Curriculum Vitae

Rifat Bulut

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	College of Architecture
	Texas A&M University
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I. Present Research Interests

Phone:

Built environment-natural systems interaction Climate change effects on civil infrastructure systems Geotechnical hazards sensing, monitoring, and modeling Remote sensing; Synthetic Aperture Radar (SAR) Machine learning Data Analytics Sensors Nano- and micro-characterization of civil engineering materials Unsaturated soils Soil-structure interaction Numerical modeling

II. Present Teaching Interests

Soil Mechanics Soils in Construction Construction Materials Mechanics of Materials Materials Science and Engineering Geotechnical Engineering Foundation Engineering Soil-Structure Interaction Numerical Methods in Engineering Remote Sensing in Infrastructure Systems

III. Education

PhD	Civil Engineering, Texas A&M University, College Station, 2001
M.S.	Civil Engineering, Texas Tech University, Lubbock, Texas, 1996
B.S.	Civil Engineering, Middle East Technical University, Ankara, Turkey, 1993

IV. Appointments

08/24-Present	Professor, Department of Construction Science, Texas A&M University
07/18-07/24	Professor, School of Civil and Environmental Engineering, Oklahoma State University
07/12-07/18	Associate Professor, School of Civil and Environmental Engineering, Oklahoma State
	University
08/06-07/12	Assistant Professor, School of Civil and Environmental Engineering, Oklahoma State
	University
08/03-08/06	Research Associate, Texas Transportation Institute, College Station, Texas
11/01-08/03	Geotechnical Engineer, Fugro South, Inc., Dallas, Texas
05/99-11/01	Research Assistant, Department of Civil Engineering, Texas A&M University, College
	Station, Texas
01/98-05/99	Teaching Assistant, Department of Civil Engineering, Texas A&M University, College
	Station, Texas
08/96-12/97	Research Assistant, Department of Civil Engineering, Texas A&M University, College
	Station, Texas
01/94-08/96	Research Assistant, Department of Civil Engineering, Texas Tech University, Lubbock,
	Texas

*Internship positions during undergraduate education are not listed, but available upon request.

V. Publications

*Denotes students/research assistants under Bulut's supervision. Google Scholar citations: 2177; Google Scholar h-index: 18; Google Scholar i10-index: 37

A. BOOK EDITOR-IN-CHIEF

- Bulut, R., Yu, X., and Yang, S.-R. (2016). "Advances in Numerical and Experimental Analysis of Transportation Geomaterials and Geosystems for Sustainable Infrastructure," ASCE Geotechnical Special Publication No. 257, ISBN : 978-0-7844-8000-7
- 2. Bulut, R. and Hsu, S.-C. (2014). "Advances in Transportation Geotechnics and Materials for Sustainable Infrastructure," *ASCE Geotechnical Special Publication No. 250*, ISBN: 978-0-7844-1359-3
- Bulut, R., Tsukamoto, Y., Deng, A., Katsumi, T., and Kokusho, T. (2011). "Advances in Unsaturated Soil, Geo-Hazard, and Geo-Environmental Engineering," *ASCE Geotechnical Special Publication No.* 217, ISBN: 978-0-7844-7628-4

B. BOOK CO-EDITOR-IN-CHIEF

1. Zhang, X., Chu, J., and Bulut, R. (2014). "Soil Behavior and Geomechanics," *ASCE Geotechnical Special Publication No. 236*, ISBN: 978-0-7844-1337-1

C. BOOK CHAPTER

1. Bulut, R. and Leong, E.C. (2009). "Indirect Measurement of Soil Suction," *In Laboratory and Field Testing of Unsaturated Soils*, Publisher: Springer, Editors: A. Tarantino, E. Romero, and Y.-J. Chui

D. PEER-REVIEWED JOURNAL ARTICLES

- Javid*, H.A. and Bulut, R. (2023). "Equilibrium Suction Prediction Model for Subgrade Soils in Oklahoma," *International Journal of Geomechanics*, 23(10), <u>https://doi.org/10.1061/IJGNAI.GMENG-7076</u>
- 2. Tabassum*, N. and Bulut, R. (2023). "Residential House Foundations on Expansive Soils in Changing Climate," *Cityscape: A Journal of Policy Development and Research, 25(1): 199-212*
- Hou, G., Muraleetharan, K.K., Panchalogaranjan, V., Moses, P., Javid*, A., Al-Dakheeli*, H , Bulut, R., Campos, R., Harvey, S., Miller, G., Boldes, K., and Narayanan, M. (2023). "Resilience Assessment and Enhancement Evaluation of Power Distribution Systems Subjected to Ice Storms, *Reliability Engineering & Systems Safety, 230*, <u>https://doi.org/10.1016/j.ress.2022.108964</u>
- Al-Dakheeli*, H., Bulut, R., Garland, G.S., and Clarke, C.R. (2021) "Utilization of Blast-Furnace Slag as a Standalone Stabilizer for High Sulfate-Bearing Soils," *ASCE Journal of Materials in Civil Engineering*, 33(10), <u>https://doi.org/10.1061/(ASCE)MT.1943-5533.0003880</u>
- Al-Dakheeli*, H., Arefin*, S., Bulut, R., and Little, D. (2021). "Effectiveness of Ionic Stabilization in the Mitigation of Soil Volume Change Behavior," *Transportation Geotechnics*, <u>https://doi.org/10.1016/j.trgeo.2021.100573</u>
- Arefin*, S., Al-Dakheeli*, H., and Bulut, R. (2021). "Stabilization of Expansive Soils Using Ionic Stabilizer," *Bulleting of Engineering Geology and the Environment*, 80(3), DOI: 10.1007/s10064-021-021179-5
- Amer*, O.M. and Bulut, R. (2020). "Nonlinear Determination of Suction Compression Index in Expansive Soils for Heave Prediction," ASCE Journal of Geotechnical and Geoenvironmental Engineering, 146(10)
- 8. Chen*, L., Bulut, R., and Zaman, M. (2020), "A study of Tensile Stress with Suction by Restrained Ring Method, *Transportation Geotechnics*," 23, <u>https://doi.org/10.1016/j.trgeo.2019.100306</u>
- Al-Dakheeli*, H. and Bulut, R. (2019) "Interrelationship between Elastic Deformation and Soil-Water Characteristic Curve of Expansive Soils," ASCE Journal of Geotechnical and Geoenvironmental Engineering, 145(4), <u>https://doi.org/10.1061/(ASCE)GT.1943-5506.0002020</u>
- Al-Dakheeli*, H. and Bulut, R. (2019). "Interpretation of Desiccation Soil Cracking in the Framework of Unsaturated Soil Mechanics," *Geotechnical Engineering Journal of the SEAGS &* AGSSEA, 50(1): 74-80
- Liu, N., Huang, Q., Ma, Y., Bulut, R., Peng, J., Fan, W., and Men, Y. (2017). "Experimental Study of a Segmented Metro Tunnel in a Ground Fissure Area," *Soil Dynamics and Earthquake Engineering*, 100: 410-416
- 12. Chen*, L. and Bulut, R. (2017). "Development and Application of a New Tensile Stress Model for Expansive Soils," *Geotechnical and Geological Engineering Journal*, 35(3): 1067-1077
- Chen*, L. and Bulut, R. (2017). "Numerical Analysis of Effects of Cracks on Moisture Diffusion Coefficient of Unsaturated Soils," *International Journal of Geomechanics*, 17(8), <u>http://ascelibrary.org/doi/10.1061/%28ASCE%29GM.1943-5622.0000868</u>
- 14. Soltani, H., Muraleetharan, K.K., Bulut, R., and Zaman, M. (2016). "Prediction of Soil Suction Using Measured Climatic Data," *Environmental Geotechnics Journal*, <u>https://doi.org/10.1680/jenge.15.00064</u>

- 15. Chen*, L. and Bulut, R. (2016). "Numerical Analysis of Horizontal Moisture Barriers in Pavements Constructed on Expansive Soils," *Procedia Engineering*, 143: 229-236
- Liu, N., Liu, J.-T., Huang, Q.-B., Han, D.-D., and Bulut, R. (2015). "Seismic Response of Segmented Metro Tunnel with Flexible Joints Passing Through Ground Fissures," *Journal of Traffic and Transportation Engineering (China)*, 15(4): 34-42. [Only Abstract in English]
- Koc*, M. and Bulut, R. (2014). "Assessment of a Sessile Drop Device and a New Testing Approach for Measuring Contact Angles on Aggregates and Asphalt Binders," ASCE Journal of Materials in Civil Engineering, 26(3): 391-398
- Rayudu*, S. and Bulut, R. (2013). "Influence of Various Polishing Levels on Direct Contact Angle Measurements on Limestone Rock," *International Journal of Pavements*," 13(1-2-3)
- 19. Kittu*, A.J., Bulut, R., and Harimkar, S. (2013). "Effects of Surface Roughness of Granite Rock on Direct Contact Angle Measurements," *International Journal of Pavements*, 13(1-2-3)
- Al-Madhhachi*, A.T., Fox, G.A., Hanson, G.J., Tyagi, A.K., and Bulut, R. (2013). "Mechanistic Detachment Rate Model to Predict Soil Erodibility due to Fluvial and Seepage Forces," *Journal Hydraulic Engineering*, 140(5)
- Al-Madhhachi*, A.T., Hanson, G.J., Fox, G.A., Tyagi, A.K., and Bulut, R. (2013). "Measuring Soil Erodibility Using Laboratory "mini" JETs," *Transactions ASABE*, 56(3): 901-910
- Al-Madhhachi*, A.T., Hanson, G.J., Fox, G.A., Tyagi, A.K., and Bulut, R. (2013). "Deriving Parameters of a Fundamental Detachment Model for Cohesive Soils from Flume and Jet Erosion Tests," *Transactions ASABE*, 56(2): 489-504
- Mabirizi*, D. and Bulut, R. (2010). "A Unified Testing Method for Measuring Unsaturated Soil Drying and Wetting Diffusion Coefficients in Laboratory," *Transportation Research Record: Journal of the Transportation Research Board*, No. 2170, pp. 109-118, Transportation Research Board of the National Academies, Washington, D.C.
- Kassem, E., Masad, E., Lytton, R.L., Bulut, R. (2009). "Measurement of the Moisture Diffusion Coefficient of Asphalt Mixtures and Its Relationship to Mixture Composition," *International Journal of Pavement Engineering*, 10(6): 389-399
- 25. Bulut, R. and Leong, E.C. (2008). "Indirect Measurement of Suction," *Journal of Geotechnical and Geological Engineering*, 26(6): 633-644
- Masad, E., Zollinger, C., Bulut, R., Little, D.N., Lytton, R.L. (2006). "Characterization of Moisture Damage Using Surface Energy and Fracture Material Properties," *Journal of the Association of Asphalt Paving Technologists, AAPT*, 75: 713-732
- 27. Kassem, E., Eyad, M., Bulut, R., Lytton, R.L. (2006). "Measurements of Moisture Suction and Diffusion Coefficient in Hot-Mix Asphalt and Their Relationships to Moisture Damage," *Transportation Research Record: Journal of the Transportation Research Board*, No. 1970, pp. 45-54, Transportation Research Board of the National Academies, Washington, D.C.
- Long, X., Aubeny, C.P., Bulut, R., Gay, D.A., Lytton, R.L. (2006). "Two-Dimensional Moisture Flow-Soil Deformation Model for Application to Pavement Design," *Transportation Research Record: Journal of the Transportation Research Board*, No. 1967, pp. 121-131, Transportation Research Board of the National Academies, Washington, D.C.
- Hong, G.T., Bulut, R., Aubeny, C.P., Jayatilaka, R., Lytton, R.L. (2006). "Design Model for Roughness and Serviceability of Pavements on Expansive Soils," *Transportation Research Record: Journal* of the Transportation Research Board, No. 1967, pp. 103-111, Transportation Research Board of the National Academies, Washington, D.C.

- Hong, G.T., Aubeny, C.P., Bulut, R., and Lytton, R.L. (2006). "Comparative Design Case Studies of Pavement Performance on Expansive Soils," *Transportation Research Record: Journal of the Transportation Research Board*, No. 1967, pp. 112-120, Transportation Research Board of the National Academies, Washington, D.C.
- Bulut, R. and Wray, W.K. (2005). "Free Energy of Water Suction in Filter Papers," ASTM Geotechnical Testing Journal, 28(4): 355-364

E. PEER-REVIEWED TRANSPORTATION RESEARCH BOARD OF NATIONAL ACADEMIES CONFERENCE PROCEEDINGS

- Hossain, Z., Bairgi, B., Zaman, M., Bulut, R., and Sumpter, B. (2016). "Evaluation of Static Contact Angles and Moisture Resistance of Organoclay-modified Asphalt Binders," *Transportation Research Board, 95th Annual Meeting Compendium of Papers*, Transportation Research Board of the National Academies, Washington, D.C.
- Koc*, M. and Bulut, R. (2014). "Characterization of Warm Mix Asphalt Additives Using Direct Contact Angle Measurements and Surface Free Energies," *Transportation Research Board, 93th Annual Meeting Compendium of Papers*, Transportation Research Board of the National Academies, Washington, D.C.
- Koc*, M. and Bulut, R. (2012). "Initial Assessment of a New Device & Testing Method for Measuring Contact Angles on Aggregates," *Transportation Research Board, 91st Annual Meeting Compendium of Papers*, Transportation Research Board of the National Academies, Washington, D.C.
- Bulut, R., Aubeny, C.P., Lytton, R.L., Sood, E., Thakur, A. (2006). "Evaluation of Moisture Diffusion Coefficient for Design of Pavements on Expansive Soils," *Transportation Research Board*, 85th *Annual Meeting Compendium of Papers*, Transportation Research Board of the National Academies, Washington, D.C.

F. PEER-REVIEWED JOURNAL ARTICLES SUBMITTED AND UNDER REVIEW

- Tarhuni, F., Uddin, M.S., Hossain, Z., Al-Dakheeli*, H., and Bulut, R. (2023). "Improvement of Poor Subgrade Soils and Embankments Using Rice Husk Ash and Hydrated Lime as Stabilizing Agents," Submitted to *Journal of the Transportation Research Board*
- Javid*, H.A. and Bulut, R. (2023). "Tree Classification and Tree Failures from Ice Storms using High Resolution Satellite Imagery and Hybrid Change Detection Technique," Submitted to *Canadian Journal of Remote Sensing*
- 3. Javid*, H.A. and Bulut, R. (2023). "Predicting van Genuchten Soil Water Diffusivity of Undisturbed Soil in Oklahoma," Submitted to *Journal of Geotechnical and Geoenvironmental Engineering*

G. PEER-REVIEWED ASCE GEOTECHNICAL SPECIAL PUBLICATIONS

- Al-Dakheeli*, H., Bulut, R., Clarke, C.R., and Nevels, J.B. (2017). "Hydro-Mechanical Analysis of Crack Initiation in Expansive Soils," *PanAm Unsaturated Soils 2017 ASCE Geotechnical Special Publication No. 303*, pp. 332-341
- Chen*, L., Bulut, R., Clarke, C.R., and Nevels, J.B. (2017). "Influence of Maximum Water Storage on Thornthwaite Moisture Index," *PanAm Unsaturated Soils 2017 ASCE Geotechnical Special Publication No.* 302, pp. 319-328

- Thite*, S., Sahin, H., and Bulut, R. (2017). "Estimation and Comparison of Suction Compression Index for Oklahoma Subgrade Soils," *PanAm Unsaturated Soils 2017 ASCE Geotechnical Special Publication No. 303*, pp. 47-57
- 4. Al-Dakheeli*, Bulut, R., Aubeny, C., and Lytton, R. (2017). "Comparison between Permeability and Diffusivity Functions Derived from Different Methods of Unsaturated Expansive Soils," *Geotechnical Frontiers 2017 Geotechnical Special Publication No. 277*, pp. 134-143
- Yue*, E. and Bulut, R. (2014). "Evaluation of the Climatic Factors for the Classification of Oklahoma Pavement Regions," *Geo-Congress 2014 ASCE Geotechnical Special Publication No. 234*, pp. 4037-4046
- Kittu*, A.T., Bulut, R., and Puckette, J. (2014). "Effects of Surface Roughness on Contact Angle Measurements on a Limestone Aggregate," *Recent Developments in Evaluation of Pavements and Paving Materials 2014 ASCE Geotechnical Special Publication No. 249*, pp. 1-8
- Kittu*, A.T., Bulut, R., and Harimkar, S. (2014). "Comparison of Surface Energy Values of Limestone with respect to Different 3D Surface Roughness Measurements," *Pavement Materials, Structures, and Performance 2014 ASCE Geotechnical Special Publication No. 239*, pp. 39-47
- Rayudu*, S. and Bulut, R. (2014). "Changes in Contact Angles on Miller Creek Granite with Different Grades of Polishing Grits," *Pavement Materials, Structures, and Performance 2014 ASCE Geotechnical Special Publication No. 239*, pp. 48-58
- Yue*, E. and Bulut, R. (2014). "Equilibrium Matric Suctions in Subgrade Soils in Oklahoma Based on Thornthwaite Moisture Index (TMI)," *Advances in Transportation Geotechnics and Materials for Sustainable Infrastructure 2014 ASCE Geotechnical Special Publication No. 250*, pp. 17-24
- Mantri*, S. and Bulut, R. (2014). "Evaluating Performance of a Chilled Mirror Device for Soil Total Suction Measurements," *Advances in Transportation Geotechnics and Materials for Sustainable Infrastructure* ASCE Geotechnical Special Publication No. 250, pp. 56-64
- 11. Tian*, Y. and Bulut, R. (2014). "Prediction of Unsaturated Soil Diffusivity Coefficient from SWCC and Saturated Permeability Tests," *Advances in Transportation Geotechnics and Materials for Sustainable Infrastructure 2014 ASCE Geotechnical Special Publication No. 250*, pp. 113-121
- Liu, N., Liu, W., Bulut, R., Yuming, M., and Jianbing, P. (2011). "Prototype Model Tests of Ground Fissures Under Dynamic Earthquake Effects in Xi'an, China," *ASCE Geotechnical Special Publication No. 217*, pp. 150-156
- Mabirizi*, D. and Bulut, R. (2011). "Moisture Flow in Unsaturated Subgrade Soils," ASCE Geotechnical Special Publication No. 217, pp. 42-49
- 14. Mabirizi*, D. and Bulut, R. (2010). "Wetting and Drying Unsaturated Soil Moisture Diffusivity Parameters," *ASCE Geotechnical Special Publication No. 202*, pp. 54-59
- Mabirizi*, D. and Bulut, R. (2009). "A Comparison of Total Suction Measurements with Thermocouple Psychrometers, Filter Paper Techniques and Chilled-Mirror Device," *Characterization, Modeling, and Performance of Geomaterials 2009 ASCE Geotechnical Special Publication No. 189*, pp. 1-6
- Mabirizi*, D. and Bulut, R. (2009). "Unsaturated Soil Moisture Diffusivity Measurements in Laboratory Using Thermocouple Psychrometers," *Contemporary Topics in Ground Modification, Problem Soils, and Geo-Support 2009 ASCE Geotechnical Special Publication No. 187*, pp. 606-613
- Hong, G.T., Bulut, R., Aubeny, C.P., Jayatilaka, R., Lytton, R.L. (2006). "Prediction of Roughness of Pavements on Expansive Soils," Unsaturated Soils 2006 ASCE Geotechnical Special Publication No. 147, Vol. 1, pp. 415-426
- Hong, G.T., Aubeny, C.P., Bulut, R., Lytton, R.L. (2006). "Design of Pavements on Expansive Soils," Unsaturated Soils 2006 ASCE Geotechnical Special Publication No. 147, Vol. 1, pp. 427-438

- Long, X., Aubeny, C.P., Bulut, R., Lytton, R.L. (2006). "Two-Dimensional Shrink-Swell Model for Pavement Surface Movement Prediction," Unsaturated Soils 2006 ASCE Geotechnical Special Publication No. 147, Vol. 2, pp. 2150-2161
- Bulut, R., Lytton, R. L., and Wray, W. K. (2001). "Soil Suction Measurements by Filter Paper," Expansive Clay Soils and Vegetative Influence on Shallow Foundations 2001ASCE Geotechnical Special Publication No. 115, pp. 243-261

H. PEER-REVIEWED CONFERENCE PROCEEDINGS PUBLICATIONS

- Javid*, H.A. and Bulut, R. (2023). "Flood Hazard Assessment of Transportation Infrastructure Using Remote Sensing and Machine Learning," ASCE INSPIRE Conference 2023, November 16-18, 2023, Arlington, Virginia
- Javid*, H.A., Bulut, R., and Habiger, J. (2023). "Estimating van Genuchten Diffusivity Parameter of Undisturbed Soils in Oklahoma," *Airfield and Highway Pavements 2023: Design, Construction, Condition Evaluation, and Management of Pavements*, June 14-17, 2023, Austin, Texas. ISBN: 9780784484890
- Al-Dakheeli*, H., Javid*, A., Chen*, M., Bulut, R. (2022). "Shrinkage Curve of Treated Sulfate-Bearing Soils with GGBS," *Advances in Transportation Geotechnics IV. International Conference on Transportation Geotechnics (ICTG)*, Chicago, Illinois, ISBN 978-3-030-77230-7. DOI: 10.1007/978-3-030-77230-7
- Javid*, A.H., Al-Dakheeli*, H., and Bulut, R. (2022). "Development of a Linear Equilibrium Suction Model Based on TMI and Climatic Regions for Oklahoma," *Advances in Transportation Geotechnics IV*. *International Conference on Transportation Geotechnics (ICTG)*, Chicago, Illinois, ISBN 978-3-030-77230-7. DOI: 10.1007/978-3-030-77230-7
- Chen*, M., Al-Dakheeli*, H., and Bulut, R. (2022). "Evaluation of Mineral Formation of Sulfate-Bearing Soil Stabilized with Slag Cement in Oklahoma," *Advances in Transportation Geotechnics IV*. *International Conference on Transportation Geotechnics (ICTG)*, Chicago, Illinois, ISBN 978-3-030-77230-7. DOI: 10.1007/978-3-030-77230-7
- Hossain, Z., Bairgi, B., Zaman, M., Bulut, R., and Sumpter, B. (2021). "Evaluation of Stripping Resistance of Organoclay-Modified Asphalt Binder and Aggregate Systems Using an Optical Contact Angle Analyzer," *GeoChina 2021 Civil Infrastructures Confronting Severe Weathers and Climate Changes*, pp. 68-82, <u>https://doi.org/10.1007/978-3-030-79647-1_5</u>
- Javid*, A.H. and Bulut, R. (2021). "A Mechanistic-Empirical Model to Predict Suction Profile in Subgrade Soil," *Tran-SET 2020 Conference*, Albuquerque, New Mexico. pp. 87-99
- Javid*, A.H. and Bulut, R. (2019). "Evaluating Equilibrium Matric Suctions Under Pavement System Based on Thornthwaite Moisture Index (TMI)," *International Airfield and Highway Pavements Conference* (T&DI), Chicago, Illinois, July 21-24, 2019. <u>https://doi.org/10.1061/9780784482469.051</u>
- Al-Dakheeli*, H. and Bulut, R. (2018). "Shrinkage Cracking Characteristics of Compacted Fine-Grained Soils," *The 7th International Conference on Unsaturated Soils (UNSAT 2018)*, Hong Kong, August 3-5, 2018
- Nevels, J.B., Clarke, C.R., Chen*, L., and Bulut, R. (2016). "A Site Assessment of Pavement Cracking in a Drought Environment: A Case History," Unsaturated Soil Conference 2016 (UNSAT 2016), Vol. 9, p. 5, Paris, France
- Hossain, Z., Bairgi, B., Zaman, M., and Bulut, R. (2016). "Prediction of the Stripping Resistance of Nanoclay-Modified Asphalts Using Their Surface Chemistries," *Geo-Chicago 2016 Conference*, August 14-18, 2016, pp. 477-487

- 12. Chen*, L. and Bulut, R. (2015). "Numerical Analysis of Vertical Moisture Barriers in Controlling Expansive Soils in Presence of Soil Cracks," *IFCEE 2015 Conference*, pp. 2102-2111
- Yue*, E., Chen*, L., Bulut, R., Cheng, Q. (2013). "Climatic Parameter TMI in Subgrade Soils," International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure (ISCEPGI), Fairbanks, Alaska, August 4-7, 2013, pp. 109-116
- Koc*, M. and Bulut, R. (2013). "Evaluation of a Warm Mix Asphalt Additive Using Direct Contact Angle Measurements," *International Journal of Pavements Conference*, Sao Paulo, Brazil, December 9-10, 2013, 12p.
- Al-Madhhachi*, A.T., Fox, G.A., Hanson, G.J., Tyagi, A.K., and Bulut, R. (2013). "A Mechanistic Detachment Rate Model to Predict Soil Erodibility due to Fluvial and Seepage Forces," ASCE Environmental Water Resources Institute Annual Meeting, Cincinnati, May 19-22, 2013, 11p.
- Al-Madhhachi*, A.T., Fox, G.A., Tyagi, A.K., Hanson, G.J., and Bulut, R. (2012). "Development of a Fluvial Detachment Rate Model to Predict the Erodibility of Cohesive Soils under the Influence of Seepage," ASABE Paper No. 121337239, Dallas, Texas, 29p.
- Koc*, M. and Bulut, R. (2012). "Surface Free Energy Components of Aggregates from Contact Angle Measurements Using Sessile Drop Method," *Advances in Transportation Geotechnics II*, Miura et al. (eds), Taylor & Francis Group, Digital Media, pp. 560-565
- Al-Madhhachi*, A.T., Fox, G.A., Tyagi, A.K., Hanson, G.J., and Bulut, R. (2011). "Measuring Erodibility in Cohesive Soil under Seepage Gradient Forces Using Laboratory Submerged Jet Test Device," *American Society of Agricultural and Biological Engineering (ASABE) Paper No. 1111028*, St. Joseph, Michigan, 10p.
- Sun*, L., Cheng, Q., and Bulut, R. (2011). "A Similarity-Search Based Approach for Prediction of Remaining Service Life," *ICTPA 24th Annual Conference & NACGEA International Symposium on Geo-Trans, Challenges and Recent Advances in Transportation Engineering*, May 27-29, 2011, Los Angeles, California. ISBN 978-0-615-42857-4
- 20. Al-Madhhachi*, A.T., Hanson, G.J., Fox, G.A., Tyagi, A.K., and Bulut, R. (2011). "Measuring Erodibility of Cohesive Soils Using Laboratory Jet Erosion Tests," *American Society of Civil Engineers Environmental Water Resources Institute Annual Meeting*, Palm Springs, California, May 22-26, 2011, 10p.
- Mabirizi*, D. and Bulut, R. (2010). "Hysteresis Between Wetting and Drying Diffusivity Parameters," *Fifth International Conference on Unsaturated Soils*, Vol. 1, pp. 467-471, Barcelona, Spain, September 6-8, 2010
- Bulut, R., Aubeny, C.P., and Lytton, R.L. (2005). "Unsaturated Soil Diffusivity Measurements," An International Symposium on Advanced Experimental Unsaturated Soil Mechanics, Trento, Italy, June 27-29, 2005, pp. 281-286
- Aubeny, C.P., Bulut, R., and Lytton, R.L. (2005). "Laboratory versus Field Values of Unsaturated Soil Diffusivity," *An International Symposium on Advanced Experimental Unsaturated Soil Mechanics*, Trento, Italy, June 27-29, 2005, pp. 495-499
- Bulut, R. (2005). "Use of Chilled Mirror Psychrometer for Moisture Stress Conditions of Expansive Soils," *International Conference on Problematic Soils*, Eastern Mediterranean University, Famagusta, N. Cyprus, May 25-27, Vol. I, pp. 71-77
- Bulut, R., Park, S-W., and Lytton, R. L. (2000). "Comparison of Total Suction Values from Psyhrometer and Filter Paper Methods," *The 1st Asian Conference on Unsaturated Soils (UNSAT-ASIA 2000)*, Singapore, (Eds. Rahardjo, H., Toll, D. G., and Leong, E. C.), Rotterdam: Balkema, pp. 269-274

Bulut, R., Park, S-W., and Lytton, R. L. (2000). "A New Matric Suction Calibration Curve," *The 1st Asian Conference on Unsaturated Soils (UNSAT-ASIA 2000)*, Singapore, (Eds. Rahardjo, H., Toll, D. G., and Leong, E. C.), Rotterdam: Balkema, pp. 263-268

I. OTHER NON-PEER-REVIEWED PUBLICATIONS

- Javid*, A.H. and Bulut, R. (2019). "Developing Implementable Climatic Input Data and Moisture Boundary Conditions for Pavement Analysis and Design," 2019 Tran-SET Annual Conference, San Antonio, Texas, April 11-12, 2019. (Extended Abstract Only)
- 2. Bulut, R. (2012). "Drying and Wetting Unsaturated Soil Moisture Diffusion Coefficient Measurements in Laboratory," *Oklahoma Transportation Center Newsletter Article*
- 3. Bulut, R. (2010). "Importance of Soil Suction in Pavement Foundations," *The 61st Highway Geology Symposium*, Oklahoma City, Oklahoma, August 23-26 (Abstract Only)
- 4. Bulut, R., Hineidi, S. M., and Bailey, B. (2002). "Suction Measurements Filter Paper and Chilled Mirror Psychrometer," *Texas ASCE 2002 Fall Meeting*, Waco, Texas
- 5. Bulut, R. and Lytton, R. L. (2002). "Slab-on-Ground A Finite Element Method Analysis," *Texas* ASCE 2002 Fall Meeting, Waco, Texas

J. ORAL PRESENTATIONS

- 1. "Estimating van Genuchten Diffusivity Parameter of Undisturbed Soils in Oklahoma," International Airfield & Highway Pavements Conference, Austin, Texas. June 14-17, 2023 (with Amir Javid*)
- "Development of a Linear Equilibrium Suction Model Based on TMI and Climatic Regions for Oklahoma," *Fourth International Conference on Transportation Geotechnics (ICTG)*, Chicago, Illinois, May 24-27, 2021 (with Amir Javid* and Hussein Al-Dakheeli*)
- "Evaluation of Mineral Formation in Sulfate-Bearing Soil Stabilized with Slag Cement using XRD," *Fourth International Conference on Transportation Geotechnics (ICTG)*, Chicago, Illinois, May 24-27, 2021 (with Mengting Chen*, Hussein Al-Dakheeli*, and Jim Puckette)
- 4. "A Mechanistic-Empirical Model to Predict Suction Profile in Subgrade Soil," *Tran-SET 2020 Conference*, Albuquerque, New Mexico, September 1-2, 2020 (with Amir Javid*)
- "General Overview of College of Engineering and School of Civil and Environmental Engineering at Oklahoma State University," *Department of Geological Engineering, Chang'an University*, Xi'an, China, May 31, 2019
- 6. "Evaluating Equilibrium Matric Suctions Under Pavement System Based on Thornthwaite Moisture Index (TMI)," *International Airfield and Highway Pavements Conference (T&DI)*, Chicago, July 21-24, 2019
- 7. "Developing Implementable Climatic Input Data and Moisture Boundary Conditions for Pavement Analysis and Design," 2019 Tran-SET Annual Conference, San Antonio, April 11-12, 2019
- 8. "Unsaturated Soil Mechanics in Pavement Engineering," *Department of Geological Engineering, Chang'an University*, Xi'an, China. July 23, 2018
- 9. "Modeling and Analysis of Cracking in Unsaturated Soils," *Panel Discussion Presentation, PanAm-UNSAT 2017 International Conference*, November 12-15, 2017, Dallas, Texas
- 10. "Hydro-Mechanical Analysis of Crack Initiation in Expansive Soils," *PanAm-UNSAT 2017 International Conference*, November 12-15, 2017, Dallas, Texas
- 11. "Influence of Maximum Water Storage on Thornthwaite Moisture Index," *PanAm-UNSAT 2017 International Conference*, November 12-15, 2017, Dallas, Texas

- 12. "Comparison of Surface Energy Values of Limestone with respect to Different 3D Surface Roughness Measurements," *Geo-Shanghai 2014 International Conference*, May 26-28, 2014, Shanghai, China
- 13. "Changes in Contact Angles on Miller Creek Granite with Different Grades of Polishing Grits," *Geo-Shanghai 2014 International Conference*, May 26-28, 2014, Shanghai, China
- 14. "Climatic Parameter TMI in Subgrade Soils," International Symposium of Climatic Effects on Pavement and Geotechnical Infrastructure (ISCEPGI), Fairbanks, Alaska, August 4-7, 2013
- 15. "Comparison of Contact Angle Measurements of Granite with respect to Surface Roughness," International Journal of Pavements Conference, Sao Paulo, Brazil, December 9-10, 2013
- 16. "Variation of Contact Angles with Various Polishing Stages on Pryor Stone Limestone," *International Journal of Pavements Conference*, Sao Paulo, Brazil, December 9-10, 2013
- 17. "Evaluation of a Warm Mix Asphalt Additive Using Direct Contact Angle Measurements," International Journal of Pavements Conference, Sao Paulo, Brazil, December 9-10, 2013
- "Surface Free Energy Components of Aggregates from Contact Angle Measurements Using Sessile Drop Method," 2nd International Conference on Transportation Geotechnics (IS-Hokkaido 2012), Sapporo, Japan, September 10-12, 2012
- "Initial Assessment of a New Device & Testing Method for Measuring Contact Angles on Aggregates," *Transportation Research Board, 91st Annual Meeting, National Research Council,* Washington, D.C., January 22-26, 2012
- "Moisture Flow in Unsaturated Subgrade Soils," GeoHunan International Conference II: Emerging Technologies for Design, Construction, Rehabilitation, and Inspections of Transportation Infrastructures, Changsha, Hunan, China, June 9-11, 2011
- "A Unified Testing Method for Measuring Unsaturated Soil Drying and Wetting Diffusion Coefficients in Laboratory," *Transportation Research Board, 89th Annual Meeting, National Research Council,* Washington, D.C., January 10-14, 2010
- 22. "A Comparison of Total Suction Measurements with Thermocouple Psychrometers, Filter Paper Techniques and Chilled-Mirror Device," GeoHunan, International Conference: Challenges and Recent Advances in Pavement Technologies and Transportation Geotechnics, Changsha, Hunan, China, August 3-6, 2009
- 23. "Design Parameters for Foundations on Expansive Soils," 44th Annual Shallow Exploration Drillers Clinic, May 5-7, 2009, Catoosa, Oklahoma
- 24. "Unsaturated Soil Moisture Diffusivity Measurements in the Laboratory Using Thermocouple Psychrometers," *ASCE International Foundation Congress and Equipment Expo*, Orlando, Florida, March 15-19, 2009
- 25. "Unsaturated Soil Moisture Diffusivity Measurements in the Laboratory," ODOT-OTC Research Day, Oklahoma City, Oklahoma, October 15, 2008
- 26. "Soil Suction Measurements and Analysis of Slabs on Expansive Soils," U.S. Corps of Engineers, Fort Hood, Killeen, Texas, April 28, 2006
- 27. "Laboratory Unsaturated Soil Moisture Diffusion Coefficient Measurements," Transportation Research Board, 85th Annual Meeting, National Research Council, Washington, D.C., January 25, 2006
- 28. "Re-evaluation of Current TxDOT PVR Design Procedure with a New Suction-Based Approach," *Foundation Performance Association*, Wednesday, August 10, 2005, Houston, Texas (www.foundationperformance.org)
- 29. "Indirect Measurement of Soil Suction," International Symposium: Advanced Experimental Unsaturated Soil Mechanics, Trento, Italy, June 27-29, 2005 (with E.C. Leong and C.P. Aubeny, via live video)

- 30. "Three-Dimensional Analysis of Slabs on Expansive Soil Foundations," *Foundation Performance Association*, December 15, 2004, Houston, Texas (with X. Zhang and R.L. Lytton)
- 31. "Measurement of Soil Suction," Foundation Performance Association, August 20, 2003, Houston, Texas
- 32. "Slab-on-Ground A Finite Element Method Analysis," *Texas ASCE 2002 Fall Meeting*, October 4, 2002, Waco, Texas
- "Suction Measurements Filter Paper and Chilled Mirror Psychrometer," Texas ASCE 2002 Fall Meeting, October 4, 2002, Waco, Texas
- 34. "Soil Suction Measurements by Filter Paper," *Shallow Foundation and Soil Properties, ASCE 2001 Civil Engineering Conference*, October 13, 2001, Houston, Texas
- 35. "Methods to Aid Structural and Geotechnical Engineers in Designing Slab-on-Grade," *Foundation Performance Association*, August 15, 2001, Houston, Texas (with R.L. Lytton)

K. POSTER PRESENTATIONS

- 1. "Engineering Properties and Micro-Structural Characteristics of Expansive Soil Treated with Liquid Stabilizer," *International Airfield & Highway Pavements Conference*, Austin, Texas. June 14-17, 2023 (with Mengting Chen*)
- "Shrinkage Curve of Treated Sulfate-Bearing Soils with GGBS," Fourth International Conference on Transportation Geotechnics (ICTG), May 24-27, 2021, Chicago, Illinois. (with Hussein Al-Dakheeli*, Amir Javid*, and Mengting Chen*)
- 3. "Strength Development and Mineral Formation of Sulfate-Bearing Soils Stabilized with Slag Cement," Oklahoma Transportation Research Day (OTRD) Conference, Oklahoma City, 2020 (with Mengting Chen*, Hussein Al-Dakheeli*, Amir Javid*, and J. Puckette)
- 4. "Developing Moisture Variation Prediction Model for Pavement Analysis and Design," Oklahoma Transportation Research Day (OTRD) Conference, Oklahoma City, November 5, 2019 (with Amir Javid* and Hussein Al-Dakheeli*)
- "Investigation of Slag Cement Effects on High Sulfate Soils in Oklahoma," Oklahoma Transportation Research Day (OTRD) Conference, Oklahoma City, November 5, 2019 (with Hussein Al-Dakheeli, Mengting Chen*, and Amir Javid*)
- 6. "Developing Implementable Climatic Input Data and Moisture Boundary Conditions for Pavement Analysis and Design," *Tran-SET Conference*, San Antonio, Texas, 2019 (with Amir Javid)
- 7. "Monitoring Approach for Prediction of Pavements Roughness on Expansive Soils," Oklahoma Transportation Research Day (OTRD) Conference, Oklahoma City, October 23, 2018 (with Amir Javid*)
- "Hydro-Mechanical Study of Shrinkage Settlement and Cracking in Subgrades due to Environmental Loads," ODOT-SPTC Transportation Research Day, Oklahoma City, October 18, 2016 (with Hussein Al-Dakheeli*)
- 9. "Evaluation of the Climatic Factors for the Classification of Oklahoma Pavement Regions," *Annual Kansas City Geotechnical Conference*, Kansas City, April 24, 2014 (with Er Yue*, Lizhou Chen*, and Omar Amer*)
- 10. "Drying Shrinkage Problems in Expansive Soils," by and Bulut, R., *Annual Kansas City Geotechnical Conference*, Kansas City, April 24, 2014 (with Omar Amer*, Lizhou Chen*, Sruthi Mantri*, Yi Tian*, and, Er Yue*)
- "Evaluation of the Soil Moisture Factors for the Classification of Oklahoma Pavement Regions," *OSPE 2014 Annual Conference*, Tulsa, Oklahoma, June 12-13, 2014 (with Er Yue*, Lizhou Chen*, Omar Amer*, and Sruthi Mantri*)

- 12. "Drying Shrinkage Problems in Expansive Soils," *OSPE 2014 Annual Conference*, Tulsa, Oklahoma, June 12-13, 2014 (with Omar Amer*, Lizhou Chen*, Sruthi Mantri*, Yi Tian*, and Er Yue*)
- "Characterization of Warm Mix Asphalt Additives Using Direct Contact Angle Measurements and Surface Free Energies," *Transportation Research Board, 93rd Annual Meeting*, Washington, D.C., January 12-16, 2014 (with Murat Koc* and Anjana Kittu*)
- 14. "Evaluation of the Enhanced Integrated Climatic Model for Modulus-Based Construction Specifications for Oklahoma Pavements," ODOT-OkTC Transportation Research Day, Oklahoma City, September 12, 2013 (with Er Yue*, Omar Amer*,Lizhou Chen*, Sruthi Mantri*, Hoda Soltani, Zahid Hossain., K.K. Muraleetharan, and Musharraf Zaman)
- 15. "Drying Shrinkage Problems in High PI Clay Subgrade Soils in Oklahoma," *ODOT-OkTC Transportation Research Day*, Oklahoma City, September 12, 2013 (with Omar Amer*,Lizhou Chen*, Sruthi Mantri*,Yi Tian*,Ali Taghichian, and Musharraf Zaman)
- 16. "Moisture Susceptibility Evaluation of Warm Mix Asphalt," *ODOT-OkTC Research Day*, Oklahoma City, October 4, 2012 (with Rouzbeh Ghabchi, Murat Koc*, and, Musharraf Zaman)
- "Evaluation of the Enhanced Integrated Climatic Model for Modulus-Based Construction Specifications for Oklahoma Pavements," *ODOT-OkTC Research Day*, Oklahoma City, October 4, 2012 (with Er Yue*, Omar Amer*, Hoda Soltani, Zahid Hossain, K.K. Muraleetharan, and Musharraf Zaman)
- "Mechanistic Detachment Rate Model to Predict Soil Erodibility due to Fluvial and Seepage Forces," 2012 Oklahoma Governor's Water Conference and Water Resources Symposium, Tulsa, Oklahoma (Won 1st Place) (with A.T. Al-Madhhachi, G.A. Fox, G.J. Hanson, and Advesh Tyagi)
- "Measuring the Erodilibity of Cohesive Soils Influenced by Seepage Forces Using a Laboratory Jet Erosion Test Device," *The 23rd Annual OSU Research Symposium*, Stillwater, Oklahoma, February 22-24, 2012 (with A.T. Al-Madhhachi, G.A. Fox, Advesh Tyagi, and G.J. Hanson)
- 20. "Green Pavement Technology: Warm Mix Asphalt Moisture Susceptibility Evaluation Using Surface Free Energy Approach," 2011 ODOT-O&TC Research Day, Oklahoma City, October 11, 2011 (with Rouzbeh Ghabchi, Yi Tian*, D. Singh, Murat Koc*, Musharraf Zaman, and S.A. Cross)
- "Measuring Erodilibity of Cohesive Soils Using Laboratory Submerged Jet Test Devices," *The 22nd* Annual OSU Research Symposium, Stillwater, Oklahoma, February 23-25, 2011 (with A.S. Al-Madhhachi, G.J. Hanson, G.A. Fox, A.K. Tyagi)
- 22. "Unsaturated Soil Diffusion Coefficient Measurements in the Laboratory," OTC RITA Site Visit Research Day, Norman, Oklahoma, March 30, 2010 (with Daniel Mabirizi*)
- 23. "Unsaturated Soil Moisture Diffusivity Measurements in the Laboratory," ODOT-OTC Research Day, Oklahoma City, October 15, 2008 (with Daniel Mabirizi* and Janet Tse*)

VI. Funding Record at Oklahoma State University

Total funding as PI or Co-PI, <u>excluding</u> any matching funds: **\$4,405,496**

A. EXTERNALLY FUNDED GRANTS

- 1. "Updating Pavement ME Climate Module for Efficient Design and Management of Oklahoma Pavements," *Oklahoma Department of Transportation*, **\$200,000.00**. October 1, 2023 September 31, **PI**
- "Assessment of StableSoil[®] Chemical Additive as Stabilizer to Reduce Swelling-Shrinkage Potential of Expansive Soils – Phase II," *M.T. Designs, LLC*, Waco, Texas, \$118,450.00. March 1, 2023 – February 29, 2024, PI

- "Use of Rice Husk Dust Ash (RHA) as Stabilizing Agent for Poor Subgrade Soils and Embankments," *Transportation Consortium of South-Central States (TranSET)*, Baton Rouge, Louisiana, \$55,000.00 (with matching funds \$110,000.00). August 1, 2021 – September 30, 2022, PI
- "Assessment of StableSoil[®] Chemical Additive as Stabilizer to Reduce Swelling-Shrinkage Potential of Expansive Soils – Phase I," *M.T. Designs, LLC*, Waco, Texas, **\$66,889.00**. July 1, 2021 – June 30, 2022, **PI**
- "Focus Area Four: Sustainable Water and Energy Infrastructure. Socially Sustainable Solutions for Water, Carbon, and Infrastructure Resilience in Oklahoma," *Oklahoma EPSCoR-National Science Foundation*, \$272,653.00. July 1, 2020 – June 30, 2024, PI (This is part of a 5-year, \$20M project between several institutions)
- "Resilient Analysis and Design of Slab-on-Ground Foundations on Expansive Soils," U.S. Department of Housing and Urban Development, Washington, D.C. \$89,431.00. August 15, 2020 – August 15, 2022, PI
- "Variation of Shear Wave Velocity due to Moisture Changes," Oklahoma Department of Transportation, \$64,267.00. October 1, 2020 – September 30, 2021, PI
- "Investigation of Slag-Cement Effects on High Sulfate Soils in Oklahoma," Oklahoma Department of Transportation, \$74,907.00. August 1, 2018 – July 31, 2019, PI
- 9. "Developing Implementable Climatic Input Data and Moisture Boundary Conditions for Pavement Analysis and Design," *Transportation Consortium of South-Central States (Tran-SET)*, **\$57,000.00** (With matching funds, \$85,500.00). March 1, 2018 August 31, 2019, **PI**
- 10. "Performance of Moisture Barriers to Enhance Pavement Performance over Swelling Soils," Oklahoma Department of Transportation, **\$272,812.00**. 36 months. October 2015 – September 2018, **PI**
- 11. "Development of a Database for Screening of Mixes for Moisture Damage in Oklahoma," *Southern Plains Transportation Center*, **\$190,000.00**. 24 months. January 2016 December 2017, **Co-PI**
- "Mitigating Dry Shrinkage Pavement Cracking by Geocell," *Southern Plains Transportation Center*, \$74,672.00. 12 months. April 2016 – May 2017, Co-PI
- "Evaluation of Ec3000 as Stabilizer to Reduce Risk on Design-Build Pavement Projects in Texas Constructed over Expansive Soils," *Environmental Soil Stabilization, LLC*, Dallas, Texas, \$250,000.00.
 24 months. November 2014 – December 2016, Co-PI
- 14. "Development of a Geotechnical Report Database for Oklahoma," Oklahoma Department of Transportation, **\$97,865.00**. 12 months. October 2013 – September 2014, **Co-PI**
- "The Effects of Soil Suction on Shallow Slope Stability," Oklahoma Department of Transportation, \$343,176.00. 36 months. October 2011 – September 2014, Co-PI
- "The Effects of Soil Suction on Shallow Slope Stability," Oklahoma Transportation Center, \$112,500.00.
 12 months. October 2011 September 2012, Co-PI
- 17. "Improved Cover Aggregate Specifications to Enhance Chip Seal Performance," Oklahoma Transportation Center, **\$139,660.00**. 12 months. October 2011 – September 2012, **Co-PI**
- "Develop Draft Chip Seal Cover Aggregate Specification Based on Aggregate Imaging System (AIMS) Angularity, Shape, and Texture Test Results," *Oklahoma Department of Transportation*, \$131,380.00. 24 months. October 2011 – September 2013, Co-PI
- "Evaluation of the Enhanced Integrated Climatic Model for Modulus-Based Construction Specifications for Oklahoma Pavements," *Oklahoma Department of Transportation*, \$181,381.00. 24 months. October 2011 – September 2013, PI

- "Evaluation of Enhanced Integrated Climatic Model for Oklahoma Pavements," Oklahoma Transportation Center, \$188,970.00. [With matching funds, total project cost: \$377,939.00]. 12 months. October 2011 – June 2013, PI
- "Drying Shrinkage Problems in High-Plastic Clay Soils in Oklahoma," Oklahoma Transportation Center, \$146,861.00. [With matching funds, total project cost: \$293,722.00]. 12 months. October 2011 – June 2013, PI
- 22. "Drying Shrinkage Problems in High PI Subgrade Soils," Oklahoma Department of Transportation, **\$146,083.00**. 24 months. October 2011 September 2013, **PI**
- "Rapid Determination of Unsaturated Moisture Diffusivity for Soils During Frost Heave," *Alaska University Transportation Center*, \$40,347.00. [With matching funds, total project cost: \$82,554.00]. 18 months. August 2011 December 2012, PI
- "WMA Pavements in Oklahoma: Moisture Damage and Performance Issues," Oklahoma Transportation Center, \$398,605.00. [With matching funds, total project cost: \$801,019.00]. 24 months. April 2010 – March 2013, PI
- 25. "Finite Element Analysis of a Mindlin Plate on a Three-Dimensional Expansive Soil Foundation," *Bryant Consultants*, Dallas, Texas, **\$98,091.00**. 24 months. October 2006 – September 2008, **PI**
- 26. "Procurement of Novel Microanalysis Equipment for Construction Materials," Oklahoma Transportation Center. **\$355,686.00**. May 2010 – February 2011, **Co-PI**
- "Soil Moisture Drying and Wetting Diffusion Coefficient Measurements in Laboratory," Oklahoma Transportation Center. \$62,876.00. [With matching funds, total project cost: \$125,752.00]. June 2008 – July 2009, PI
- 28. "Unsaturated Soil Diffusion Coefficient Measurements of High PI Clays," Fugro Consultants, Inc., Austin, Texas. **\$7,710.00.** February 2008 July 2008, **PI**

B. INTERNALLY FUNDED GRANTS AT OKLAHOMA STATE UNIVERSITY

- 1. "Core Facility for Laser-Based Three-Dimensional Scanning," *Oklahoma State University*, Stillwater, Oklahoma. **\$139,574.00**. November 2009 November 2010, **Co-PI**
- "Facility Renovation and Facility Development of 207 Engineering Annex into a Geotechnical and Materials Laboratory," *Oklahoma State University*, Stillwater, Oklahoma. **\$28,650.00**. November 2006 – January 2008, Co-PI

C. <u>Research Reports</u>

- 1. "Tabassum*, N. and Bulut, R. (2023). "Resiliency of Residential Slab Foundations Constructed on Expansive Soils," Final Report, U.S. Department of Housing and Urban Development, Washington, D.C.
- Chen*, M. and Bulut, R. (2022). "Assessment of StableSoil[®] Chemical Additive as Stabilizer to Reduce Swelling-Shrinkage Potential of Expansive Soils – Phase I," Final Report, *M.T. Designs, LLC*, Waco, Texas"
- 3. Hossain, Z., Bulut, R., Tarhuni, F., and Al-Dakheeli*, H. (2022). "Using Rice Husk Dust Ash (RHA) as Stabilizing Agent for Problematic Subgrade Soils and Embankments" Final Report, *Transportation Consortium of South-Central States (TranSET)*, Baton Rouge, Louisiana
- Ahmed, S. and Bulut, R. (2021). "Safety of Vulnerable Road Users (VRU's) in Light-Rail Transit (LRT) Environment," Final Report, *Transportation Consortium of South-Central States (Tran-SET)*, Baton Rouge, Louisiana

- 5. Al-Dakheeli*, H., Bulut, R., and Nevels, J. (2019). "Variation of Shear Wave Velocity due to Moisture Changes," Final Report, *Oklahoma Department of Transportation*, Oklahoma City, Oklahoma
- 6. Javid*, A.H. and Bulut, R. (2019). "Developing Implementable Climatic Input Data and Moisture Boundary Conditions for Pavement Analysis and Design," Final Report, *Transportation Consortium of South-Central States (Tran-SET)*, Baton Rouge, Louisiana
- Al-Dakheeli*, H., Chen*, M., and Bulut, R. (2019). "Investigation of Slag Cement Effects on High Sulfate Soils in Oklahoma," Final Report, ODOT SP&R Item Number 2400, Oklahoma Department of Transportation, Oklahoma City, Oklahoma
- 8. Javid*, A.H. and Bulut, R. (2019). "Performance of Moisture Barriers to Enhance Pavement Performance over Swelling Soils," Final Report, ODOT SP& Item Number 2272, Oklahoma Department of Transportation, Oklahoma City, Oklahoma
- Arefin*, S. and Bulut, R. (2016). "Evaluation of Ec3000 as Stabilizer to Reduce Risk on Design-Build Pavement Projects in Texas Constructed over Expansive Soils," Final Report, *Texas Transportation Institute*, College Station, Texas
- 10. Yang, X., Bulut, R., and Poudyal, R. (2014). "Development of a Protype Geotechnical Report," Final Report, *Oklahoma Department of Transportation*, Oklahoma City, Oklahoma
- 11. Bulut, R. Chen*, L., Mantri*, S., Amer*, O., Tian*, Y., and Zaman, M. (2014). "Drying Shrinkage Problems in High PI Subgrade Soils," Final Report, ODOT SP&R Item Number 2236, Oklahoma Department of Transportation, Oklahoma City, Oklahoma
- Bulut, R., Yue*, E., Chen*, L., Muraleetharan, K.K., Zaman, M., Soltani, H., and Hossain, Z. (2014). "Evaluation of the Enhanced Integrated Climatic Model for Specification of Subgrade Soils in Oklahoma," Final Report, ODOT SP&R Item Number 2160, Oklahoma Department of Transportation, Oklahoma City, Oklahoma
- Bulut, R., Zaman, M., Amer*, O., Mantri*, S., Chen*, L., Tian*, Y., and Taghichian, A. (2013).
 "Drying Shrinkage Problems in High-Plastic Clay Soils in Oklahoma," Final Report, OTCREOS11.1-09-F, Oklahoma Transportation Center (OkTC), Oklahoma City, Oklahoma
- Bulut, R., Muraleetharan, K.K., Zaman, M., Yue*, E., Soltani, H., and Hossain, Z. (2013).
 "Evaluation of the Enhanced Integrated Climatic Model for Modulus-Based Construction Specification for Oklahoma Pavements," Final Report, OTCREOS11.1-10-F, Oklahoma Transportation Center (OkTC), Oklahoma City, Oklahoma
- Ghabchi, R., Zaman, M., Bulut, R., Koc*, M., Singh, D. (2013). "WMA Pavements in Oklahoma: Moisture Damage and Performance Issues," Final Report, OTCREOS10.1-06-F, Oklahoma Transportation Center (OkTC), Oklahoma City, Oklahoma
- 16. Bulut, R. and Tian*, Y. (2013). "Rapid Determination of Unsaturated Moisture Diffusivity for Soils during Frost Heave," Final Report, *Alaska University Transportation Center*, Fairbanks, Alaska
- 17. Koc*, M., Thoroppady*, A., Rayudu*, S., and Bulut, R. (2013). "Develop Draft Chip Seal Cover Aggregate Specification Based on Aggregate Imaging System (AIMS) Angularity, Shape, and Texture Test Results," Final Report, Oklahoma Department of Transportation (ODOT), Oklahoma City, Oklahoma
- Thoroppady*, A., Rayudu*, S., Koc*, M., and Bulut, R. (2013). "Improved Cover Aggregate Specifications to Enhance Chip Seal Performance," Final Report, Oklahoma Transportation Center (OkTC), Oklahoma City, Oklahoma
- 19. Nazarian, S., Abdallah, I., Mohammad, L.N., Abu-Farsakh, M., Puppala, A.J., and Bulut, R. (2011). "Modulus-Based Construction Specification for Compaction of Earthwork and Unbound

Aggregate," Interim Report, National Cooperative Research Program, NCHRP Project 10-84, Transportation Research Board of the National Academics, Washington, D.C.

- 20. Bulut, R. (2009). "Finite Element Analysis of a Mindlin Plate on a Three-Dimensional Expansive Soil Foundation," *Bryant Consultants, Inc.*, Dallas, Texas
- 21. Mabirizi*, D. and Bulut, R. (2009). "Unsaturated Soil Moisture Drying and Wetting Diffusion Coefficient Measurements in Laboratory," Final Report, OTCREOS7.1-11-F, Oklahoma Transportation Center (OkTC), Oklahoma City, Oklahoma
- 22. Lytton, R.L., Aubeny, C.P., and Bulut, R. (2006). "Implementation of Project: Design Procedure for Pavements on Expansive Soils, Laboratory Tests and Protocols," *Texas Department of Transportation*, Austin, Texas
- Lytton, R.L., Aubeny, C.P., and Bulut, R. (2005). "Design Procedure for Pavements on Expansive Soils, Volume 1," Final Report, FHWA/TX-05/0-4518-1, Texas Department of Transportation, Austin, Texas
- Lytton, R.L., Aubeny, C.P., and Bulut, R. (2005). "Design Procedure for Pavements on Expansive Soils, Volume 2," Final Report, FHWA/TX-05/0-4518-1, Texas Department of Transportation, Austin, Texas
- Lytton, R.L., Aubeny, C.P., and Bulut, R. (2005). "Design Procedure for Pavements on Expansive Soils, Volume 3," Final Report, FHWA/TX-05/0-4518-1, Texas Department of Transportation, Austin, Texas
- Lytton, R.L., Masad, E.A., Zollinger, C., Bulut, R., and Little, D. (2005). "Measurements of Surface Energy and Its Relationship to Moisture Damage," Interim Report, *FHWA/TX-05/0-4524-2, Texas Department of Transportation*, Austin, Texas

VII. Research Advising and Mentoring

A. VISITING SCHOLAR AT OKLAHOMA STATE UNIVERSITY

• Dr. Seung-Hyun Lee, Sumoon University, South Korea. (2009)

B. PHD STUDENTS AS MAJOR ADVISOR AT OKLAHOMA STATE UNIVERSITY

- 1. Hussein Al-Dakheeli (2024). "An Insight into the Deformation of Unsaturated Chemically Stabilized and Natural Soils from the Fundamental Relation of Water Content-Void Ratio-Suction under Isothermal Conditions"
- 2. Amir Hossain Javid (2023). "Variation of Soil Suction and Application of Remote Sensing in Evaluating Unsaturated Soil Behavior within Vadose Zone"
- 3. Omar Moudabel (2019). "Stability Analysis of Trenches Using a Numerical Approach"
- 4. Omar Amer (2019). "Determining Suction Compression Index of Expansive Soils Based on Nonlinear Suction-Volumetric Strain Relationship"
- 5. Lizhou Chen (2014). "Development of a New Tensile Stress Model for Expansive Soils"

C. <u>MASTER OF SCIENCE STUDENTS WITH THESIS OPTION AS MAJOR ADVISOR AT OKLAHOMA STATE</u> <u>UNIVERSITY</u>

- 1. Manish Vaddiraju (2022). "Applications of Statistical Tools including Machine Learning to Analysis of Field Data from SCPTu with GPR"
- 2. Sharif Arefin (2016). "Effects of Ionic Stabilization on Two Expansive Soils from Texas and Oklahoma"
- 3. Siddharth Thite (2015). "Evaluation and Comparison of Various Methods for Determining Suction Compression Index for Oklahoma Soils
- 4. Surithi Mantri (2014). "Correlation Between the Formation of Shrinkage Cracks and Suction in Unsaturated Soils"
- 5. Yi Tian (2014). "Determination of Unsaturated Moisture Diffusivity for Soils During Frost Heave"
- 6. Anjana Thoroppady Kittu (2013). "Surface Energy Characteristics of Granite and Limestone Aggregates with respect to 2D and 3D Surface Roughness Measurements"
- 7. Saba Gebretsadik (2013). "Interaction of Water with Filter Paper Cellulose/Fiber Structure in Soil Suction Measurements"
- 8. Murat Koc (2012). "Development of Testing Protocols for Direct Measurements of Contact Angles on Aggregate and Asphalt Binder Surfaces using a Sessile Drop Device"
- 9. Daniel Mabirizi (2010). "Determination of Unsaturated Soil Wetting and Drying Diffusion Coefficients in Laboratory"

D. <u>MASTER OF SCIENCE STUDENTS WITH REPORT OPTION AS MAJOR ADVISOR AT OKLAHOMA</u> <u>STATE UNIVERSITY</u>

- 1. Divya Sree Kata (2020). "A Study on the System Identification Method to Determine the Main Parameters of ASR in Concrete"
- 2. Harikrishna Kamparajurana (2018). "Effectiveness of Ionic Stabilization in Reducing Swell Potential of Clayey Soils"
- 3. Utkarsh Sharma (2018). "Effect of Density Variation on SWCC"
- 4. Arash Farzam (2015). "Three-Dimensional Finite Element Analysis of Expansive Soils Volume Change"
- 5. Nitya Sandadi (2014). "Application of Sensors in Geotechnical Engineering"
- 6. Suryadithya Rayudu (2013). "Variation of Contact Angles with respect to Different Polishing Stages"

E. PHD STUDENTS (COMMITTEE MEMBER AT OKLAHOMA STATE UNIVERSITY)

- 1. Md Fazle Rabbi (2024). "Rail Strain-Based Track Condition Monitoring Systems"
- 2. Oluseun Sanuade (2023). "Integrated Geophysical Characterization of Dam Foundation Rocks and Underlying Geological Units: Enhancing Subsurface Understanding and Seepage Detection at Pensacola and Kerr Dams in Oklahoma"
- 3. Md Zonaed Hossain Sazal (2022). "Geophysical Methods for Earth Fill Dam Investigation and Aquifer Characterization with Emphasis on the Shear-Wave Reflection Method"
- 4. Yao Ren (2016). "The Wound-on-Tension of Winders with Nip Rollers"
- 5. Anish Khanal (2016). "Factors Influencing the Erodibility of Cohesive Soils"
- 6. Erin Daly (2014). "Quantifying Fluvial Resistance of Streambanks Using Jet Erosion Tests"
- 7. Abdul-Sahib Al-Madhhachi (2012). "Interaction between Fluvial Erosion Mechanisms and Seepage Erosion Mechanisms in Downslope of Streambank"
- 8. Cagri Mollamahmutoglu (2009). "A 2D Axis-Symmetric Wound Roll Model Including Nip Effects"
- 9. Maria Agor (2009). "Incorporating Seepage Erosion into Streambank Stability Analysis"

F. <u>MASTER OF SCIENCE STUDENTS WITH THESIS OPTION (COMMITTEE MEMBER AT OKLAHOMA</u> <u>STATE UNIVERSITY)</u>

- 1. Ratul Mondal (2022). "Compaction Studies on Open-Graded Aggregate Materials: Moving Towards Deflection-Based Compaction Control"
- 2. Maryam Ahmadvand (2020). "Modeling the Impacts of Erosion and Sediment Control Practices for Roadway Construction Sites on Water Quality in Oklahoma"
- 3. Ning Lee (2018). "Interface Frictional Characteristics between Concrete Slabs and Soils"
- 4. Spandana Annamraju (2014). "Soil Stabilization Using Bio-Materials"
- 5. Roman Poudyal (2014). "Development of a Geotechnical Report Database for ODOT"
- 6. Alan Ting (2012). "End of Asset Life Reinvestment Decision Making Tool"
- 7. Rachel Carson (2012). "Seepage Erosion in Cohesive Soils"
- 8. Taber Midgley (2012). "Stability of Composite Streambanks: Modeling and Subsurface Flow Field Experiments"
- 9. Robert Frazier (2011). "Response of Entrained Air-Void Systems in Cement Paste to Pressure"
- 10. Azmi Nuri Baryun (2011). "Correlation of Fully Softened Shear Strength of Clay Soil with Index Properties-Phase I"
- 11. Nirajan Aryal (2010). "Environmental, Performance and Life Cycle Cost Analysis of Maintenance Techniques of Asphalt Pavements"
- 12. Asregedew Woldesenbet (2010). "Highway Production Rate Estimation Model"
- 13. Jim Wilkerson (2010). "Benefit Cost Analysis of Brifen Wire Rope Safety Fence on Lake Hefner Parkway in Oklahoma City, Oklahoma"
- 14. Reeti Burman (2009). "Performance Assessment of On-Grade Horizontal Directional Drilling Technology"
- 15. Sushanta Bhusal (2008). "A Laboratory Study of Warm Mix Asphalt For Moisture Damage Potential and Performances Issues"
- 16. Gyanendra Pokhrel (2007). "Validation of the CoredryTM and CorereaderTM Apparatus"
- 17. Sumesh KC (2007). "Evaluation of Dynamic Modulus Values of Oklahoma Mixes"

G. <u>MASTER OF SCIENCE STUDENTS WITH REPORT OPTION (COMMITTEE MEMBER AT OKLAHOMA</u> <u>STATE UNIVERSITY)</u>

- 1. Ruturaj Sonawane (2021).
- 3. Maowa Agbetunsin (2020).

- 2. Hrishikesh Sawant (2021).
- 4. Mike Horn (2020).
- 6. David Michael Blackmore (2011).

Nehal Patel (2011).
 Amit Kotalwar (2010).

H. UNDERGRADUATE RESEARCH STUDENTS (FUNDED) AT OKLAHOMA STATE UNIVERSITY

- 1. Guillermo Martinez (2020-2021). "The Utilization of SCPTu in Field for Measuring Shear Wave Velocity Profile in Soil," *Supported on Oklahoma Department of Transportation (ODOT) Research Project*
- 2. Elizabeth Holder (2012). "The Effects of Soil Suction on Shallow Slope Stability," Supported on Oklahoma Department of Transportation (ODOT) Research Project
- 3. Hannah McGuire (2012). "Drying Shrinkage Problems in High PI Subgrade Soils," Supported on Oklahoma Department of Transportation (ODOT) Research Project

- 4. Deedre Adson (2012). "Evaluation of the Enhanced Integrated Climatic Model for Oklahoma Pavements," *Supported on Oklahoma Department of Transportation (ODOT)* Research Project
- 5. Amin Mneina (2012). "Drying Shrinkage Problems in High-Plastic Clay Soils in Oklahoma," *Supported* on Oklahoma Transportation Center OkTC) Research Project
- I. UNDERGRADUATE TEACHING ASSISTANTS (FUNDED) AT OKLAHOMA STATE UNIVERSITY
 - 1. Alan Harder (2009). "CIVE 4711 Basic Soil Testing Laboratory,"
 - 2. Janet Tse (2008). "CIVE 3713 Geotechnical Engineering,"
 - 3. Scott Helms (2008). "CIVE 4711 Basic Soil Testing Laboratory,"
 - 4. Robert Rose (2007, 2008). "CIVE 3713 Geotechnical Engineering and CIVE 4711 Basic Soil Testing Laboratory,"

J. UNDERGRADUATE STUDENTS (INVOLVED WITH RESEARCH) AT OKLAHOMA STATE UNIVERSITY

Honors Contract

- 8. Gabriel Miller (2023).
- 10. Megan Buchanan (2016).
- 12. Vishali Mylapore Vasudevan (2014).
- 14. Michael Carpenter (2012).
- 16. Daniel Russell Ede (2010).

- 9. Nicole Swain (2017).
- 11. Timothy Smith (2014).
- 13. Esther Johnson (2012).
- 15. Nick Seader (2012).

• OSU CEAT Freshman Research Program

- 1. Meredith Shiflet (2008 and 2009).
- 2. Austin Burton (2007 and 2008).
- International Exchange Student
 - 1. Smaaile Ait Abdellah (March to June 2009). Polytech'Lille University, France

The undergraduate students have been mentored in various research and teaching activities.

VIII. Teaching at Oklahoma State University

A. COURSES TAUGHT

- 1. CIVE 3623 Civil Engineering Materials
- 2. CIVE 3713 Geotechnical Engineering
- 3. CIVE 3714 Introduction to Geotechnical Engineering
- 4. CIVE 4041 Engineering Practice
- 5. CIVE 4711 Basic Soil Testing Laboratory
- 6. CIVE 5010 Unsaturated Soil Mechanics
- 7. CIVE 5713 Soil Mechanics
- 8. CIVE 5723 Foundation Engineering
- 9. CIVE 5010 Numerical Methods in Geotechnical Engineering
- 10. CIVE 5743 Soil-Structure Interaction

CV of R. Bulut

11. CIVE 5753 Engineering Soil Stabilization

B. INDEPENDENT STUDY COURSES TAUGHT

- CIVE 4010 Civil Engineering Research
- CIVE 5020 Civil Engineering Research
- CIVE 5080 Engineering Problems

C. <u>New Course Development</u>

- 1. Soil-Structure Interaction
- 2. Numerical Methods in Geotechnical Engineering
- 3. Unsaturated Soil Mechanics
- 4. Soil Stabilization

IX. Service at Oklahoma State University

A. <u>University/College/Department Service</u>

University-Level

- Faculty Advisor, Turkish Student Association (2007-2024)
- Member, Faculty Council (2020-2022)
- Member, Academic Integrity Panel (2020-2022)
- Member, Academic Standards and Policies Committee (2020-2021)

College-Level

- Member, CEAT Faculty Advisory Council Committee (2018-2024)
- Member, ENSC 2123 Dynamics Curriculum Oversight Committee (2016-2021)
- Member, Graduate Coordinator Committee (2019-2020)
- OSU UpClose Student Recruitment Event for Geotechnical Engineering (2011 and 2012)
- Academic Excellence Day for Student Recruitment for Geotechnical Engineering (2011)
- CEAT Scholar Interview and Recruitment Event (2008, 2009, and 2012)

Unit-Level

- Chair, Re-Appointment, Promotion, and Tenure Committee (2019-2022)
- Member, Environmental Engineering Faculty Search Committee (2020-2021)
- Graduate Coordinator (2017-2020)
- Chair, CIVE Graduate Student Handbook Committee (2017-2020)
- Member, Geotechnical Engineering Faculty Search Committee (2018)
- Member, CIVE Scholarship Committee (2014-2022)
- Review of a Cooperative Education Program Agreement Between Oklahoma State University and Chang'an University in Xi'an, China (CHD 3+2 Program) (2017)
- CIVE Design Day Activities for Geotechnical Engineering Program (2008-2012)

- Member, Construction Engineering and Project Management Faculty Search Committee (2012-2013)
- Member, Transportation Engineering Faculty Search Committee (2010-2011)
- Chair, Geotechnical Engineering Faculty Search Committee (2008-2009)
- Member, Laboratory Advisory Committee (2008-2011)
- Member, Class Conflicts and Frequency of Testing Committee (2008-2009)

Outreach/Other Activities

- Demonstration and Presentation at the Engineering Day for the sixth and seventh grade students in Shawnee, Oklahoma on the subject of "Constructing and Testing of a Mechanically Stabilized Earth Wall" (2010- 2011)
- Seminar Organization: Invited Mr. J. Gates from Tetra Technologies, Inc., Houston, Texas to provide assistance and give a presentation to the technical members of the Center for Local Government Technology (CLGT) and Local Technical Assistance Program (LTAP) on the subject of "Soil Stabilization and Dust Control" (2011)
- Seminar Organization: Invited Mr. G. Humphrey from Fugro Geoconsulting, Inc., Houston, Texas to give a presentation to senior CIVE students on the topic of "Marine Foundation Investigations, Analysis and Design" (2011)
- Seminar Organization: Invited Dr. X. Long from Fugro Geoconsulting, Inc., Houston, Texas to give a presentation and provide discussions to our geotechnical engineering graduate students on the topic of "Numerical Methods on Moisture Flow in Expansive Soils" (2008)
- Teaching FE review sessions on Geotechnical Engineering topics (2008-2015)
- Evaluation of ABET outcomes for Geotechnical Engineering courses
- Evaluation of course materials on Geotechnical Engineering of Southwest Jiatong University, as part of an exchange program with Oklahoma State University

B. PROFESSIONAL SERVICE

International-Level

- Short Course
 - Soil Mechanics, Department of Geological Engineering, Chang'an University, Xian, China (Summer 2019)
- External Examiner
 - Ph.D. Degree, Damien Alexander (2023). "Volume Change Potential of Plastic Clays in Trinidad: Soil and Climatic Parameter Estimation and Modeling," University of West Indies, Trinidad and Tobago
- Society Membership
 - International Society of Soil Mechanics and Geotechnical Engineering (ISSMGE)
- Technical Committee Membership
 - TC38 Soil-Structure Committee of ISSMGE
- Conference Organizations

- Member, Technical Committee, 2nd Global Summit on Civil, Architectural, and Environmental Engineering, November 18-19, 2024, Dubai, UAE
- Member, Technical Committee, GeoShanghai 2024 International Conference, May 26-29, 2024, Shanghai, China
- Member, Scientific Committee, IV. Eurasian Conference on Civil and Environmental Engineering, June 17-18, 2019, Istanbul, Turkey
- Member, Technical Organizing Committee, 5th GeoChina International Conference on Civil Infrastructures Confronting Severe Weathers and Climate Changes From Failure to Sustainability, July 23-25, 2018, HangZhou, China
- Member, Technical Committee, GeoShanghai International Conference, May 27-30, 2018, Shanghai, China
- Session Co-Chair, International Foundations Congress and Equipment Expo (IFCEE), March 5-10, 2018, Orlando, Florida
- Session Chair, Moderator, and Panelist, 2nd Pan-American Conference on Unsaturated Soils (PanAm-UNSAT 2017), November 12-15, 2017, Dallas, Texas
- Member, Advisory Committee, 3rd International Conference on New Advances in Civil Engineering (IGNACE 2017), April 2017, Helsinki, Finland
- Member, Technical Organizing Committee, GeoChina International Conference on Sustainable Civil Infrastructures: Innovative Technologies for Severe Weathers and Climate Changes, July 25-27, 2016, Shandong, China
- Member, Technical Organizing Committee, GeoHubei International Conference on Sustainable Civil Infrastructures, Innovative Technologies and Materials, July 20-22, 2014, Hubei, China
- Session Chair and Technical Organizing Committee Member, GeoShanghai International Conference, May 26-28, 2014, Shanghai, China
- Session Chair, Moderator, and Technical Organizing Committee Member, GeoHunan International Conference II: Emerging Technologies for Design, Construction, Rehabilitation, and Inspections of Transportation Infrastructures, June 9-11, 2011, Changsha, Hunan, China
- Session Chair and Moderator, GeoHunan International Conference I: Challenges and Recent Advances in Pavement Technologies and Transportation Geotechnics, August 3-6, 2009, Changsha, Hunan, China
- Session Co-Chair and Moderator, 4th International Conference on Unsaturated Soils (UNSAT 2006), April 2-6, 2006, Carefree, Arizona
- Member, Technical Committee, Symposium on Advanced Experimental Unsaturated Soil Mechanics (EXPERUS 2005), June 27-29, 2005, Trento, Italy
- Reporter, The State-of-the-Art Paper on Indirect Measurement of Soil Suction, Symposium on Advanced Experimental Unsaturated Soil Mechanics (EXPERUS 2005), June 27-29, 2005, Trento, Italy
- Editorial Board Membership
 - Building, MDPI (2023-Current)

- Institution of Engineers (India) Series-A (2011-Current)
- International Journal of Pavements (2013-2018)
- KSCE Journal of Civil Engineers (2012-2013)
- Reviewer for Journals
 - Geotechnique
 - Soil Dynamics and Earthquake Engineering
 - International Journal of Geomechanics and Engineering
 - Sustainable Civil Infrastructures
 - International Journal of Pavement Research and Technology
 - ASTM Geotechnical Testing Journal
 - ASTM Journal of Testing and Evaluation
 - ASCE Journal of Geotechnical and Geoenvironmental Engineering
 - Canadian Geotechnical Journal
 - Journal of Hydrological Engineering
 - International Journal of Pavement Engineering
 - Transportation Research Board
 - International Journal of Geomechanics
 - Journal of Geotechnical and Geological Engineering
- Reviewer for Conference Proceedings
 - International Conference on Transportation Geotechnics (ICTG), Chicago (2021)
 - IFCEE 2018: International Foundations Congress and Equipment Expo, March 5-10, 2018, Orlando, Florida
 - PanAm-UNSAT 2017: Second Pan-American Conference on Unsaturated Soils (Unsaturated Soil Mechanics for Sustainable Geotechnics), November 12-15, 2017, Dallas, Texas
 - GeoChina International Conference, Shandong, China, July 25-27, 2016
 - GeoShanghai International Conference, Shanghai, China, May 26-28, 2014
 - GeoHubei International Conference: Sustainable Civil Infrastructures: Innovative Technologies and Materials, Hubei, China, July 20-22, 2014
 - Geo-Congress 2014 International Conference: Geo-Characterization and Modeling for Sustainability, Atlanta, Georgia, February 23-26, 2014
 - Geo-Congress 2012 International Conference: State of the Art and Practice in Geotechnical Engineering, Oakland, California, March 25-29, 2012
 - GeoHunan International Conference II: Emerging Technologies for Design, Construction, Rehabilitation, and Inspections of Transportation Infrastructures, Changsha, Hunan, China, June 9-11, 2011
 - Geo-Frontiers 2011 International Conference: Advances in Geotechnical Engineering, Dallas, Texas, March 13-16, 2011
 - GeoHunan International Conference I: Challenges and Recent Advances in Pavement Technologies and Transportation Geotechnics, Changsha, Hunan, China, August 3-6, 2009

- Eight International Conference on the Bearing Capacity of Roads, Railways, and Airfields, Champaign, Illinois, June 29 July 2, 2009
- Fourth International Conference on Unsaturated Soils (UNSAT 2006), Carefree, Arizona, April 2-6, 2006
- Symposium on Advanced Experimental Unsaturated Soil Mechanics (EXPERUS 2005), Trento, Italy, June 27-29, 2005

National-Level

- Graduate Program Reviewer
 - M.S. Degree, Department of Civil Engineering, Kennesaw State University, Atlanta, Georgia (2023)
- External Reviewer

*Names of individuals are not included to ensure their dossiers' confidentiality

- Promotion to Associate Professor with Tenure dossier of a faculty member* at Arizona State University, Tempe, Arizona (2024)
- Promotion to Professor with Tenure dossier of a faculty member* at Kennesaw State University, Atlanta, Georgia (2023)
- Tenure and Promotion to Associate Professor of a faculty member* at Purdue University Fort Wayne, Fort Wayne, Indiana (2021)
- Promotion to Professor dossier of a faculty member* at Kennesaw State University, Atlanta, Georgia (2019)
- Society Membership
 - Post-Tensioning Institute (PTI)
 - American Society of Testing and Materials (ASTM)
 - American Society of Civil Engineers (ASCE)
 - Geo-Institute
 - Western North America Interferometric Synthetic Aperture Radar Consortium (WInSAR)
 - America's Registry of Outstanding Researchers
 - Society of American Military Engineers (SAME)
 - United States Universities Council on Geotechnical Education and Research (USUCGER)
- Technical Committee Membership
 - ASCE Unsaturated Soils Committee
 - ASTM Subcommittee D18.14 on Geotechnics of Sustainable Construction
 - TRB Engineering Behavior of Unsaturated Soils, AFP60
 - TRB Chemical and Mechanical Stabilization, AFS90
 - TC38 Soil-Structure Committee of ISSMGE
- Reviewer
 - Research Proposal for the Upper Great Plains Transportation Institute, Fargo, North Dakota (2016-2017)

- Research Problem Statement for the Transportation Consortium of South-Central States, Baton Rouge, Louisiana (2017)
- Work Plan for the Minnesota Department of Transportation (MnDOT) Research Project "Performance Based Measurement of Optimum Moisture for Soil Compaction" (2013)
- Table of Contents for the book titled "Soil Mechanics for Geotechnical Engineers," (Author: Laurence D. Wesley) for the publisher John Wiley & Sons. (2010)
- Workshops/Courses (Taught)
 - Soil Suction Measurement Methods: Filter Paper Method, Thermocouple Psychrometer, and Transistor Psychrometer. Texas Department of Transportation, District Offices in Bryan, Austin, and Fort Worth, Texas (2006)
 - Laboratory Unsaturated Soil Diffusion Coefficient Measurements. Texas Department of Transportation, District Offices in Bryan, Austin, and Fort Worth, Texas (2006)
 - Measurement of Soil Suction, Foundation Performance Association, Houston, Texas (2003)

X. Honors and Awards

- Poster Presentation at Oklahoma Transportation Research Day, 3rd Place Award (2019)
- Poster Presentation at Oklahoma Governor's Water Conference and Water Resources Symposium, 1st Place Award (2012)
- Poster Presentation at ODOT-OkTC Transportation Research Day, 1st Place Award (2011)
- Graduate School Research Award, Texas Tech University, Lubbock, Texas (1996)
- Scholarship for Higher Education, Higher Education Council of Turkey, Ankara, Turkey (1993)
- Dean's List, Middle East Technical University, Ankara, Turkey (1989-1990)

XI. Professional Development

- Professor Training Course, National Center for Asphalt Technology (NCAT), Auburn, Alabama. June 14-18, 2021
- Challenges for Transportation Geotechnics in Extreme Climates at the 2nd International Conference on Transportation Geotechnics, IS-Hokkaido 2012, Sapporo, Japan, September 10-12, 2012
- Intelligent Compaction by FHWA and Transtec Group, GeoHunan International Conference II: Emerging Technologies for Design, Construction, Rehabilitation, and Inspections of Transportation Infrastructures, Changsha, Hunan, China, June 9-11, 2011
- Instrumentation and Monitoring Bootcamp: Planning, Execution and Measurement Uncertainty for Structural and Geotechnical Construction Projects. ASCE. Denver, Colorado, July 22-23, 2010
- Intelligent Compaction, Transportation Research Board 89th Annual Meeting, Washington, DC, January 10-14, 2010
- ExCEEd Teaching Workshop, Northern Arizona University, Flagstaff, Arizona, July 12-17, 2009

- EPSCoR NSF Grants Workshop in Oklahoma City, May 16, 2008
- The 4th Pile Driving Contractors Association Professors' Driven Pile Institute Workshop in Logan, Utah, June 18-22, 2007
- Short Course on Finite Elements in Geotechnical Engineering, ASCE Geo-Denver Conference: New Peaks in Geotechnics, February 18-21, 2007

XII. Industrial Experience

A. FUGRO SOUTH, INC., DALLAS, TEXAS (2001-2003)

• As a geotechnical engineer, I was involved with approximately fifteen geotechnical engineering design projects for residential developments, and typical representative projects include: 1) Heritage Glen Addition, Fort Worth, Texas; 2) Wynfield Farms, Little Elm, Texas; 3) Future Residential Development, Allen, Texas; 4) Fannin Farm West, Arlington, Texas; and 5) Mansfield National, Mansfield, Texas.

B. DINCER CONSTRUCTION COMPANY, ANKARA, TURKEY (1993)

• As a site engineer, I was responsible for various activities of the construction of a reinforced concrete commercial building.

XIII. Consulting

A. <u>Research</u>

- "State Highway 130 Toll Road Project in Texas: Ferrovial-Agroman-Cintra Construction and Toll Road Management," *Project PI: Dr. Dallas Little at Texas A&M University*, College Station, Texas. (2011-2013)
- "NCHRP 10-84 Project: Modulus-Based Construction Specification for Compaction of Earthwork and Unbound Aggregate," National Cooperative Research Program (NCHRP), Transportation Research Board of the National Academics. Project PI: Dr. Sobeil Nazarian at the University of Texas-El Paso, Texas. (2010-2013)
- 3. "Determining the Cause of Poor Performance of Some Asphalt Pavements in Texas Panhandle using Layered Elastic Analysis," *LaFarge. Project PI: Dr. Steve Cross at Oklahoma State University*, Stillwater, Oklahoma. (Summer 2009)

B. INDUSTRY

- 1. Maxima Geophysics LLC, (2023-Current)
- 2. Frasier & Hickman, LLP, (2015-2020)