P., Cleveland, T., Hewett, R., Ancell, B., Xiang, Y., Holder, D., Betha, R., Bae, S.-W., Lin, T., Gramm, K., Venkataraman, N., \$7,500,000.

2019-22, National Science Foundation, Using Data Analytics for Targeted Design of Asphalt/Designer Asphalts from Data Analysis, Rajesh Khare (Principal), Co-Principals: Ranadip Pal, Gordon Christopher and **Sanjaya Senadheera**, Designing Materials to Revolutionize and Engineer our Future (DMREF), Solicitation NSF 19-516.

Publications

Refereed Journal Articles

Okuyucu, O., Jayawickrama, P., **Senadheera, S.** (2019). Mechanical Properties of Steel-Fiber Reinforced Self-Consolidating Controlled Low-Strength Material for Pavement Base Layers, *Journal of Materials in Civil Engineering, ASCE*, 31(9), DOI: 10.1061/(ASCE)MT.1943-5533.0002816

Suraj D. Khadka, Priyantha W. Jayawickrama and **Sanjaya P. Senadheera** (2018). Strength and Shrink/Swell Behavior of Highly Plastic Clay Treated with Geopolymer, *Transportation Research Record I-II*, DOI: 10.1177/0361198118797214, National Research Council, Washington DC.

Mahmoud A. Mahrous, Branimir Šegvić, Giovanni Zanoni, Suraj D. Khadka, **Sanjaya Senadheera** and Priyantha W. Jayawickrama (2018). The Role of Clay Swelling and Mineral Neoformation in the Stabilization of High Plasticity Soils Treated with the Fly Ash- and Metakaolin-Based Geopolymers, *Minerals*, 146; DOI:10.3390/min8040146 .

Bhagya Athukorallage, Tharanga Dissanayaka, **Sanjaya Senadheera** and Darryl James, (2018) Performance analysis of incorporating phase change materials in asphalt concrete pavements, *Construction and Building Materials*, Volume 164, Pages 419-432

Cui, Y., Liang, D., **Senadheera, S.**, Lawson, W., Song, L., Nejat, A. A (2017). Case Study of Expenditure on Snow and Ice Control for Roadway Maintenance. *ASCE J. of Cold Regions Eng.* Vol. 31(4), DOI: 10.1061/(ASCE) CR.1943-5495.0000133.

Lawson, W., Goehl, D., and **Senadheera, S.** (2015). Implementation of Ultra High Pressure Water Cutting for Treatment of Flushed Chip Seals in the U.S.” *International Journal of Pavement Engineering*, 2481, 75-82. DOI: 10.1080/10298436.2015.1036867.

Lawson, W., **Senadheera, S.**, Surlis, J. (2015). Effectiveness and Durability of Ultra High Pressure Water Cutting Treatment of Flushed Chip Seals in the United States. *Journal of the Transportation Research Board*, 2481, 75-82.

Ryu, S. W., Jaiswal, H., Choi, S., **Senadheera, S.**, Jayawickrama, P., Won, M.-C. (2012). Rational Use of Terminal Anchorages in Portland Cement Concrete Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, 2305, 62-73.

Xu, H., Liu, H., Fernando, H., **Senadheera, S.** Volume-to-Capacity Estimation of Signalized Road Networks for Metropolitan Transportation Planning. *Transportation Research Record, Journal of The Transportation Research Board*, National Research Council, Washington, DC.

William D. Lawson and **Sanjaya Senadheera**, “Chip Seal Maintenance: Solutions for Bleeding and Flushed Pavement Surfaces”, *Transportation Research Record 2108, Journal of The Transportation Research Board*, National Research Council, Washington, DC., 2009

Hassan A. Ghanem, R. Scott Phelan, **Sanjaya Senadheera** and Kevin R. Pruski, “Chloride Ion Transport in Bridge Deck Concrete Under Different Curing Durations”, *Journal of Bridge Engineering*, Vol. 13, Issue 3, pp 218-225, ASCE, 2006.

Douglas Gransberg, Ilker Karaca and **Sanjaya Senadheera**, “Calculating Roller Requirements for Chip Seal Projects”, Vol. 130(3), *Journal of Construction Engineering and Management*, ASCE, May/June 2004.

Gransberg, D.D., **Sanjaya Senadheera** and I. Karaca, “Seal Coat Constructability Program,” *1999 Transactions*, American Assoc. of Cost Engineers, Denver, June 1999.

Mainul Khan, **Sanjaya Senadheera**, Douglas Gransberg and Roman Stemprock, “Influence of Pavement Surface Characteristics on Nighttime Visibility of Objects”, in *Traffic Signing, Visibility, and Rail-Highway Grade Crossings*, *Journal of the Transportation Research Board* 1692, Nov. 1999.

Sanjaya Senadheera, Priyantha W. Jayawickrama and A.S.M. Ashek Rana, “Crushed Hydrated Fly Ash as a Construction Aggregate”, *Geotechnical Special Publication No. 79*, Geo Congress '98, ASCE Annual Congress, Boston, October 1998.

Sanjaya P. Senadheera and Dan G. Zollinger, “A Framework for Incorporation of Spalling in the Design of Concrete Pavements”, *Design and Rehabilitation of Pavements*, *Journal of the Transportation Research Board*, 1449, 1994.

Dan G. Zollinger, **Sanjaya P. Senadheera**, and Tianxi Tang, “Spalling of Continuously Reinforced Concrete Pavements”, Vol. 120(3), *Journal of Transportation Engineering*, ASCE, May/June 1994.

Tianxi Tang, Dan G. Zollinger and **Sanjaya P. Senadheera**, “Analysis of Concave Curling in Concrete Slabs”, Vol. 119(4), *Journal of Transportation Engineering*, ASCE, July/Aug.1993.

Papers under Review

Khadka, S. D., Jayawickrama, P., Senadheera, S., Segvic, B. Stabilization of high sulfate montmorillonitic and vermiculitic soil using metakaolin and fly ash based geopolymer activated with lime and gypsum. *Transportation Geotechnics*.

Working Papers

Tharanga Dissanayaka and **Sanjaya Senadheera**. Use of Phase Change Materials in Asphalt Binders to Minimize the Extreme High Temperature in Flexible Pavement Surfaces, to be submitted to *Construction and Building Materials*.

Manil. C. Hettiwatte and **Sanjaya Senadheera**. Randomly-Distributed Linear Inclusions to Enhance Performance in Composite Materials; A Review Focused on Fiber Geometric Parameters, to be submitted to *Construction and Building Materials*.

Osman Okuyucu, Priyantha Jayawickrama and **Sanjaya Senadheera**. On Curing of Controlled Low-Strength Material for Improved Engineering Performance, Journal to be determined.

Book Chapters

Sanjaya Senadheera. (2016) *Impact of Hydraulic Fracturing on Transportation Infrastructure*, Chapter 10 in *Hydraulic Fracturing Impacts and Technologies: Multidisciplinary Perspective*, Edited by Venkatesh Uddameri, Audra Morse and Kay J. Tindle, CRC Press, Boca Raton, Florida. USA, pp. 175-186

Other Refereed Publications

Sanjaya Senadheera, “Some Geotechnical Issues Related to Mechanistic Road Structure (Pavement) Design”, Feature Article, Newsletter, Sri Lanka Geotechnical Society, A Member of the International Society for Soil Mechanics and Geotechnical Engineering, Vol. 2005, No. 2, October 2005

Peer-Reviewed Proceedings

M. Dalton Menn, Malitha Rajapaksha, and **Sanjaya Senadheera**, (2019). Evaluation of Mechanical Response of an Industry-Scale Flexible Pavement System. *Proceedings*, 98th Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Manil C. Hettiwatte, Rohan Dassanayake, **Sanjaya Senadheera**, Priyantha Jayawickrama and Nouredine Abidi (2019). Waste Cotton Fiber Derivatives as Reinforcements for Portland Cement Concrete. *Proceedings*, 98th Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Manil C. Hettiwatte, Rohan Dassanayake, **Sanjaya Senadheera**, Priyantha Jayawickrama and Nouredine Abidi (2019). Waste Cotton Fiber Derivatives as Reinforcements for Portland Cement Concrete. *Proceedings*, 98th Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Dissanayaka, Tharanga and **Sanjaya Senadheera** (2018). Assessing the Use of Phase Change Materials to Control Temperature in Asphalt Pavements. *Proceedings*, Paper Number: 18-03308, 97th Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Khadka, Suraj D., Priyantha W. Jayawickrama and **Sanjaya P. Senadheera** (2018). Strength and Shrink/Swell Behavior of Highly Plastic Clay Treated With Geopolymer, *Proceedings*, TRB Paper 18-04882, 97th Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Osmani, F., Hettiwatte, M., Kshirsagar, S., **Senadheera S.** and Zhang, H. C. (2017), Development of an Environmental Life-Cycle Assessment (LCA) Protocol for Flexible Pavements that Integrates Life-Cycle Components to a Proprietary Software, *Proceedings*, Pavement Life-Cycle Assessment Symposium, Champaign, Illinois, April 2017.

Senadheera, S. (2012). A Pathway for Effective Teaching of Sustainable Material Selection to Civil Engineers. *Symposium Proceedings*. Granta Design 2012 Materials Education Symposium, San Luis Obispo, CA.

Senadheera, S., Lawson, W. (2012). *Evaluation of the Effectiveness of Ultra High Pressure (UHP) Water Cutter to Treat Flushed Asphalt Pavements*. Proceedings, 91st Annual Meeting of the Transportation Research Board, National Research Council, Washington DC.

Andrew Tubb and **Sanjaya Senadheera**, Laboratory Investigation of the Influence from Aggregate and Climate on Stiffness Development in a Seal Coat Emulsion, Proceedings, Transportation Research Board Annual Meeting, Washington DC, 2011.

Sanjaya Senadheera, Capacity Building for Sustainable Engineering Practice: A Civil Engineering Education Perspective, 1st International Conference on Sustainable Built Environment, Kandy, Sri Lanka 2010.

Sanjaya Senadheera, Material Systems for Sustainable Civil Engineering Design: A Course Syllabus, Delivery and Student Feedback, 2nd Intl. national Conference on Sustainable Construction Materials and Technologies, Ancona, Italy 2010.

P. W. Jayawickrama, Michael Merrick and **Sanjaya Senadheera**, Laboratory Evaluation of a New Test Procedure for Measuring Flexural Strength of Base Binders, Proceedings, Transportation Research Board Annual Meeting, Washington DC, 2010.

Sanjaya Senadheera, Material Systems for Sustainable Civil Engineering Design: A Course Syllabus, Delivery and Student Feedback, *Proceedings*, for Second International Conference on Sustainable Construction Materials and Technologies, Università Politecnica delle Marche, Ancona, Italy 2010

P. W. Jayawickrama, Michael Merrick and **Sanjaya Senadheera**, Laboratory Evaluation of a New Test Procedure for Measuring Flexural Strength of Base Binders, *Proceedings*, Transportation Research Board 2010 Annual Meeting in Washington DC, 2010.

Sanjaya Senadheera, “A Course on Sustainable Materials Use in Civil Engineering: Syllabus, Delivery and Student Feedback”, Annual Meeting of The American Society For Engineering Education (ASEE), Austin, Texas, 2009.

William D. Lawson and **Sanjaya Senadheera**, “Chip Seal Maintenance: Solutions for Bleeding and Flushed Pavement Surfaces”, Annual Meeting of the Transportation Research Board, National Research Council, Washington, D.C., 2009

S. Senadheera and B. Yazgan, “Incorporating Construction and Performance Conditions to Develop a Testing Protocol to Select Seal Coat Aggregate-Binder Combinations, *Proceedings*, First International Sprayed Sealing Conference on Cost-Effective High Performance Surfacing, Adelaide, Australia, 2008

W. Lawson, T. Garza, Jr., **S. Senadheera** and G. Claros, “TxDOT Sprayed Seal Operations and Research: Cost-Effective Surfaces for Texas Roads,” *Proceedings*, First International Sprayed Sealing Conference on Cost-Effective High Performance Surfacing, Adelaide, Australia, 2008

P. C. Perera and **S. Senadheera**, “Converging Towards a Comprehensive and Coherent Global Engineering Education System (CCGEES)”, *Proceedings*, 6th ASEE Global Colloquium in Engineering Education, October 2007.

S. Senadheera, A. Rana and P. Jayawickrama, Characterization of Granular Materials Containing Glass Cullet for Use in Embankments, *Proceedings*, 86th Annual Meeting of the Transportation Research Board, Washington, D.C., January 2007. (60% Senadheera)

M. Vignarajah and **S. Senadheera**, An Investigation of Prime Coat Effectiveness in Surface Treatments Constructed on Base, *Proceedings*, 86th Annual Meeting of the Transportation Research Board, Washington, D.C., January 2007. (50% Senadheera)

S. Senadheera and Audra N. Morse, “Current Research in Engineering Education – A Civil Engineering Perspective”, Under Review, *Proceedings*, American Society of Civil Engineers Texas Section Fall Meeting, San Antonio, 2006.

M. Vignarajah, **S. Senadheera**, W.P. Dayawansa, and J.M. Berg, “A Sustainable Distributed Sensor Network for State Estimation of Particulate Composites”, *Proceedings*, First International Conference on Industrial and Information Systems (ICIIS), Peradeniya, Sri Lanka, August 2006

S. Senadheera, “Surface Treatments in Asphalt Pavements – A Systems View”, *Proceedings*, Tenth International Conference in Asphalt Pavements, Quebec City, Quebec, Canada, August 2006

S. Senadheera, A. Rana and P. Nash, “Characterization of the Behavior of Granular Road Material Containing Glass Cullet”, *Proceedings*, Seventh International Conference on the Bearing Capacity of Roads, Railways and Airfields, Trondheim, Norway, June 2005

Hassan Ghanem, R. Scott Phelan, **Sanjaya Senadheera** and Kevin Pruski, “Chloride Ion Transport in Bridge Deck Concrete Under Different Curing Durations”, *Proceedings*, 84th Annual Meeting of the Transportation Research Board, National Academy of Sciences, 2005.

Hector Garcia, R. Scott Phelan, **Sanjaya Senadheera** and Kevin Pruski, “A Comparison of Concrete Strength Development between Bridge Deck Cores and Concrete Test Cylinders under Varying Curing Durations”, *Proceedings*, 84th Annual Meeting of the Transportation Research Board, National Academy of Sciences, 2005.

Baris Yazgan and **Sanjaya Senadheera**, “A New Testing Protocol for Seal Coat (Chip Seal) Material Selection”, *Proceedings*, 83rd Annual Meeting of the Transportation Research Board, National Academy of Sciences, 2005.

R. Scott Phelan, Tigist Belete and **Sanjaya Senadheera**, “Effect of Curing Duration on Scaling of Laboratory Concrete Bridge Deck Samples”, *Proceedings*, 83rd Annual Meeting of the Transportation Research Board, National Academy of Sciences, Washington D.C., 2004.

Aruna Amarasiri, **Sanjaya Senadheera** and R. Scott Phelan, “Fracture Properties of Bridge Deck Concrete”, *Proceedings*, ASCE Texas Section Spring 2002 Meeting.

Ashek Rana, **Sanjaya Senadheera**, Phillip Nash and Rebecca Davio, “Long-Term Monitoring of Recycled Material Performance”, *Proceedings*, ASCE Texas Section, Spring 2000 Meeting.

Kiran Munukutla and **Sanjaya Senadheera**, “Scrap Tires as a Construction Material”, *Proceedings*, ASCE Texas Section, Spring 2000 Meeting.

Mujahid Akram and **Sanjaya Senadheera**, “Use of Geotextiles in Pavement Construction and Rehabilitation”, *Proceedings*, ASCE Texas Section, Spring 2000 Meeting.

Phil Nash and **Sanjaya Senadheera**, “Glass Cullet in Pipe Drains, Embankments and Backfills”, *Proceedings*, The Road to Recycling Conference, Austin, Texas, January 1997

Technical Notes

Douglas D. Gransberg and **Sanjaya P. Senadheera**, “Design-Build Contract Award Methods for Transportation Projects”, Technical Note No. 18154, Vol. 125(6), *Journal of Transportation Engineering*, ASCE, November/December 1999.

Training Courses

Lawson, William D., Priyantha Jayawickrama and Sanjaya Senadheera, *Learning Objectives, GEO102, Geotechnical Applications for Transportation Projects*, Texas Department of Transportation, August 2007.

Lawson, William D., Priyantha Jayawickrama and Sanjaya Senadheera, *Student Manual, GEO102, Geotechnical Applications for Transportation Projects*, Texas Department of Transportation, August 2007.

Lawson, William D., Priyantha Jayawickrama and Sanjaya Senadheera, *Instructor Manual, GEO102, Geotechnical Applications for Transportation Projects*, Texas Department of Transportation, August 2007.

Lawson, William D., *Presentations Part 3: Roadways, GEO102, Geotechnical Applications for Transportation Projects*, Texas Department of Transportation, August 2007.

Intellectual Property (e.g., copyrights, patents)

Provisional Patent Granted

Khadka, S., Jayawickrama, P., Senadheera, S.(2018), Modified Geopolymer for Stabilization of high plastic clay.

Patent Applications

Randall Scott Phelan and Sanjaya Senadheera (2003), “Rapid Protection System for Freshly Placed Concrete and a Method of Practicing the System.” *Patent Application Publication No. US 2003/0097813 A1*.

Posters

Phelan, R.S., **Senadheera, S.**, and Garcia, H. (2001), "Bridge Deck Durability Research in Texas." *Proceedings*, 5th National Workshop on Bridge Research in Progress – Sponsored by the National Science Foundation, organized by the University of Minnesota, Minneapolis, October 2001.

Guest Lectures/Invited Presentations

Senadheera, S. (2019), "Phase Change Materials: A Novel Concept towards Sustainable Roadways through Alteration of Service Temperature" Invited Session Kenote Presentation, International Conference on Civil Engineering and Applications (ICCEA 2019), University of Moratuwa, Sri Lanka, July 25-26.

Senadheera, S. (2017), "New Paradigms for Flexible Pavements in Transportation Infrastructure," Invited Guest Kenote Presentation, International Conference on Advances in Highway Engineering & Transportation Systems (ICAHETS 2017), Negombo, Sri Lanka, July 21-22.

Senadheera, S. (2017), "The Rapidly Changing Global Education Landscape," Invited Lecture, The Headquarters of The Institution of Engineers, Sri Lanka, July 26 2017, Colombo, Sri Lanka,.

Senadheera, S. (2012), "What the Best Teachers Do! - My Teaching Style and Experiences", Panel Discussion, Teaching, Learning & Professional Development Center, Texas Tech University, Lubbock, Texas,.

Senadheera, S. (2012), "Best Practices for TxDOT on Handling Wildfires," 2012 Maintenance/Traffic Operations Conference, Texas Department of Transportation, Waco, Texas.

Invited Presentation to Sri Lanka Geotechnical Society Forum, Colombo, Sri Lanka, "Geotechnical Aspects Related to Road Structure Design" (2005)

Invited Presentation on Seal Coat Constructability Review to TxDOT/Texas Transportation Institute Transportation Short Course (2000)

Invited Presentations on Seal Coat Constructability Review to Texas Hot Mix Asphalt Pavement Association Southern Region Seal Coat Committee Meeting in Corpus Christi (2000),

Invited Presentations on Seal Coat Constructability Review to Texas Hot Mix Asphalt Pavement Association, Western Region Seal Coat Committee Meeting in Abilene (1999)

Invited Presentation on Hydrated Fly Ash to Seminar Sponsored by De Pauw Fly Ash, Inc. of Amarillo held in Lubbock, Texas (1996).

Training Courses Presented to Professional Groups

8-Hour Course on Roadways, *Geotechnical Engineering Training: TxDOT GEO102*, Austin, Texas, Aug. 2007

Workshops Developed and Presented to Professional Groups

3 Training Workshops on Surface Treatment Binder Constructability for TxDOT professionals, 2011

8 Training Workshops on Surface Treatment Constructability for TxDOT professionals, 2006

7 Training Workshops on Recyclable Material Usage for TxDOT professionals, 1998

12 Seal Coat Constructability Review training seminars for TxDOT professionals, 1997

Conference Presentations

Senadheera, S., Dissanayaka, T, 28th International ARRB Conference, Australian Road Research Board, Brisbane, Australia, "Extending Pavement Service Life by Mitigating Extreme Surface Temperatures using Phase Change Materials," International, peer-reviewed/refereed. (May 1, 2018).

Senadheera, S., Webinar of Sustainable Pavements Subcommittee AFD30(2), Transportation Research Board, National Research Council, Webinar, "Novel Materials to Improve Pavement Sustainability," International. (June 8, 2018).

Senadheera, S., 2018 ATLAS T3 International Conference, The Academy of Transdisciplinary Research and Advanced Studies, Cluj-Napoca, Romania, "Being Transdisciplinary – An Essential Approach to Create Sustainable Physical Infrastructure for Humanity," International, peer-reviewed/refereed, published in proceedings. (June 5, 2018).

Lawson, W., **Senadheera, S.**, Surles, J., (2015) TRB 94th Annual Meeting, Transportation Research Board,

Washington DC, "Effectiveness and Durability of Ultra High Pressure Water Cutting Treatment of Flushed Chip Seals in the United States," International, peer-reviewed/refereed.

Senadheera, S. (2014), Fracturing Impacts and Technologies Conference, Texas Tech University/Air & Waste Management Association, Lubbock, Texas, "Impact of Hydraulic Fracturing on Transportation Infrastructure", Paper presented at the 93rd Annual Meeting of the Transportation Research Board, National Academy of Sciences, Washington DC.

Senadheera, S. (2012), "A Pathway for Effective Teaching of Sustainable Material Selection to Civil Engineers," Peer-reviewed poster presented at the 3rd North American Materials Education Symposium in San Luis Obispo, California, Sponsored by Granta Design Limited, Cambridge, United Kingdom.

Senadheera, S. and Lawson, W. (2012), "Evaluation of the Effectiveness of Ultra High Pressure (UHP) Water Cutter to Treat Flushed Asphalt Pavements," Paper presented at the 91st Annual Meeting of the Transportation Research Board, National Academy of Sciences, Washington DC.

P. C. Perera and **S. Senadheera**, "Converging Towards a Comprehensive and Coherent Global Engineering Education System (CCGEES)", 6th ASEE Global Colloquium in Engineering Education, October 2007.

S. Senadheera, A. Rana and P. Jayawickrama, Characterization of Granular Materials Containing Glass Cullet for Use in Embankments, 86th Annual Meeting of the Transportation Research Board, Washington, D.C., January 2007. (60% Senadheera)

M. Vignarajah and **S. Senadheera**, An Investigation of Prime Coat Effectiveness in Surface Treatments Constructed on Base, 86th Annual Meeting of the Transportation Research Board, Washington, D.C., January 2007. (50% Senadheera)

S. Senadheera, "Surface Treatments in Asphalt Pavements – A Systems View", Tenth International Conference in Asphalt Pavements, Quebec City, Quebec, Canada, August 2006

S. Senadheera, A. Rana and P. Nash, "Characterization of the Behavior of Granular Road Material Containing Glass Cullet", Seventh International Conference on the Bearing Capacity of Roads, Railways and Airfields, Trondheim, Norway, June 2005

Baris Yazgan and **Sanjaya Senadheera**, "A New Testing Protocol for Seal Coat (Chip Seal) Material Selection", 83rd Annual Meeting of the Transportation Research Board, National Academy of Sciences, 2005.

Ashek Rana, **Sanjaya Senadheera**, Phillip Nash and Rebecca Davio, "Long-Term Monitoring of Recycled Material Performance", ASCE Texas Section, Spring 2000 Meeting.

Kiran Munukutla and **Sanjaya Senadheera**, "Scrap Tires as a Construction Material", ASCE Texas Section, Spring 2000 Meeting.

Other Presentations

Technical Paper at 81st Transportation Research Board Annual Meeting (2002) on *Environmental Suitability of Traditional Construction and Maintenance Materials*

Paper for Andrew Budek at the ACI Convention in Phoenix (2002) *Why the Eye isn't Good Enough: Crack Width Measurement Methods for Concrete*.

Selected Research Reports

Senadheera, S., Hedden, R., James, D., Jayawickrama, P., Khare, R., Liang, D., Zhang, H.-C., Athukorallage, B. *Novel Material Systems for the Next Generation of Flexible Pavement Structures*. Austin, Texas: Texas Department of Transportation (TxDOT).

Senadheera, S., Henderson, R., Surlis, J., Lawson, W. Implementing the Ultra-High Pressure Water Cutter for Roadway Maintenance Applications. *Final Report* (Report # 5-5230-1 ed.). Lubbock, Texas: Texas Tech Center for Multidisciplinary Research in Transportation (TechMRT).

Hassan Ghanem, Montasheema Afroze, R. Scott Phelan, and **Sanjaya Senadheera**, "RCPT and Ponding Tests," *Research Report 2116-R3*, Submitted to the Texas Department of Transportation, February 2009.

Sanjaya Senadheera, R. Scott Phelan, Aruna Amarasiri, Hari Aamidala, "Fracture, Flexural Strength and Shrinkage," *Research Report 2116-R4B*, Submitted to the Texas Department of Transportation, September 2009.

Hector Garcia-Monzon, **Sanjaya Senadheera**, R. Scott Phelan, “Compressive Strength, Maturity and Strength Durability Index,” *Research Report 2116-R4A*, Submitted to the Texas Department of Transportation, December 2009.

Sanjaya Senadheera, Ph.D., Michael Leaverton, P.E., and M. Vignarajah, “Constructability Review of Surface Treatments Constructed on Base Courses” Draft Research Report 0-5169-1, Texas Dept. of Transportation, March 2007.

Sanjaya Senadheera and M. Vignarajah, “Draft Updated Specification for Surface Treatments Constructed on Base Courses”, Draft Research Product 0-5169-P4, Texas Dept. of Transportation, March 2007.

Sanjaya Senadheera and M. Vignarajah, “Draft Updates to TxDOT Surface Treatment Training Manual”, Draft Research Product 0-5169-P3, Texas Dept. of Transportation, March 2007.

Sanjaya Senadheera and M. Vignarajah, “Design and Construction Guide for Surface Treatments Over Base Courses”, Draft Research Product 0-5169-P2, Texas Dept. of Transportation, March 2007.

William D. Lawson, Michael Leaverton and **Sanjaya Senadheera**, “Maintenance Solutions for Bleeding and Flushed Pavements Surfaced with a Seal Coat or Surface Treatment”, Research Report 0-5230-1, Texas Dept. of Transportation, February 2007.

Sanjaya P. Senadheera, Ph.D., John E. Kobza, Ph.D., P.E., Qing Xie and Wickrama Galagoda, “Further Development of Binder Quality Assurance Program”, Draft Research Report 0-4681-1, Texas Dept. of Transportation, January 2007.

Sanjaya P. Senadheera, Ph.D., John E. Kobza, Ph.D., P.E., Qing Xie and Wickrama Galagoda, “A Framework for TxDOT Binder Quality Management”, Draft Research Product 0-4681-P1, Texas Dept. of Transportation, January 2007.

Sanjaya Senadheera, Richard Wm. Tock, M. Shabbir Hossain, Baris Yazgan, and Subrata Das, “A Testing and Evaluation Protocol to Assess Seal Coat Binder-Aggregate Compatibility”, Research Report 0-4362-1, Texas Dept. of Transportation, October 2006

Sanjaya Senadheera, Richard Wm. Tock, M. Shabbir Hossain, Baris Yazgan, and Subrata Das, “Draft Updated Specifications for Seal Coats and Surface Treatments”, Research Product 0-4362-P3, Texas Dept. of Transportation, September 2005

Sanjaya Senadheera and Michael Leaverton, “Constructability Review of Surface Treatments Constructed on Base Courses - Regional Training Workshop for TxDOT Districts”, Research Product 0-5169-P1, Texas Dept. of Transportation, April 2006

Sanjaya Senadheera, Richard Wm. Tock, M. Shabbir Hossain, Baris Yazgan, and Subrata Das, “Draft Test Procedures for Seal Coat Aggregate-Binder Compatibility”, Research Product 0-4362-P1, Texas Dept. of Transportation, September 2005

R. Scott Phelan, W. Pennington Vann, P.W. Jayawickrama, William R. Burkett, Daniel Rasband, Michael Leaverton and **Sanjaya Senadheera**, “Innovative Design and Construction Methods for Off-System Bridges: Final Report, Report No. 0-4375-TT-3, Texas Dept. of Transportation, November 2003

Scott Phelan and **Sanjaya Senadheera**, “Effects of Wet Mat Curing and Earlier Loading on Long-Term Durability of Bridge Decks: Survey Results”, Research Report 2116-1, Texas Dept. of Transportation, February 2001.

Sanjaya Senadheera and Javed Riyad Khan, “Standardized Seal Coat Terminology Pamphlet”, Research Implementation Report 1787-P, Texas Dept. of Transportation, February 2001.

Sanjaya Senadheera, Douglas Gransberg and Tolga Kologlu, “Seal Coat Field Manual”, Research Report 1787-P, Texas Dept. of Transportation, February 2001.

Audra Morse, Phillip T. Nash, **Sanjaya Senadheera**, Andrew Jackson, Richard Tock, Jeremy Leggoe and Tony Mollhagen, “Environmental Characteristics of Traditional Construction and Maintenance Materials”, Draft Final Report Number 4974-1, Texas Dept. of Transportation, February 2001.

Kiran Sonti, **Sanjaya Senadheera**, P. W. Jayawickrama, Phillip Nash and Douglas Gransberg, “Evaluate the Uses for Scrap Tires in Transportation Facilities”, Final Report Number TX-97/0-1808-1F, Texas Dept. of Transportation, January 2001.

Sanjaya Senadheera, Douglas Gransberg, Olkan Cuvalci, Bobby Green and Karl Burkett, “Evaluation of Roadway Lighting Systems Designed by Small Target Visibility (STV) Methods,” Interim Report Number TX-97/1704-8, Texas Dept. of Transportation, December 2000.

Sanjaya Senadheera, Douglas Gransberg and Tolga Kologlu, “Recommended Modifications to the Seal Coat Specifications from Statewide Seal Coat Constructability Review”, Interim Report Number TX-97/0-1787-4, Texas Dept. of Transportation, March 2000.

Sanjaya Senadheera, Douglas Gransberg and Tolga Kologlu, “Statewide Seal Coat Constructability Review”, Final Report Number TX-97/0-1787-3, Texas Dept. of Transportation,

Sanjaya Senadheera, A.S.M. Ashek Rana, Phillip T. Nash and R.T Ervin, “Road to Recycling”, Final Research Report Number TX-96/1509-2, Texas Dept. of Transportation, November 1999.

Dissertations and Theses

Sanjaya P. Senadheera, “Spalling in Concrete Pavements: Its Relationship to Coarse Aggregate in Concrete and a Framework for Design,” Doctoral Dissertation, Texas A&M University, College Station, May 1995.

Sanjaya P. Senadheera, “Analysis for Design of Thick Granular Bases Under Heavy Aircraft Loading,” Master’s Thesis, Texas A&M University, College Station, August 1990.

Teaching Experience

New Graduate Courses Developed

- CE 2201: Materials for Constructed Facilities (Course upgrade from 1 SCH to 2 SCH)
- CE 5356: Sustainable Material Systems and Engineering Design
- CE 5351: Advanced Flexible Pavement Materials
- CE 5352: Advanced Flexible Pavement Design
- CE 5353: Pavement Management Systems

Undergraduate Courses Taught

- CE 4361: Transportation Engineering
- CE 4351: Pavement Materials and Design
- CE 4331: Material Systems for Sustainable Design
- CE 4331: Special Problems in Civil Engineering
- CE 3210: Procedures in Problem Analysis II (Probability and Statistics)
- CE 3321: Introduction to Geotechnical Engineering
- CE 3303: Mechanics of Solids
- CE 2301: Statics
- CE 2101: Construction Materials Laboratory

Graduate Course Taught

- CE 5351: Advanced Pavement Materials
- CE 5352: Advanced Pavement Design
- CE 5353: Pavement Management Systems
- CE 5356: Sustainable Material Systems and Engineering Design

Undergraduate Student Advising

From 2003 to 2015, Dr. Senadheera has served as one of approximately 12 undergraduate faculty advisors in the department. During this period, he advised approximately 55-60 civil engineering undergraduates.

Graduate Student Advising

As Chair of Doctoral Dissertation Committee at Texas Tech University:

1. Malitha Rajapaksha, Ph.D. student, Expected graduation August 2020
2. Manil Hettiwatte, Ph.D., August 2019
Dissertation Topic: Natural Fibers to Enhance Material Performance for Sustainable Built Environment
3. Osman Okuyucu, Ph.D., May 2019 (as Co-Chair with P.W. Jayawickrama)
Dissertation Topic: Engineering Characterization and Adaptation of Controlled Low Strength Material (CLSM) Containing High Pozzolan Contents for Civil Engineering Applications
4. Tharanga Dissanayaka, Ph.D., May 2019
Dissertation Topic: Evaluation of Novel Asphalt Binder Modifiers and Additives to Improve Extreme Temperature Rheological Properties for Enhanced Pavement Performance
5. Hector Garcia-Monzon, Ph.D., August 2006
Dissertation Topic: Strength Durability Index (SDI) for Improved Concrete Strength and Durability Assessment
Structural Civil Engineer; US Department of Transportation, Federal Highway Administration.
6. A. S. M. Ashek Rana, Ph.D., May 2004
Dissertation Topic: Evaluation of Recycled Material Performance in Highway Applications and Optimization of their Use

- Currently Pavement Engineer, Arizona Department of Transportation
7. Aruna Amarasiri, Ph.D., December 2003
Dissertation Topic: A study of fracture properties of medium-strength concrete using notched-cylinders
Currently Research Fellow at the Department of Civil Engineering, Monash University, Melbourne, Australia.

As Chair of Doctoral Dissertation Committee at Jimma University, Ethiopia:

1. Enyew Asres, Ph.D. Candidate, Expected graduation: December 2019;
Dissertation Topic: Sustainable Pavement Systems
2. Murad Mohammed, Ph.D. Candidate, Expected graduation: December 2019
Dissertation Topic: Affordable Public Transportation for Addis Ababa, Ethiopia, with Bus Rapid Transit Systems (As Co-Chair with Dr. Rui Guo)
3. Alemineh Sorsa, Ph.D. Candidate, Expected graduation: December 2019
Dissertation Topic: Evaluating the Use of Geo-Reinforcement to Improve Performance of Flexible Pavements on Soft Soils in Ethiopia
4. Damtew Tsige, Ph.D. Candidate, Expected graduation: December 2019
Dissertation Topic: Using Plant Root Systems to Enhance Earth Slope Stability along Highway Corridors in Ethiopia
5. Teyba Wedajo, Ph.D. Candidate, Expected graduation: December 2019
Dissertation Topic: Utilization of Waste Plastic to Enhance Pavement Performance

As Chair of Master's Thesis Committee:

1. Andrew Tubb, Master of Science, December 2011
Thesis Topic: Laboratory Investigation of the Influence from Aggregate and Climate on Stiffness Development in Seal Coat Asphalt Emulsions
Currently Engineering Assistant, Amarillo District, Texas Department of Transportation
2. Subrata Das, Master of Science, December 2004
Thesis Topic: Characterization of Asphalt-Aggregate Interface in Seal Coats
Consulting Engineer
3. Baris Yazgan, Master of Science, December 2003
Thesis Topic: A New Testing Protocol for Seal Coat Aggregate-Binder Compatibility
Currently in the construction business in Turkey
4. Javed Riyad Khan, Master of Science, December 2003
Thesis Topic: Influence of Aggregate Surface Characteristics on Concrete Pavement Performance
Currently serving as Project Engineer, Dannenbaum Engineering, Inc., McAllen, Texas
5. Sang-Yun Lee, Master of Science, August 2002
Thesis Topic: Petrographic Evaluation of Bridge Deck Concrete Durability
Currently serving as Concrete Petrographer, Construction Technology Laboratories, Skokie, Illinois, which is the premier concrete testing laboratory in the United States
6. Montasheema Afrose, Master of Science, May 2002
Thesis Topic: Effect of Curing Time on Bridge Deck Concrete Durability
Currently a Maintenance Engineer in Bishop, CA working for Caltrans (California State DOT)
7. Ashfia Yasmin, Master of Science, December 2000
Thesis Topic: An Analysis of Practices for Concrete Bridge Deck Durability
Currently serving as a Project Engineer with Structural Engineers, Inc., Los Altos, California
8. Md. Mosharraf Hossain, Master of Science, August 1998
Thesis Topic: Influence of Moisture Content in Granular Bases on Pavement Performance
Currently serving as Associate for AXIS Design Group, New Jersey
9. Mainul Hasan Khan, Master of Science, August 1998
Thesis Topic: Influence of Pavement Surface Characteristics on Light Reflectance Properties
Currently serving as Engineer, Texas DOT, Houston District

As Chair of Master of Engineering Committee:

1. Matthew Dalton Menn, Master of Science, May 2018
Research Topic: Novel Applications of Strain Gages in Asphalt Concrete Systems
2. Daniel Buntoro, Master of Science, December 2013

- Research Topic: Evaluation of Asphalt Binders to Assess Flushing Potential in Chip Seals
Currently serving as Laboratory Engineer at West Texas Paving, Inc., Lubbock, Texas
3. Scott Huson (as co-chair), Master of Science, May 2013
Research Topic: Performance of Highway Snow & Ice Control Chemicals
 4. Lei Niu, Master of Science in Civil Engineering, December 2011
Report Topic: Factors Influencing the Constructability of Seal Coat Emulsions
Currently serving as Engineer at China Highway Engineering Consulting Group Limited
 5. Amit Bakane, Master of Science in Civil Engineering, December 2008
Report Topic: Flexural Strength of Intermediate-Size Flexbase Beam Specimens
Currently serving as Engineer at Leighton Associates, California
 6. Jerry Eapen, Master of Civil Engineering, December 2007
Report Topic: Prediction of Creep and Shrinkage in Concrete Using ACI 209R-02
 7. Wickrama Galagoda, Master of Civil Engineering, August 2007
Report Topic: Investigation of Asphalt Binder Quality on Flexible Pavement Construction
Currently serving as Engineer of Fugro Consultants, Houston, Texas
 8. Muthulingam Vignarajah, Master of Civil Engineering, May 2007
Report Topic: An Analytical Model to Predict Drying of Pavement Base Materials.
 9. Manav Nanda, Master of Civil Engineering, December 2003
Report Topic: A comparison of some durability characteristics of bridge deck mix designs
Currently working as Project Engineer, Kiewit & Sons, Inc., Florida
 10. Abdulrahman Alhabshi, Master of Civil Engineering, May 2002
Report Topic: A Framework for SiteManager[®]-ArcGIS[™] Data Interface
Deceased. Worked for 4 years as a Project Engineer for Bechtel, Inc.
 11. Mohamed Al-Masud, Master of Civil Engineering, May 2002
Report Topic: Modeling of CRC Pavements using LTPP Data
Currently serving as Applications Engineer, Bentley Systems, Inc., Houston, Texas
 12. Kiranmayi Sonti, Master of Civil Engineering, August 1999
Report Topic: Use of Scrap Tires in Civil Engineering Applications
 13. Shaikh Z. Rahman, Master of Civil Engineering, December 1998
Report Topic: Geometric Design Considerations of Super-Two Highway
Currently serving as Geotechnical Engineer, Terracon Consultants, Inc., Nashville, Tennessee
 14. Mustaque Ahmed Rumi, Master of Civil Engineering, August 1998
Report Topic: A Framework for Evaluation of Pavement Designs in Design-Build Contracts
Currently serving as Project Engineer, Klotz Associates, Inc., Houston, Texas

As Member of Doctoral Dissertation Committee:

1. Fei Yu, Ph.D. Student, CECE, Expected graduation August 2019
2. Niwanthi Dissanayake, Ph.D. Candidate, Expected graduation May 2019
Dissertation Topic: Cellulose Dissolution in Ionic Liquids
3. Puttipan Seraneprakarn, Ph.D. Candidate, Expected graduation May 2019
Dissertation Topic: New Methods in Crash Severity Analysis
4. Shuaiqi Huang, Puttipan, Ph.D. Candidate, Expected graduation May 2019
Dissertation Topic: Random parameter models with nonlinear functional form and heterogeneous overdispersion
5. Bo Pang, Doctor of Philosophy, August 2017
Dissertation Topic: Capacity Analysis of Signalized Alternative Interchanges
6. Dayong Wu, Doctor of Philosophy, May 2016
Dissertation Topic: Building Life-Cycle Resilience of Critical Transportation Infrastructures: A Theoretical Framework and Practical Applications
7. Wesley Kumfer, Doctor of Philosophy, May 2015
Dissertation Topic: Analysis of the effects of demographic and driver behavior variables on traffic safety and crash prediction
8. Dali Wei, Doctor of Philosophy, May 2014
Dissertation Topic: Data-driven modeling and transportation data analytics
9. Wujun Zhou, Doctor of Philosophy, August 2013

- Dissertation Topic: Effect of pavement support condition on CRCP behavior and performance
10. Yiqing Wei, Doctor of Philosophy, May 2013
Dissertation Topic: Development of equivalent surcharge loads for the design of soil nailed segment of MSE/soil nail hybrid retaining walls based on results from full-scale wall instrumentation and finite element analysis
 11. Harshita Jaiswal, Doctor of Philosophy, December 2012
Dissertation Topic: Rational Use of Terminal Anchorages in Portland Cement Concrete Pavements
 12. Huaxin Gong, Doctor of Philosophy, December 2010
Dissertation Topic: Addressing the Asymmetry of Traffic in Microscopic and Macroscopic Flow Models: Mathematical Modeling and Validation by Field Data
 13. Shuaiyu Chen, Doctor of Philosophy, December 2007
Dissertation Topic: Real-Time Traffic Signal Control for Over-Saturated Networks
 14. Abdulrahman Alhabshi, Doctor of Philosophy, December 2006
Dissertation Topic: Neural Network Approach to Predict Skid Resistance of Pavements
 15. Biju Thomas, Doctor of Philosophy, December 2001
Dissertation Topic: Neural Network Approach to Predict Skid Resistance of Pavements
 16. Prasanna Rachakatla, Doctor of Philosophy, December 2000
Dissertation Topic: Application of Relational Database Principles for Rating Bituminous Coarse Aggregates with Respect to Frictional Performance
 17. Hsiu-Chung (Edward) Lee, Doctor of Philosophy, December 1997
Dissertation Topic: An Analysis of Long-Term Seasonal Interaction Between Slab-on-Ground Foundation and Expansive Soils

As Member of Master's Thesis Committee:

1. Hiron Fernando, Master of Science in Civil Engineering, December 2012
Thesis Topic: Volume to Capacity Estimation of Signalized Road Networks for Metropolitan Transportation Planning
2. Wesley Kumfer, Master of Science in Civil Engineering, December 2011
Thesis Topic: Successful bicycle policy guidelines and audit for midsize cities
3. Hoonil Ill Won, Master of Science, August 2011
Thesis Topic: The Evaluation of Bonded Continuously Reinforced Concrete Overlay over Distressed Jointed Concrete Pavement
4. Adinath Godse, Master of Science, August 2008
Thesis Topic: Synthesis of Technologies, Costs, Infrastructure and Design Innovatives for Comprehensive BRT Systems
5. Michael Merrick, Master of Science, August 2008
Thesis Topic: Development of a New Test Procedure to Evaluate the Flexural Strength of Flexible Base Binder Materials Used in Roadway Construction
6. Debakanta Mishra, Master of Science, August 2006
Thesis Topic: An Investigation of Water Intrusion at Bridge Ends
7. Albert Ayenu-Prah, Master of Science, December 2004
Thesis Topic: Effect of the Chemical Composition of Compaction Water on the Performance of Soil Subgrades and Embankments
8. Hassan Ghanem, Master of Science, August 2004
Thesis Topic: Chloride Ion Transport in Bridge Deck Concrete under Different Curing Durations
9. Hari Aamidala, Master of Science, December 2003
Thesis Topic: Effects of Curing on Shrinkage Cracking in Bridge Deck Concrete
10. Shome Shankar Dey, Master of Civil Engineering, August 2003
Thesis Topic: In-situ Vitrification for Slope Stabilization
11. Ran Kamiyama, Master of Landscape Architecture, May 2003
Thesis Topic: Analysis and Evaluation of Bicycle Route Networking in Lubbock
12. Hector Garcia-Monzon, Master of Science, May 2003
Thesis Topic: Maturity of Concrete Strength Development
13. Mohammed Didarul Alam, Master of Science, August 2000
Thesis Topic: Constructability Review and Economic Analysis for the Installation of Large Diameter HDPE Drainage Pipe.

14. Taya Ann Retterer, Master of Science, May 2000
Thesis Topic: Gravity and Mechanically Stabilized Earth Walls using Whole Scrap Tires
15. Frank Phillips, Master of Science, May 2000
Thesis Topic: Comparative Analysis between the Magnesium Sulfate Soundness and Micro-Deval Tests in the Evaluation of Bituminous Aggregates.

As Member of Master of Engineering Committee:

1. Daulatrao Mahadik, Master of Civil Engineering, December 2009
Report Topic: Measurement of Flexural Strength of Soil base Using Third Point Loading
2. Sriram Reddy, Master of Civil Engineering, August 2008
Report Topic: A Critical Review of Base Binder Flexometer Procedure
3. Himanshu Waikar, Master of Civil Engineering, May 2008
Report Topic: Terminal Anchorage Systems in PCC Pavements
4. Appa Rao Hoare, Master of Civil Engineering, December 2003
Report Topic: Feasibility of Using the Micro-Deval Test Method in Aggregate Quality Control
5. Umut Isler, Master of Civil Engineering, August 2000
Report Topic: In-Situ Vitrification of Subgrade Soils
6. Ilker Karaca, Master of Engineering, May 1999
Report Topic: Analysis of Statewide Seal Coat Constructability Review
7. Emin Silay, Master of Engineering, December 1998
Report Topic: Benefit-Cost Analysis for Improved 2-Lane, 2-Way Highway Sections

Service

Service to the Department

Departmental Activities

Director, Asphalt Laboratory
Member, Department Chair Search Committee, 2013
Chair, Awards Committee, 2011-14
Chair, Transportation Engineering Faculty Search Committee, 2012
Member, Curriculum Committee, since 2007
Undergraduate student advisor, since 2003
Member, ABET Committee, 2005, 2012-
Member, HEAF Committee, since 2004
Chair, Information Technology Committee, 2003-2011
Member, Geotechnical Engineering Faculty Search Committee, 2006
Member, Transportation Faculty Search Committee, 2004
Member, Awards Committee, 2004-05
Member, Recruiting and Public Relations Committee, since 1998

Development of Department Laboratory Infrastructure

Asphalt Laboratory

Created and now directs the asphalt research laboratory of the Department. The Laboratory has 1200 ft² of laboratory space and is equipped to conduct the national standard Superpave™ testing of asphalt concrete mixtures and binders. Its equipment repertoire includes Dynamic Shear Rheometer, Bending Beam Rheometer, Rotational Viscometer, Gyrotory Compactor, Ignition Oven and Spectrophotometer.

Concrete Materials (Bridge Deck Durability) Laboratory

Co-created the bridge deck durability research laboratory. This laboratory was developed with support from Texas Department of Transportation as a part of research project 0-2116: *Effect of Wet-Mat Curing on Durability of Concrete Bridge Decks*, and includes the following equipment.

- Concrete petrographic analysis and imaging system
- Concrete freeze-thaw test
- Rapid chloride penetration test

Civil Engineering Materials Laboratory

Repeated load (resilient modulus) testing of granular materials

Developed capability to conduct resilient modulus testing of granular materials in the department.

Size-effect fracture test apparatus for concrete beams

Developed the experimental set-up to conduct size-effect fracture tests of Portland cement concrete beams by estimating the fracture toughness and the size of effective fracture process zone in concrete.

Fatigue fracture test on concrete beams

Developed the capability to conduct repeated load fracture tests on concrete beams.

Service to the College

Director, Texas Tech Center for Multidisciplinary Research in Transportation (TechMRT), 2015-
Interim Director, Texas Tech Center for Multidisciplinary Research in Transportation (TechMRT), 2012-2015)
Teaching Awards Committee, 2011-2013
Enrollment Management Committee, 2012-2013
Student Assessment Committee, 2012-2013
Digital Measures Committee, 2010-2011
Academic Programs Committee, 2007-2010
Undergraduate Programs Committee, 2005-07
Awards Committee, 2004-05

Service to the University

Faculty Advisor, TTU Raider Cricket Club, 2012- .

Member, Texas Tech Electrical and Computer Engineering Department Graduate Program Review Committee

Texas Tech University Faculty Incentive Grant Review Panel, 3-year term 2002-2005

Service to the Community

Mentor, Dunbar Junior High Future City Project, Fall 2008

Coordinator, Dunbar Junior High Future City Project, Fall 2006, 2007

Advisor, Dunbar Junior High Future City Project, Fall 2004

Judged the Regional Science and Engineering Fair for elementary school students, 2004

Service to the State

Member, Texas DOT Technical Advisory Panel on Pavements, 1996-2012

Service to the Profession

Professional Memberships

Member, American Society of Civil Engineers (ASCE)

Member, American Society for Engineering Education (ASEE)

Affiliate Member, Transportation Research Board (TRB)

Professional Society Activities

Chair, Technology Transfer and Conferences Task Group, Sustainable Pavements Subcommittee, Transportation Research Board, Washington DC

Coordinator of Branch Activities, International Society for Concrete Pavements, 2005-06

Coordinator of Materials Section for the ACI Pavement Design and Construction Guide, 2004-06

Member, American Concrete Institute Committees 325 (Pavements), 221 (Aggregates), 308 (Curing), 215 (Fatigue)

Member, American Society for Engineering Education Committees on Civil Engineering, Education Research and Methods (ERM) and K-12 Education

Professional Registration

Passed the Professional Licensure Examinations conducted by The Institution of Engineers, Sri Lanka, to achieve Chartered Engineer Status (P.E. Equivalent), 1986

Passed the Professional Licensure Examinations conducted by The Institution of Civil Engineers, London, England to achieve Chartered Engineer Status (P.E. Equivalent), 1985

Professional Affiliations

Member, American Society of Civil Engineers (ASCE)

Member, American Society for Engineering Education (ASEE)

Member Affiliate, Transportation Research Board (TRB)

Consulting

Consultant to the Garson Lehman Group Councils on investment decisions in the Construction Materials Industry, since 2004

Provided consulting services (with Dr. William D. Lawson) on equipment prototype for treatment of flushed asphalt pavements to AquaMax Devco Limited, Wellington, New Zealand, 2012

Provided preliminary consultations to OSHA (Lubbock office) on construction accident, 2005

Consulted by the TTU Physical Plant on concrete deterioration in underground service tunnels, 2003