

Timothy A. Wood, Ph.D., P.E.

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307 LeTellier Hall, 4 Jenkins Ave, Charleston, SC 29409

Research Interests

- *Classical-model, literature-driven, holistic* undergraduate education through classroom, laboratory, and research activities
- Production-oriented analysis and inspection of *in-service soil-structure systems* (culvert load rating, foundation and buried structure load testing, etc.)
- *Object-oriented software* development (MS Visual Studio) and *relational database* (SQL Server) implementation particularly at the intersection of *geotechnical* engineering and *structural* engineering

Education

- Doctorate of Philosophy in Civil Engineering – **Computational Geomechanics** 2012 – 2015
- *Improved Culvert Load Rating through an Evaluation of the Influence of Cover Soil Depth, Demand Model Sophistication, and Live Load Attenuation Method*
 - Texas Tech University, College of Engineering
 - GPA: 4.000
- Master's of Science in Civil Engineering – **Structural / Geotechnical** 2007 – 2009
- *An Evaluation of Alternative Analysis Methods for Production Load Rating of Culverts*
 - Texas Tech University, College of Engineering
 - GPA: 4.000
- Bachelor's of Science in **Engineering Physics / Structures with Honors** 2003 – 2006
- Texas Tech University, College of Engineering
 - GPA: 3.974, Summa Cum Laude

Registration

Profession Engineer, South Carolina, No. 38321 2020 – current

Professional Experience

- Assistant Professor** 2016 – current
Dept. of Civil and Environmental Engineering, School of Engineering
The Citadel, Charleston, SC, USA
- Senior Research Associate** 2016
Center for Multidisciplinary Research in Transportation (TechMRT)
Texas Tech University (TTU), Lubbock, TX, USA
- Research Associate** TechMRT, TTU 2009 – 2015
- Research Aide** TechMRT, TTU 2007 – 2009
- Graduate Research Assistant** TechMRT, TTU 2006 – 2007

Service Leadership

Committee Research Coordinator	2020 – current
AKB70 Standing Committee on Culverts, Buried Bridges and Soil-Structure Interaction Transportation Research Board, National Research Council, National Academies of Science	
Faculty Fellow in Residence	2020 – current
Center for Excellence and Innovation in Teaching, Learning and Distance Education The Citadel, Charleston, SC, USA	

Awards and Honors

Best Paper Nomination from the New Engineering Educators Division for PIC IV for Wood, T. A. , Nale, D. D., and Giles, R. K. (2020). "Closing the Homework Feedback Loop Using Dual-Submission-with-Reflection Homework Methodology." <i>2020 ASEE Virtual Annual Conference Content Access</i> , American Society for Engineering Education, Virtual. [Presenter]	2020
The Citadel, School of Engineering, Department of Civil, Environmental, and Construction Engineering, Dr. Harry C. Saxe Outstanding Teaching Award	2020
The American Society for Engineering Education, Southeast Section, Outstanding New Teacher Award	2020
The Citadel, New Faculty Member Excellence Award	2019
Southern Plains Transportation Center, Top Student Paper Honorable Mention	2015
Southern Plains Transportation Center, Top Ph.D. Dissertation Award	2015
Best of the Session Paper Award Recipient, Texas Section ASCE	2009
Order of the Engineer ringed member	2006
Tau Beta Pi Engineering Honor Society member	2005
Honor Society of Phi Kappa Phi member	2005
Boy Scouts of America, Eagle Scout, Troop 437, Richardson, Texas	2002

Teaching Experience

The Citadel

CIVL 103 Introduction to Civil Engineering

5 sections, 3 semesters; 100% lecture

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2018 Fall-02	4.7	20
2019 Fall-02	4.8	9
2019 Fall-03	4.8	17
2019 Fall-04	5.0	15
2020 Fall-03 (Hybrid)	5.0	17
Average	4.86/5.0	78

CIVL 202 Statics

17 sections, 9 semesters; 100% lecture

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2016 Fall-01	4.8	25
2016 Fall-03	4.6	21
2017 Spring-01	4.6	27
2017 Spring-03	4.7	27
2017 Fall-02	4.7	22
2017 Fall-04	4.8	22
2018 Spring-01	4.8	32
2018 Fall-02	4.9	22
2018 Fall-04	4.8	26
2019 Spring-01	4.5	26
2019 Spring-02	4.8	30
2019 Fall-01	4.9	24
2019 Fall-03	4.9	25
2020 Spring-01 (CoViD)	4.8	26
2020 Spring-02 (CoViD)	4.8	24
2020 Fall-01 (Hybrid)	4.8	24
2020 Fall-02 (Hybrid)	5	23
Average	4.77/5.0	426

CIVL 203 Dynamics

16 sections, 11 semesters; 100% lecture

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2016 Fall-01	4.5	18
2017 Summer-91	4.7	24
2017 Fall-01	4.5	25
2017 Fall-02	4.6	19
2018 Spring-01	4.6	21
2018 Spring-02	4.5	23
2018 Summer-91	4.6	17
2018 Fall-01	4.7	24
2018 Fall-02	4.9	17
2019 Spring-02	4.8	27
2019 Spring-03	4.8	26
2019 Summer-81	4.9	13
2019 Fall-03	4.8	19
2020 Spring-03 (CoViD)	4.8	25
2020 Spring-81 (Online)	5.0	10
2020 Fall-01	4.8	11
Average	4.72/5.0	319

CIVL 210 Computer Applications for Civil Engineers

2 sections, 2 semesters; 100% lecture

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2019 Fall-03	4.8	19
2020 Spring-01 (CoViD)	5	18
Average	4.90/5.0	37

CIVL 307 Materials Lab

9 sections, 7 semesters; 20% lecture and 80% hands-on, guided learning

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2016 Fall-01	4.7	13
2016 Fall-03	4.6	13
2017 Fall-02	4.5	18
2018 Spring-02	4.3	18
2018 Spring-04	4.3	16
2019 Spring-01	4.6	17
2019 Fall-01	4.6	16
2020 Spring-01 (CoViD)	4.9	16
2020 Fall-81 (Hybrid)	4.8	17
Average	4.59/5.0	144

CIVL 410 Geotechnical Engineering II

2 sections, 1 semester; 100% lecture

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2017 Spring-01	4.4	18
2017 Spring-81	4.7	24
Average	4.55/5.0	42

Texas Tech University

Guest Lecturer	CE3321	Introduction to Geotechnical Engineering	2008 – 2010
	CE3340	Principles of Structural Design	2007 – 2010

CE3121 Geotechnical Lab

18 sections, 9 semesters; 25% lecture and 75% hands-on, guided learning

<i>Semester and Section</i>	<i>Effectiveness</i>	<i>Enrollment</i>
2008 Fall-301	4.59	17
2008 Fall-302	4.69	16
2009 Spring-301	4.69	26
2009 Spring-303	4.56	32
2009 Fall-303	4.68	19
2009 Fall-304	4.42	19
2012 Fall-301	4.54	13
2012 Fall-303	4.75	16
2013 Spring-301	3.82	17
2013 Spring-303	4.56	16
2013 Fall-301	4.63	16
2013 Fall-303	4.65	17
2014 Spring-301	4.79	14
2014 Spring-304	4.75	12
2014 Fall-301	4.77	13
2014 Fall-302	4.60	14
2015 Spring-301	4.69	15
2015 Spring-304	5.00	15
Average	4.60/5.0	307

Published Work

Refereed National Circulars: 1

Standing Committee on Subsurface Soil-Structure Interaction. (2018). *Culverts and Soil-Structure Interaction: Fifty Years of Change and a Twenty-Year Projection*. Transportation Research Board of the National Academy of Science, Washington, D.C. [Wood, T.A. serving as Format Editor]

Refereed Journal Articles: 9

- Wood, T. A., Lawson, W. D., Jayawickrama, P. W., and Surles, J. G. (2018). "[Pullout Behavior of Steel Mechanically Stabilized Earth Reinforcements](#)." *Transportation Research Record: Journal of the Transportation Research Board*.
- Seo, H., Wood, T. A., Javid, A. H., and Lawson, W. D. (2017). "[Simplified System-Level Pavement-Stiffness Model for Box Culvert Load-Rating Applications](#)." *J. Bridge Eng.*, 22(10), 04017066.
- Wood, T. A., Lawson, W. D., Surles, J. G., Jayawickrama, P. W., and Seo, H. (2016). "[Improved Load Rating of Reinforced Concrete Box Culverts through Depth-Calibrated Live Load Attenuation](#)." *J. Bridge Eng.*, 21(12), 04016095.
- Wood, T. A., Lawson, W. D., and Jayawickrama, P. W. (2015). "[Influence of Cover Soil Depth on the Load Rating of Reinforced Concrete Box Culverts](#)." *Transportation Research Record*, 2511, 63-71.
- Jayawickrama, P. W., Lawson, W. D., Wood, T. A., and Surles, J.G. (2015). "[Pullout Resistance Factors for Steel MSE Reinforcements Embedded in Gravelly Backfill](#)." *J. Geotech. and Geoenviron. Eng.*, 141(2), 04014090.
- Wood, T. A., Lawson, W. D., Jayawickrama, P. W., and Newhouse, C. D. (2015). "[Evaluation of Production Models for Load Rating Reinforced Concrete Box Culverts](#)," *J. Bridge Eng.*, 20(1), 04014057.
- Lawson, W. D., Jayawickrama, P. W., Wood, T. A., and Surles, J. G. (2014). "[Evaluation of AASHTO Default Values for Pullout Resistance Factor, F* for Steel and Grid Mat Reinforcement](#)," *Transportation Research Record*, 2462, 7-17.
- Lawson, W., Jayawickrama, P., Wood, T. A., and Surles, J. (2013). "[Pullout Resistance Factors for Inextensible MSE Reinforcements Embedded in Sandy Backfill](#)," *Transportation Research Record*, 2363, pp.21-29.
- Jayawickrama, P. W., Lawson, W. D., Wood, T. A., and Senanayake, A. J. (2012). "[Effect of Skewing and Splaying on Pullout Capacity of Steel Reinforcement in Mechanically Stabilized Earth Structures](#)," *Transportation Research Record*, 2310, 81-89.

Refereed Conference Presentations and Proceedings: 40

- Wood, T. A.** (2020). "[Three Models and Engineering Analysis.](#)" *2020 ASEE Virtual Annual Conference Content Access*, American Society for Engineering Education, Virtual. **[Presenter]**
- Wood, T. A.** (2020). "[Effective PocketLab Sensor Use in an Engineering Dynamics Course.](#)" *2020 ASEE Virtual Annual Conference Content Access*, American Society for Engineering Education, Virtual. **[Presenter]**
- Wood, T. A.**, Nale, D. D., and Giles, R. K. (2020). "[Closing the Homework Feedback Loop Using Dual-Submission-with-Reflection Homework Methodology.](#)" *2020 ASEE Virtual Annual Conference Content Access*, American Society for Engineering Education, Virtual. **[Presenter]**
- Watson, M. K., Ghanat, S. T., **Wood, T. A.**, Davis, W. J., Bower, K. C., Hornor, T., and Welch, R. W. (2020). "A Summer Calculus Experience to Encourage Development of Community and Self-efficacy Building of Civil Engineering Students." *2020 ASEE Virtual Annual Conference Content Access*, American Society for Engineering Education, Virtual.
- Batouli, M., **Wood, T. A.**, Michalaka, D., Brown, K., and Welch, R. (2020). "Adopting ASCE ExCEED Model for Engineering Education: Lessons Learned and Implementation Strategies." *ASEE Southeastern Section Conference*, American Society for Engineering Education, Auburn, AL, 9.
- Wood, T. A.**, and Niswender, C. (2020). "An Improved, Low-Cost Culvert and Hydraulic-Infrastructure Inspection Vehicle: CHIVE." *Transportation Research Board 2020 Annual Meeting*, Session 1669, National Academies of Science, Washington, D.C. **[Presenter]**
- Watson, M. K., Ghanat, S. T., **Wood, T. A.**, Davis, W. J., and Bower, K. C. (2019). "A Systematic Review of Models for Calculus Course Innovations: American Society for Engineering Education." *2019 ASEE Annual Conference and Exposition*, American Society for Engineering Education, Tampa, FL.
- Book, E. K., **Wood, T. A.**, and Plumlee, J. M. (2019). "Student and Faculty Perspective and Survey Results on an Innovative Homework Process: American Society for Engineering Education." *2019 ASEE Annual Conference and Exposition*, American Society for Engineering Education, Tampa, FL.
- Wood, T. A.**, Batouli, M., Michalaka, D., Brown, K., and Book, E. (2019). "Perspectives on an Innovative Homework Policy." *2019 ASEE Southeastern Section Conference*, Raleigh, NC, 7.
- Batouli, M., Burke, R., and **Wood, T. A.** (2019). "Gamification of Student Advising: Helping Students Decide Between Civil and Construction Engineering." *ASEE Southeastern Section Conference*, Raleigh, NC, 4.
- Wood, T. A.**, Terrell, E. O., and Johnsen, J. (2018). "Scale Model Investigation of Pipe Pile Plugging." *International Foundation Conference and Equipment Expo*, March 9, 2018, ASCE Geo-Institutes, Orlando, FL. **[Presenter]**
- Grayson, J. M., **Wood, T. A.**, Robinson, R., Plumbee, J., and Prince-Nelson, S. (2018). "The Influence of Mathematical Preparedness on Student Performance in an Engineering Statics Course." *ASEE Southeastern Section Conference*, Daytona Beach, FL.

- Wood, T.A.**, Lawson, W.D., Jayawickrama, P.W., and Surles, J.G. (2018). "Pullout Behavior of Steel Mechanically Stabilized Earth Reinforcements," *Transportation Research Board 2018 Annual Meeting*, Session 386, Washington, D.C. 18-01457.
- Wood, T.A.**, Surles, J.G., Mousavi, S.M., Jayawickrama, P.W., Javid, A.D., Seo, H., and Lawson, W.D. (2017). "Modeling Factors Influencing Culvert Load Ratings: A Parametric Analysis," *Geotechnical Frontiers 2017 Transportation Facilities, Structure, and Site Investigation GSP 277*, Orlando, FL, March 12-15, 2017. **[Presenter]**
- Mousavi, S.M., Jayawickrama, P.W., **Wood, T.A.**, and Lawson, W.D. (2017). "Selection of Soil Stiffnesses for the Load Rating of In-Service Culverts," *Geotechnical Frontiers 2017 Transportation Facilities, Structure, and Site Investigation GSP 277*, Orlando, FL, March 12-15, 2017.
- Wood, T.A.**, Grayson, J.M., and Brown, K. (2017) "Faculty and Student Perceptions of Plickers," *ASEE Zone II Conference*, San Juan, Puerto Rico, March 2-5, 2017, V3D2.
- Grayson, J.M., Ghanat, S. and **Wood, T.A.** (2017) "Use of Active versus Passive Learning pedagogies in a Statics course to Address Variations in Student Performance between Course Sections," *ASEE Zone II Conference*, San Juan, Puerto Rico, March 2-5, 2017, V3D3.
- Seo, H., **Wood, T.A.**, Javid, A.H., and Lawson, W.D. (2017). "A Simplified Pavement Model for Improved Production Culvert Load Rating," *Transportation Research Board 2017 Annual Meeting*, Session 221, Washington, D.C. 17-05787.
- Lawson, W.D., Seo, H., **Wood, T.A.**, and Surles, J.G. (2017). "Practical Lessons Learned from Load Rating Thousands of Older, Bridge-Class, Reinforced Concrete Box Culvert Structures," *Transportation Research Board 2017 Annual Meeting*, Session 221, Washington, D.C. 17-06025.
- Wood, T. A.**, Lawson, W.D., Seo, H., and Surles, J.G. (2016). "Improved Load Rating of Reinforced Concrete Box Culverts Through Depth-Calibrated Live Load Attenuation," *Transportation Research Board 2016 Annual Meeting*, Session 743, Washington, D.C. 16-0523. **[Presenter]**
- Morse, S.M., **Wood, T. A.**, and Lawson, W.D. (2016). "CULVLR: Software Program for Load Rating of Reinforced Concrete Box Culverts," *Transportation Research Board 2016 Annual Meeting*, Session 743, Washington, D.C. 16-4338. **[Presenter]**
- Jayawickrama, P. W., Lawson, W. D., Seo, H., **Wood, T. A.** and Moghaddam, R. B. (2015). "Prediction of Axial Load Capacity Based on Texas Cone Penetration Test Data," *Proceedings, International Conference on Geotechnical Engineering 2015*, pp.443-446.
- Jayawickrama, P. W., Lawson, W. D., **Wood, T. A.**, and Surles, J. G. (2015). "Impact of Compaction Level and Depth of Fill on the Pullout Resistance of Ribbed Strip MSE Reinforcement." *IFCEE 2015*: pp. 1483-1492.
- Lawson, W. D., Terrell, E. O., Surles, J. G., Moghaddam, R. B., **Wood, T. A.**, Seo, S. and Jayawickrama, P. W. (2015). "Correlation of Texas Cone Penetration and Standard Penetration Test N-Values," *Proceedings 2015 Geo-Congress: International Foundations Congress. & Equipment Exposition*, San Antonio, TX, Mar 17-21, 2015.

- Jayawickrama, P. W., **Wood, T. A.**, and Lawson, W. D. (2015). "Influence of Cover Soil Depth on Reinforced Concrete Box Culvert Load Rating," *Transportation Research Board 2015 Annual Meeting*, Session 614, Washington, D.C. 15-4795.
- Jayawickrama, P. W., Lawson, W. D., **Wood, T. A.**, and Surles, J. G. (2015). "Pullout Resistance Factors for Ladder-like Strip Reinforcements Used in MSE Wall Construction," *Transportation Research Board 2015 Annual Meeting*, Session 503, Washington, D.C. 15-4776.
- Jayawickrama, P. W., Lawson, W. D., **Wood, T. A.** and Surles, J. G. (2014). "Pullout Behavior of Welded Grid Reinforcements Embedded in Coarse Granular Backfill," *Proceedings 2014 Geo-Congress: Geo-Characterization and Modeling for Sustainability*, Atlanta, GA, Feb 23-26, 2014.
- Wood, T. A.**, Lawson, W. D., Newhouse, C. D., and Jayawickrama, P. W. (2014). Comparison of Culvert Load Ratings Calculated by Three Methods. *Geo-Congress 2014 Technical Papers*: pp. 1473-1482.
- Lawson, W. D., Jayawickrama, P. W., **Wood, T. A.**, and Surles, J. G. (2014). "Evaluation of AASHTO Default Values for Pullout Friction Factor, F^* , for Steel Grid Mat Reinforcement," *Transportation Research Board 2014 Annual Meeting*, Session 268, Washington, D.C. 14-5707.
- Lawson, W. D., Jayawickrama, P. W., **Wood, T. A.**, Surles, J. G. (2013). Pullout Resistance Factors for Steel Reinforcement used in TxDOT MSE Walls. *Geotechnical Special Publication No. 231, Geo-Congress 2013: Stability and Performance of Slopes and Embankments III*, San Diego, CA, March 3-7, 2013.
- Lawson, W. D., Jayawickrama, P. W., **Wood, T. A.**, and Surles, J. G. (2013). "Pullout Resistance Factors for Inextensible MSE Reinforcements Embedded in Sandy Backfill," *Transportation Research Board 2013 Annual Meeting*, Session 209, Washington, D.C. 13-2684.
- Jayawickrama, P. W., Senanayake, A., Lawson, W. D., and **Wood, T. A.** (2012). "Impact of Spatial Variability of Soil Parameters on Culvert Load Rating," *Geotechnical Special Publication No. 225, Geo-Congress 2012: State of the Art and Practice in Geotechnical Engineering*, Oakland, CA.
- Jayawickrama, P. W., Lawson, W. D., **Wood, T. A.**, Surles, J. G., and Senanayake, A. (2012). "Effect of Skewing and Splaying on Pullout Capacity of Steel MSE Reinforcement," *Transportation Research Board 2012 Annual Meeting*, Session 614, Washington, D.C. 12-2021.
- Jayawickrama, P. W., Lawson, W. D., and **Wood, T. A.** (2011). "A Large Scale Test System to Investigate MSE Soil Reinforcement-Backfill Interaction," *Proceedings CD-ROM, International Conference on Advances in Highway Engineering and Transportation Systems*, Colombo, Sri Lanka.
- Senanayake, A., Jayawickrama, P. W., Lawson, W.D., and **Wood, T. A.** (2011), "Role of 3D Finite Element Modeling in the Analysis of Soil-Structure Interaction Problems," *Proceedings CD-ROM, International Conference on Advances in Highway Engineering and Transportation Systems*, Colombo, Sri Lanka, July 25-26, 2011.

- Jayawickrama, P. W., Lawson, W. D., and **Wood, T. A.** (2011). Evaluation of Soil Properties for Culvert Load Rating Applications. *Geo-Frontiers 2011*: pp. 2659-2668.
- Wood, T. A.**, Lawson, W. D., Newhouse, C. D. and Jayawickrama, P. W. (2010). "The Influence of Structural Analysis Method on Culvert Load Rating" *Compendium of Papers CD-ROM, 89th Annual Meeting of the Transportation Research Board, Washington D.C., January 10-14, 2010.*
- Jayawickrama, P. W., and **Wood, T. A.** (2009). "Performance Evaluation of an MSE/Soil Nail Hybrid Wall," *Proceedings, Texas Section ASCE, April 2009, South Padre Island, Texas,* (Best of the Session Paper Award Recipient).
- Wood, T. A.**, Jayawickrama, P. W., and Lawson, W. D. (2009). Instrumentation and Monitoring of an MSE/Soil Nail Hybrid Retaining Wall. *Contemporary Topics in Ground Modification, Problem Soils, and Geo-Support*: pp. 177-184.
- Newhouse, C. D., and **Wood, T. A.** (2008). The Effect of Temperature on the Effective Prestressing Force at Release for PCBT Girders. *ASCE Structures Congress*. ASCE, Vancouver, BC. **[Presenter]**

Major Research Deliverables: 3

- Wood, T. A.**, Morse, S.M., Jayawickrama, P. W., Newhouse, C. D., and Lawson, W. D. (2013). *Culvert Load Rating Software CULVLR 1.0.2*. TxDOT Product No. FHWA/TX-13/5-5849-01-P1. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX.
- Lawson, W. D., Jayawickrama, P., and **Wood, T. A.** (2012). Field Guide for Reinforcement Reconfiguration Around Obstructions.
- Lawson, W. D., **Wood, T. A.**, Newhouse, C. D., and Jayawickrama, P. W. (2009), *Texas Department of Transportation Culvert Rating Guide*, TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX.

Research Reports: 14

- Seo, H., Moghaddam, R. B., Surles, J. G., Jayawickrama, P. W., **Wood, T. A.**, Lawson, W.D. (2015). *Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test: Volume 1, Development of Load Test Dataset*. Report No. FHWA/TX-14-0-6788-1-Vol.1, Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX.
- Seo, H., Moghaddam, R. B., Surles, J. G., Jayawickrama, P. W., **Wood, T. A.**, Lawson, W.D. (2015). *Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test: Volume 2, Resistance Factors for Driven Pile Foundations*. Report No. FHWA/TX-14-0-6788-1-Vol.2, Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (312 pages)
- Seo, H., Moghaddam, R. B., Surles, J. G., Jayawickrama, P. W., **Wood, T. A.**, Lawson, W.D. (2015). *Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test: Volume 3, Resistance Factors for Drilled Shaft Foundations in Soil*. Report No. FHWA/TX-14-0-6788-1-Vol.3, Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (384 pages)
- Seo, H., Moghaddam, R. B., Surles, J. G., Jayawickrama, P. W., **Wood, T. A.**, Lawson, W.D. (2015). *Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test: Volume 4, Resistance Factors for Drilled Shaft Foundations in Intermediate Geomaterials*. Report No. FHWA/TX-14-0-6788-1-Vol.4, Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (270 pages)
- Bae, S. W., Tate, D., **Wood, T. A.**, Zou, D., Bligh, R., Menges, W. L., Gonzalez, V., Griggs, D., Yang, Q. (2014). *Testing of Alternative Supporting Materials for Portable Roll-Up Signs Used for Maintenance Work Zones*. Report No. FHWA/TX-14/0-6639-1. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (228 pages)

- Lawson, W. D., **Wood, T. A.**, Morse, S.M., Jayawickrama, P. W., and Newhouse, C. D. (2013). *Software Development to Implement the TxDOT Culvert Rating Guide*. Report No. FHWA/TX-13/5-5849-01-1. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (26 pages)
- Wood, T. A.**, Jayawickrama, P. W., Newhouse, C. D., Morse, S. M., and Lawson, W. D. (2013). *Load Rating TxDOT Culvert Design Standards Volume 1: Level 1 Analysis Per AASHTO Policy*. Report No. FHWA/TxDOT-13/5-5849-03 Vol. 1. Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (3800 pages)
- Wood, T. A.**, Jayawickrama, P. W., Newhouse, C. D., Morse, S. M., and Lawson, W. D. (2013). *Load Rating TxDOT Culvert Design Standards Volume 2: Level 3 Analysis Per AASHTO Policy*. Report No. FHWA/TxDOT-13/5-5849-03 Vol. 2. Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (2600 pages)
- Wood, T. A.**, Jayawickrama, P. W., Newhouse, C. D., Morse, S. M., and Lawson, W. D. (2013). *Load Rating TxDOT Culvert Design Standards Volume 3: Level 1 Analysis Per TxDOT Policy*. Report No. FHWA/TxDOT-13/5-5849-03 Vol. 3. Final report submitted. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (3800 pages)
- Jayawickrama, P. W., Surlles, J. G., **Wood, T. A.**, and Lawson, W. D. (2013). *Pullout Resistance of MSE Reinforcements in Backfills Typically Used in Texas: Volume 1, Research Report*. Report No. FHWA/TX-13/0-6493-1. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (274 pages)
- Wood, T. A.**, Jayawickrama, P. W., Surlles, J. G., and Lawson, W. D. (2012). *Pullout Resistance of MSE Reinforcements in Backfills Typically Used in Texas: Volume 2, Test Reports for MSE Reinforcements in Type B (Sandy Backfill)*. Report No. FHWA/TX-13/0-6493-1 Vol. 2. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (854 pages)
- Wood, T. A.**, Jayawickrama, P. W., Surlles, J. G., and Lawson, W. D. (2012). *Pullout Resistance of MSE Reinforcements in Backfills Typically Used in Texas: Volume 3, Test Reports for MSE Reinforcements in Type A (Gravelly Backfill)*. Report No. FHWA/TX-13/0-6493-1 Vol. 3. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (681 pages)
- Lawson, W. D., Jayawickrama, P. W., **Wood, T. A.**, and Surlles, J. G. (2011). *Final Research Report: MSE Pullout Testing for RECO HA-Ladder and HA-Strip Reinforcements*. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (290 pages)
- Lawson, W. D., **Wood, T. A.**, Newhouse, C. D., and Jayawickrama, P. W. (2010). *Evaluating Existing Culverts for Load Capacity Allowing for Soil Structure Interaction*. Report No. FHWA/TX-10-/0-5839-1. TechMRT: Multidisciplinary Research in Transportation, Texas Tech University, Lubbock, TX. (310 pages)

Research Experience

Co-Principle Investigator: 9 projects, \$3.4 million (prorated \$577,000)

Encouraging Civil Engineering Retention by Increasing Community and Self-Efficacy

Amount: \$999,914.00 (**\$100,000 approx. as Co-PI**) 5/1/2018 – 4/30/2023

Sponsor: National Science Foundation (NSF)

Contribution: Supporting community building and enrichment activities for high-achieving, low-income students with demonstrated financial need at The Citadel in Charleston, SC.

Culvert Inspection Software, Tools and Techniques

Amount: **\$15,000.00 as PI** 9/1/2016 – 6/30/2021

Sponsor: Citadel Foundation and School of Engineering Faculty Research Grants

Contribution: Developed culvert inspection and load rating capabilities including the CHIVE culvert inspection vehicle with veteran student Craig Niswender.

Load Rating TxDOT pre-1980 In-Service Culverts 7/15/2014 – 6/15/2016

Amount: \$1,097,227 (**\$175,566 as Co-PI**)

Sponsor: Texas Department of Transportation (TxDOT) Bridge Division

Contribution: Data management for 11,000 culvert structures, overseeing 60 undergraduate researchers, culvert load rating expertise, reporting

Snow and Ice Chemicals for Texas Roads: Modification 3, Field and Lab Testing

Amount: \$226,164 (**\$29,401 as Co-PI**) 8/31/2014 – 8/31/2015

Sponsor: TxDOT/Federal Highway Administration (FHWA)

Contribution: Field testing of deicing salts, design and execution

Reliability Based Deep Foundation Design Using Texas Cone Penetrometer (TCP) Test

Amount: \$399,845 (**\$99,961 as Co-PI**) 9/1/2012 – 8/31/2014

Sponsor: TxDOT/FHWA

Contribution: Data management and analysis of 75 deep foundation load tests, programing, reporting

Load Rating TxDOT Culvert Design Standards 6/1/2012 – 4/30/2013

Amount: \$180,449 (**\$45,112 as Co-PI**)

Sponsor: TxDOT/FHWA

Contribution: Data management, load rating 2000 culvert standard designs under a full range of cover soil depths, culvert load rating expertise, reporting

Software Development to Implement the TxDOT Culvert Rating Guide 6/1/2012 – 11/20/2012

Amount: \$74,288 (**\$18,572 as Co-PI**)

Sponsor: Sponsored by TxDOT/FHWA

Contribution: Development of CULVLR (TxDOT's multibarrel, reinforced concrete box culvert load rating program), culvert load rating expertise

Pullout Resistance of Mechanically Stabilized Earth Reinforcement in Backfills Used in Texas
Amount: \$393,374 (**\$78,675 as Co-PI**) 9/1/2009 – 8/31/2012
Sponsor: TxDOT/FHWA
Contribution: Large scale lab testing design, large-scale pullout testing of over 700 steel MSE reinforcements, data management and analysis, reporting

Perform Live Load Testing of Sandwich Panel System (SPS) Bridges in Wise County
Amount: \$29,366 (**\$14,683 as Co-PI**) 10/8/2009 – 8/31/2010
Sponsor: TxDOT/FHWA,
Contribution: Field testing execution, data acquisition

Full-time Researcher: 5 projects, \$1.4 million

Testing of Alternative Supporting Materials for Portable Roll-Up Signs Used for Maintenance Work Zones 9/1/2010 – 8/31/2013
Amount: \$508,663,
Sponsor: TxDOT/FHWA,
Contribution: Field testing design and evaluation of portable roll-up signs

Implementing the Ultra-High Pressure Water Cutter for Roadway Maintenance Applications
Amount: \$333,490 9/1/2010 – 8/31/2012
Sponsor: TxDOT/FHWA
Contribution: Field testing execution, gathering data on pavement roughness, reporting

MSE Pullout Testing for RECo HA Ladder and HA Strip Reinforcements 6/1/2011 – 8/31/2011
Amount: \$24,052
Sponsor: Reinforced Earth Company, Vienna, VA
Contribution: Large-scale lab testing execution, data analysis, reporting

Evaluating Existing Culverts for Load Capacity Allowing for Soil Structure Interaction
Amount: \$215,630 9/1/2007 – 8/31/2009
Sponsor: TxDOT/FHWA,
Contribution: Live load field testing design and execution, data analysis, numerical modeling, parametric analysis, report preparation

Design Procedures for MSE/Soil Nail Hybrid Wall Systems 9/1/2004 – 8/31/2008
Amount: \$386,157
Sponsor: TxDOT/FHWA,
Contribution: Field testing execution, data acquisition

Additional Proposals:

NCHRP 15-54: Proposed Modifications to AASHTO Culvert Load Rating Specifications
Selected but not awarded
Amount: \$500,000 (**\$100,000 as Co-PI**)
Sponsor: National Cooperative Highway Research Program (NCHRP)