

Shenghua Wu, Ph.D., P.E., LEED AP

Assistant Professor

Department of Civil, Coastal, and Environmental Engineering, University of South Alabama

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Research Areas

- Smart materials and innovative technologies for civil infrastructures
- Advanced laboratory characterization for construction materials
- Materials recycling, reclaim, and reuse towards sustainability
- Asphalt technology and pavement engineering
- Transportation infrastructure rehabilitation and maintenance
- Roadway performance forensic evaluation, modeling, and mechanistic-empirical design

Education

- **Ph. D. in Civil Engineering, Area: Geotechnical & Pavement Engineering**
Washington State University, Pullman, WA, 2011–2016
Advisor: Professor Balasingam Muhunthan
Dissertation: *A Mechanistic-Empirical Model for Top-down Cracking in Asphalt Pavement Overlay*
- **M.S. in Civil Engineering, Area: Highway & Railway Engineering**
Hunan University, Changsha, China, 2008–2011
Advisor: Professor Menglan Zeng
Thesis: *Experimental Study on Steel Slag-Crushed Stone Pavement Base Materials Stabilized with Portland Cement*
- **B.S. in Civil Engineering, Area: Structure and Construction Engineering**
Central South University of Forestry and Technology, Changsha, China, 2004–2008

Licensure

- Professional Engineer (PE), Geotechnical Engineering, AL, No. 39362
- Leadership in Energy & Environmental Design (LEED) Accredited Professional (AP), Building Design + Construction (BD+C), U.S. Green Building Council, No. 10985308-AP-BD+C

Professional Affiliation

- Member, American Society of Civil Engineers (ASCE)
- Member, American Society for Testing and Materials (ASTM) International
- Member, Academy of Pavement Science and Engineering (APSE)
- Member, Transportation Research Board (TRB) AJE35 Standing Committee on Research Innovation Implementation Management
- Member, TRB AKM90 Standing Committee on Polymer Concretes, Adhesives, and Sealers
- Member, Transportation & Development Institute (T&DI) Highway Pavement Committee
- Editorial Board Member, ASTM International, Journal of Testing and Evaluation (JTE)
- Editorial Board Member, International Journal of Pavement Research and Technology (IJPRT)

Awards and Honors

- Excellence in Teaching Award, College of Engineering, University of South Alabama, 2021
- Community Engagement Faculty Fellows Award, University of South Alabama, 2020
- Outstanding Reviewer, International Journal of Fatigue, 2018
- Outstanding Reviewer, Construction and Building Materials, 2017
- Certificate of Volunteer Excellence, Illinois Union Office of Volunteer Programs, 2017
- The David R. Jones IV Annual Scholarship, the Association of Modified Asphalt Producers (AMAP), 2015
- Washington Asphalt Pavement Association Scholarship, 2015
- Osborn Outstanding Graduate Student Award, Washington State University, 2015
- Pertee Engineering Graduate Fellowship in Civil Engineering, Washington State University, 2015
- Annual Scholarship 1st Prize, Hunan University, 2009 and 2010

Professional Experience

A. Teaching/Advising Experience

- **Assistant Professor**, College of Engineering, University of South Alabama, 2017–present
 - EG101 Introduction to Engineering and Design
 - EG283 Statics
 - EG284 Dynamics
 - EG315 Mechanics of Materials
 - EG360 Fluid Mechanics
 - CE314 Civil Engineering Materials, CE315 CE Materials Lab
 - CE384 Structural Analysis, CE385 Structural Analysis Lab
 - CE490/590 Pavement Design
 - CE490/590 Special Topic: Advanced Characterization of Transportation Materials
- **Associate Member, Graduate Faculty**, University of South Alabama, 2021–present
- **FE-Exam Review Volunteer**, providing a 5-day Fundamentals of Engineering (FE) exam reviewing lecture and practice quizzes, University of South Alabama, 2020–present
- **Mentor** for undergraduate and graduate research, University of South Alabama, 2017–present
- **Faculty Advisor**, Society of Sustainable Engineering (SSE), University of South Alabama, 2020–present
- **Faculty Advisor**, Chinese Students & Scholars Association (CSSA), University of South Alabama, 2019–present
- **Advisor**, Student Campus Sustainability, University of Illinois at Urbana-Champaign, 2016–2017
- **Laboratory Trainer**, Advanced Transportation Research and Engineering Laboratory, UIUC, 2015–2017
- **Co-Instructor**, Washington State University, 2015
 - CE567 Advanced Transportation Topic: Superpave Mix Design
- **Teaching Assistant**, Washington State University, 2013–2015
 - CE211 Statics, CE317 Geotechnical Engineering, CE425/525 Soil and Site Improvement, CE473 Pavement Design and Analysis
- **Laboratory Trainer**, Washington Center for Asphalt Technology, 2014–2015

Mentored Undergraduate/Graduate Students

- Morgan Davis (2021 Florida FRSA Scholarship for Roofing)
- Ian Adkins (2021 SURF receiver)
- Ara Haji (2021 SURF receiver)
- Michael Cottrell (2021 undergraduate research assistant)
- Luke Montalvo (2020 SURF receiver, 2020 Bruce Tucker Memorial Scholarship)
- Colton Spell (2020 SURF receiver)
- Kenneth Jackson (2020 Alabama Road Builders Association Scholarship, 2019 Bruce Tucker Memorial Scholarship)
- Hayden Jenkins (2020 Tau Beta Pi scholarship)
- Omar Tahri (2019 SURF receiver)
- Omar Tahri (M.S., graduated in 2021 Summer), role: thesis committee chair
- Benjamin Burton (M.S., pending), role: thesis committee member
- Ifezue Obiako (M.S., graduated in 2019), role: thesis committee member

Training & Workshop

- First Year Experience (FYE) Faculty Development, June to July, 2021
- Collaborative Online International Learning (COIL) Elements Workshop, June 2021
- Advanced Summer Institute, University of South Alabama, June to July, 2021
- Strategic Course Design Mini-Course, University of South Alabama, March 2021
- Professor-Training Course, National Center for Asphalt Technology (NCAT) and National Asphalt Pavement Association (NAPA), Auburn University, June 17–21, 2019
- Grant-Writing Fellowship Program, David G. Bauer Associates, Inc., 2018–2019
- Association of College and University Educators (ACUE) courses in Effective Teaching Practices, 2018–2019
- Scholarship of Teaching and Learning Workshop, University of South Alabama, July 2018
- Team-based Learning (TBL) Workshop, University of South Alabama, 2017
- New Faculty Scholars Program, University of South Alabama, 2017–2018
- I-clicker Workshop, University of South Alabama, 2017–2018
- Nuclear Density Tester Course, Hot Mix Asphalt Level 1, and Mixture Aggregate, Illinois Department of Transportation, 2015–2016
- Asphalt Testing Training, Idaho Asphalt Supply Inc., 2014

Media Coverage

- “Recycle, Reclaim and Repave: South Professor, Students Test Recycled Asphalt”, July 15, 2020.
<https://www.southalabama.edu/departments/publicrelations/pressreleases/071520asphalt.html>
- “Special Project Emphasizes Ethics and Professionalism”. The Magazine of the American Society of Civil Engineers, April issue, 2020.
- “Cooling Off a Hot Mess: South Researchers Test Ways to Make Asphalt Production Safer, More Environmentally Friendly”, January 24, 2019.
<https://www.southalabama.edu/colleges/engineering/news/012419asphalt.html>
- “TeamUSA Faculty Accomplishments in Team-Based Learning Research and Innovation”, April 22, 2019. <https://www.southalabama.edu/departments/qep/news/tblc.html>
- “Faculty Receive National Credential in Teaching Excellence”, May 23, 2019.
<https://www.southalabama.edu/departments/publicrelations/pressreleases/052319faculty.html>

B. Research Experience

- **Assistant Professor, University of South Alabama, 2017–present**
 - Evaluation of Effectiveness in Characterizing Volumetric Properties Using a Universal Air Void Measurement Device, funded by Measurement Solution Co.
 - A Forensic Evaluation on 100% Reclaimed Asphalt Pavement Cold Mix with Blacklidge’s ReCharge™ Technology, funded by Blacklidge Emulsion Co.
 - Evaluation of Inundation-related Pavement Material Deterioration, funded by USA Faculty Development Council
 - Incorporation of Recycled Plastic into Asphalt Mixtures, funded by USA SURF program
 - Rejuvenators for Cold Mix Asphalt, funded by USA SURF program
 - Evaluation of Effectiveness of Bio-Based Graphene Reinforced Asphalt Mixture, funded by USA Faculty Development Council
 - Evaluation of Recycled Glass for Civil Infrastructure, funded by USA SURF program
 - Pavement Surface Treatments for Ice-Prone Locations in the Illinois Highway System, funded by Illinois Department of Transportation
 - Integrating Team-Based Learning Modules to Improve Engineering Students’ Technical Writing Skills, funded by Team-based Learning Collaborative (TBLC)
- **Senior Sustainability Research Engineer, Illinois Center for Transportation, 2015–2017**
 - ICT R27-161: Construction and Performance Monitoring of Various Asphalt Mixes
 - ICT R27-160: Sustainability Engineering and Support
 - ICT R27-SP31: Evaluation of I-FIT Results and Machine Variability Using Mnroad Test Track Mixes
 - ICT R27-175: Development of Long-Term Aging Protocol for Implementation of I-FIT
 - ICT R27-SP34: Evaluation of Various Tack Coat Materials Using Interface Shear Device
 - IDOT/FHWA joint process review: Early-age Cracking Performance of HMA
 - IDOT MOBA Paver-IR Ground Penetrating Radar (GPR) Study
- **Research Assistant, Washington State University, 2011–2015**
 - National Cooperative Highway Research Program (NCHRP) 9-49A Project: Phase II - Long Term Field Performance of Warm Mix Asphalt
 - Evaluation of Fiber-Reinforced Asphalt Pavement
 - Evaluation of Recycled Asphalt Shingles, and Stone Matrix Asphalt in Washington State
 - Performance Evaluation of Warm Mix Asphalt in Washington State
 - Evaluation of Steel Slag as Aggregate in Hot Mix Asphalt to Resist Studded Tire Wear
 - Investigation of The Effect of Bitumen Surface Treatment on Underlying Asphalt Pavement
- **Research Assistant, Hunan University, China, 2008–2011**
 - Investigation of Reclaimed Asphalt Pavement Using Warm Mix Asphalt Technology
 - Evaluation of Steel Slag - Crushed Stone Base Materials Stabilized with Inorganic Binding Materials

C. Industrial Experience

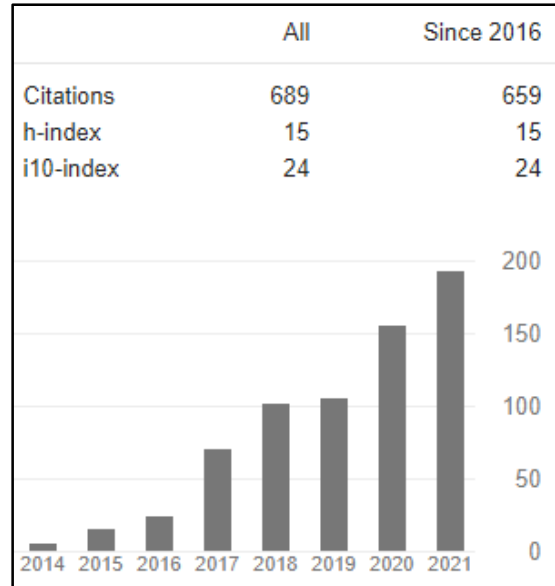
- **Senior Sustainability Research Engineer, Springfield, IL, 2015–2016**
Working with Illinois Department of Transportation to promote transportation sustainability, designing and implementing Industry Affiliate Program at Illinois Center for Transportation
- **Engineer-in-training, Loudi, China, 2010–2011**
Field coordination for the construction of base and subbase containing steel slag

Publications

Summary of Publication, and Citation from Google Scholar

Year	Number of Published Paper
2017 Fall*	4
2018	8
2019	6
2020	6
2021	7
Average	6.2

* Hired at the University of South Alabama since 2017 Fall



A. Peer-Reviewed Journals (Corresponding Author*; mentored students)

2021

1. L. Liu, **S. Wu***, G. Yao, J. Zhang, L. Montalvo, and O. Tahri. (2021). Developing In-Situ Permeability and Air Voids Requirements for Open-Graded Friction Course Pavement: Case Study. *International Journal of Civil Engineering*. DOI: <https://doi.org/10.1007/s40999-021-00650-8>
2. **S. Wu***, and L. Montalvo. (2021). Repurposing Waste Plastics into Cleaner Asphalt Pavement Materials: A Critical Literature Review. *Journal of Cleaner Production*, Vol. 280. DOI: <https://doi.org/10.1016/j.jclepro.2020.124355>
3. **S. Wu***, O. Tahri, S. Shen, W. Zhang, and B. Muhunthan. (2021). Environmental Impact Evaluation and Long-term Rutting Resistance Performance of Warm Mix Asphalt Technologies. *Journal of Cleaner Production*, Vol. 278. DOI: <https://doi.org/10.1016/j.jclepro.2020.123938>
4. R. Zhang, W. Zhang*, S. Shen, **S. Wu**, and Y. Zhang. (2021). Evaluation of the Correlations between Laboratory Measured Material Properties with Field Cracking Performance for Asphalt Pavement. *Construction and Building Materials*, Vol. 301. DOI: <https://doi.org/10.1016/j.conbuildmat.2021.124126>
5. S. Zha*, **S. Wu**, and J. Estis. Using Team-based Learning to Promote Engineering Students' Performance and Self-efficacy in a Technical Writing Class. *IEEE Transactions on Professional Communication* (Accepted in May, 2021). 10.1109/TPC.2021.3110619
6. K. Yan, H. Lan, Z. Duan, W. Liu, L. You, **S. Wu**, and M. Miljković. (2021). Mechanical Performance of Asphalt Rejuvenated with Various Vegetable Oils. *Construction and Building Materials*, Vol. 293, DOI: <https://doi.org/10.1016/j.conbuildmat.2021.123485>

7. W. Zhang*, X. Chen, S. Shen, L. N. Mohammad, B. Cui, **S. Wu**, and A. Khan. (2021). Investigation of Field Rut Depth of Asphalt Pavements Using Hamburg Wheel Tracking Test. *Journal of Transportation Engineering, Part B: Pavements*, Vol. 147, Issue 1. DOI: <https://doi.org/10.1061/JPEODX.0000250>

2020

8. **S. Wu***, L. Liu, G. Yao, J. Zhang, and O. Tahri. (2020). Laboratory Investigation of an Alternative Permeability Indicator to Determine Optimal Maintenance Timing for Open-Graded Friction Course. *Journal of the Transportation Research Board*, Vol. 2674, pp. 165-177. DOI: <https://doi.org/10.1177/0361198120912731>
9. **S. Wu***, S. Zha, and S. Mattson. (2020). Integrating Team-based Learning Modules to Improve Civil Engineering Students' Technical Writing Skills. *ASCE Journal of Civil Engineering Education*, Vol. 146, Issue 3. DOI: [https://doi.org/10.1061/\(ASCE\)EI.2643-9115.0000016](https://doi.org/10.1061/(ASCE)EI.2643-9115.0000016)
10. L. Liu, G. Yao, J. Zhang, and **S. Wu***. (2020). Evaluation of Long-Term Permeability Performance of In-Service Open-Graded Friction Course and Effect of Cleaning on the Its Permeability Restoration. *Journal of Transportation Engineering, Part B: Pavements*, Vol. 146, Issue 1. DOI: <https://doi.org/10.1061/JPEODX.0000153>
11. K. Yan*, G. Li, L. You, Y. Zhou, and **S. Wu**. (2020). Performance Assessments of Open-Graded Cement Stabilized Macadam Containing Recycled Aggregate. *Construction and Building Materials*, Vol. 233. DOI: <https://doi.org/10.1016/j.conbuildmat.2019.117326>
12. K. Yan*, M. Zhang, L. You, **S. Wu**, and H. Ji. (2020). Performance and Optimization of Castor Beans-based Bio-asphalt and European Rock-asphalt Modified Asphalt Binder. *Construction and Building Materials*, Vol. 240. DOI: <https://doi.org/10.1016/j.conbuildmat.2019.117951>
13. K. Yan*, H. Sun, L. You, and **S. Wu**. (2020). Characteristics of Waste Tire Rubber (WTR) and Amorphous Poly Alpha Olefin (APAO) Compound Modified Porous Asphalt Mixtures. *Construction and Building Materials*, Vol. 253. DOI: <https://doi.org/10.1016/j.conbuildmat.2020.119071>

2019

14. L. Liu, **S. Wu***, W. Xie, and G. Yao. (2019). Numerical Analysis of Rehabilitated Concrete Pavement Using Crack-And-Seating Technique. *International Journal of Pavement Engineering*. DOI: <https://doi.org/10.1080/10298436.2019.1673389>
15. **S. Wu***, and O. Tahri. (2019). State-of-Art Carbon and Graphene Family Nanomaterials for Asphalt Modification. *Road Materials and Pavement Design*, Vol. 22, Issue 4, pp. 735-756. DOI: <https://doi.org/10.1080/14680629.2019.1642946>
16. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. (2019). Field Performance of Foaming Warm Mix Asphalt Pavement. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2673, Issue 3, pp. 281-294. DOI: <https://doi.org/10.1177/0361198119832885>
17. W. Zhang*, S. Shen, **S. Wu**, J. Xue, X. Chen, and L. N. Mohammad. (2019). Effects of In-place Volumetric Properties on Field Rutting and Cracking Resistance of Asphalt Pavement, *Journal of Materials in Civil Engineering*, Vol. 31, Issue 8. DOI: [https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0002767](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002767)

18. **S. Wu***, and B. Muhunthan. (2019). A Mechanistic-Empirical Model for Predicting Top-down Fatigue Cracking in an Asphalt Pavement Overlay. *Road Materials and Pavement Design*, Vol. 20, Issue 6, pp. 1322-1353. DOI: <https://doi.org/10.1080/14680629.2018.1443832>
19. **S. Wu**, H. Wen*, W. Zhang, S. Shen, L. N. Mohammad, A. Faheem, and B. Muhunthan. (2019). Field Performance of Top-down Fatigue Cracking for Warm Mix Asphalt Pavements. *International Journal of Pavement Engineering*, Vol. 20, Issue 1, pp. 33-43. DOI: <http://dx.doi.org/10.1080/10298436.2016.1248204>

2018

20. **S. Wu***. (2018). Characterization of Ductility of Field-aged Petroleum Asphalt. *Petroleum Science and Technology*, Vol. 36, Issue 9-10, pp. 696-703. DOI: <https://doi.org/10.1080/10916466.2018.1443125>
21. **S. Wu***, and B. Muhunthan. (2018). Evaluation of Effect of Waste Engine Oil on the Rheological Properties of Asphalt Binders. *Journal of Materials in Civil Engineering*, Vol. 30, Issue 3. DOI: [https://doi.org/10.1061/\(ASCE\)MT.1943-5533.0002189](https://doi.org/10.1061/(ASCE)MT.1943-5533.0002189)
22. F. R. Safi, K. Hossain*, **S. Wu**, I. L. Al-Qadi, and H. Ozer. (2018). A Model to Predict Creep Compliance of Asphalt Mixtures Containing Recycled Materials. *Construction and Building Materials*, Vol. 184, pp. 374-381. DOI: <https://doi.org/10.1016/j.conbuildmat.2018.06.232>
23. **S. Wu**, W. Zhang, S. Shen*, and B. Muhunthan. (2018). Case Study: Evaluation of the Effect of Extraction Temperature on WMA Binder Containing Sasobit Additive. *Journal of Testing and Evaluation*, Vol. 46, Issue 5, pp. 2140-2150. DOI: <https://doi.org/10.1520/JTE20160516>
24. W. Zhang, A. Bahadori, S. Shen, **S. Wu**, B. Muhunthan, and L. N. Mohammad. (2018). Comparison of Laboratory and Field Asphalt Aging for Polymer-Modified and Warm-Mix Asphalt Binders. *Journal of Materials in Civil Engineering*, Vol. 30, Issue 7. DOI: <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29MT.1943-5533.0002354>
25. S. Shen*, W. Zhang, **S. Wu**, B. Muhunthan, and L. N. Mohammad. (2018). Long-term Field Performance of Flexible Pavements Using Warm Mix Asphalt Technologies. *Journal of Association of Asphalt Paving Technologies*, Vol. 87, pp. 163-198.
26. W. Zhang, S. Shen*, and **S. Wu**. (2018). Comparison of the Relative Long-term Field Performance among Various Warm Mix Asphalt (WMA) Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2672, Issue 28, pp: 200-210. DOI: <https://doi.org/10.1177%2F0361198118780702>
27. L. Liu, W. Xie, Y. Wang, and **S. Wu***. (2018). Evaluation of Significant Factors for Aggregate Retention in Chip Seals Based on Mesostructured Finite Element Model. *International Journal of Pavement Research and Technology*, Vol. 11, pp. 709-716. DOI: <https://doi.org/10.1016/j.ijprt.2018.02.004>

2017

28. **S. Wu***, I. L. Al-Qadi, D. L. Lippert, H. Ozer, A. F. Espinoza-Luque, and F. R. Safi. (2017). Early-Age Performance Characterization of Hot-Mix Asphalt Overlay with Varying Amounts of Asphalt Binder Replacement. *Construction and Building Materials*, Vol. 153, pp. 294-306. DOI: <https://doi.org/10.1016/j.conbuildmat.2017.07.114>
29. **S. Wu***, W. Zhang, S. Shen, X. Li, B. Muhunthan, and L. N. Mohammad. (2017). Field-Aged Asphalt Binder Performance Evaluation for Evotherm Warm Mix Asphalt: Comparisons with

- Hot Mix Asphalt. *Construction and Building Materials*, Vol. 156, pp. 574-583. DOI: <https://doi.org/10.1016/j.conbuildmat.2017.09.016>
30. **S. Wu***, D. L. Lippert, I. L. Al-Qadi, H. Ozer, I. M. Said, and M. K. Barry. (2017). Impact of High Asphalt Binder Replacement on Level Binder Properties for Controlling Reflective Cracking. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2630, Issue 1, pp. 118-127. DOI: <https://doi.org/10.3141%2F2630-15>
 31. **S. Wu***, and X. Li. (2017). Evaluation of Effect of Curing Time on Mixture Performance of Advera Warm Mix Asphalt. *Construction and Building Materials*, Vol. 145, pp. 62-67. DOI: <https://doi.org/10.1016/j.conbuildmat.2017.03.240>
 32. I. L. Al-Qadi, **S. Wu***, D. L. Lippert, H. Ozer, M. K. Barry, and F. R. Safi. (2017). Impact of High Recycled Mixed on HMA Overlay Crack Development Rate. *Road Materials and Pavement Design*, Vol. 18, Issue 4, 2017, pp. 311-327. DOI: <https://doi.org/10.1080/14680629.2017.1389076>
 33. **S. Wu***, W. Zhang, S. Shen, B. Muhunthan, and L. N. Mohammad. (2017). Short-term Performance and Evolution of Material Properties of Warm- and Hot-Mix Asphalt Pavements. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2631, Issue 1, pp. 39-54. DOI: <https://doi.org/10.3141%2F2631-05>
 34. **S. Wu***. (2017). Evaluate Thermal Cracking Resistance of Asphalt Binder Using 4-mm Dynamic Shear Rheometer Monotonic Test. *Petroleum Science and Technology*, Vol. 35, pp. 732-737. DOI: <https://doi.org/10.1080/10916466.2016.1271812>
 35. **S. Wu***, B. Muhunthan, and H. Wen. (2017). Investigation of Effectiveness of Prediction of Fatigue Life for Hot Mix Asphalt Blended with Recycled Concrete Aggregate Using Monotonic Fracture Testing. *Construction and Building Materials*, Vol. 131, pp. 50-56. DOI: <https://doi.org/10.1016/j.conbuildmat.2016.11.045>
 36. W. Zhang, S. Shen*, **S. Wu**, and L. N. Mohammad. (2017). Long-term Field Aging of Warm Mix and Hot Mix Asphalt Binders. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2632, Issue 1, pp. 140-149. DOI: <https://doi.org/10.3141%2F2632-15>
 37. W. Zhang, S. Shen*, A. Faheem, P. Basak, **S. Wu**, and L. N. Mohammad. (2017). Predictive Quality of the Pavement ME Design Program for Field Performance of Warm Mix Asphalt Pavements. *Construction and Building Materials*, Vol. 131, pp. 400-410. DOI: <https://doi.org/10.1016/j.conbuildmat.2016.11.086>
 38. W. Zhang, S. Shen*, **S. Wu**, and L. N. Mohammad. (2017). Prediction Model for Field Rut Depth of Asphalt Pavement based on Hamburg Wheel Tracking Test Properties. *Journal of Materials in Civil Engineering*, Vol. 29, Issue 9. DOI: <https://ascelibrary.org/doi/abs/10.1061/%28ASCE%29MT.1943-5533.0001946>
 39. **S. Wu***, H. Wen, S. Chaney, K. Littleton, and S. Muench. (2017). Evaluation of Long-Term Performance of Stone Matrix Asphalt in Washington State. *Journal of Performance of Constructed Facilities*, Vol. 31, Issue 1. DOI: [http://dx.doi.org/10.1061/\(ASCE\)CF.1943-5509.0000939](http://dx.doi.org/10.1061/(ASCE)CF.1943-5509.0000939)
 40. H. Wen, **S. Wu***, S. Chaney, K. Littleton, and S. Muench. (2017). Quantification of the Effects of Bitumen Surface Treatments on the Material Properties of Existing Asphalt

Pavement. *Journal of Materials in Civil Engineering*, Vol. 29, Issue 4. DOI: <http://ascelibrary.org/doi/abs/10.1061/%28ASCE%29MT.1943-5533.0001789>

2016

41. **S. Wu**, H. Wen*, W. Zhang, S. Shen, A. Faheem, and L. N. Mohammad. (2016). Long-Term Field Transverse Cracking Performance of Warm-Mix Asphalt Pavement and Its Significant Material Property. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2576, Issue 1, pp. 109-120. DOI: <https://doi.org/10.3141%2F2576-12>
42. **S. Wu**, K. Zhang, H. Wen*, J. DeVol, and K. Kelsey. (2016). Performance Evaluation of Hot Mix Asphalt Containing Recycled Asphalt Shingles in Washington State. *Journal of Materials in Civil Engineering*, Vol. 28, Issue 1. DOI: [10.1061/\(ASCE\)MT.1943-5533.0001357_04015088](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001357_04015088)
43. H. Wen*, **S. Wu**, L.N. Mohammad, W. Zhang, S. Shen, and A. Faheem. (2016). Long-Term Field Rutting and Moisture Susceptibility Performance of Warm-Mix Asphalt Pavement. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2575, Issue 1, pp. 103-112. DOI: <https://doi.org/10.3141%2F2575-11>
44. N. Bower, H. Wen*, **S. Wu**, K. Willoughby, J. Weston, and J. DeVol. (2016). Evaluation of the Performance of Warm Mix Asphalt in Washington State. *International Journal of Pavement Engineering*, Vol. 17, Issue 5, pp. 423-434. DOI: <https://doi.org/10.1080/10298436.2014.993199>
45. H. Wen*, **S. Wu**, and S. Bhusal. (2016). Evaluation of the Use of Steel Slag as Asphalt Mix Asphalt to Mitigate Studded Tire Wear. *Journal of Materials in Civil Engineering*, Vol. 28, Issue 5. DOI: [10.1061/\(ASCE\)MT.1943-5533.0001475_04015191](https://doi.org/10.1061/(ASCE)MT.1943-5533.0001475_04015191)

2015

46. W. Zhang, S. Shen*, P. Basak, H. Wen, **S. Wu**, A. Faheem, and L. N. Mohammad. (2015). Development of Predictive Models for Initiation and Propagation of Field Transverse Cracks. *Transportation Research Record: Journal of the Transportation Research Board*, Vol. 2524, Issue 1, pp. 92-99. DOI: <https://doi.org/10.3141%2F2524-09>

2010-2011

47. M. Zeng, **S. Wu**, et al. (2011). Experimental Study on Steel Slag-Crushed Stone Pavement Base Materials Stabilized with Portland Cement. *Natural Science Journal of Xiangtan University*, Vol. 33, pp. 29-33 (in Chinese).
48. M. Zeng, H. Huang, L. Peng, and **S. Wu**. (2011). Dynamic Properties of Crumb Rubber Modifier Asphalt Concrete under Impact Loading, *Journal of Hunan University (Natural Sciences)*, Issue 12, pp. 1-7 (in Chinese).
49. Y. Zhu, C. Wu, J. Zhang, and **S. Wu**. (2011). Comparison of Performances of Warm Mix Asphalt Mixtures with Three Additives. *Highway*, Issue 7, pp. 202-206 (in Chinese).
50. Y. Zhu, M. Zeng, **S. Wu**, and C. Wu. (2010). Influences of Warm Mix Asphalt Additive Sasobit on Properties of Paving Asphalt. *Central South Highway Engineering*, Vol. 35, pp. 42-44 (in Chinese).

B. Journal/Conference Papers Under Review

1. K. Yan*, L. Li, L. Xiao, K. Liu, L. You, J. Ou, and **S. Wu**. Conversion of Municipal Solid

Waste Incineration Bottom Ash in Bituminous Pavements. *Advanced in Civil Engineering Materials*, submitted on Mar 21, 2021.

2. **S. Wu***, **O. Tahri**, **C. Spell**, and **L. Montalvo**. Case Study: Forensic Evaluation of Field Performance of 100% Reclaimed Asphalt Pavement Cold Mix with Rejuvenator in A Low Volume Road, 101st TRB Annual Meeting, submitted on July 31, 2021.
3. **O. Tahir**, **S. Wu***, **I. Adkin**, **M. Cottrell**, and T. He. Evaluation of an Innovative Waterless Method for Measuring Bulk Specific Gravity of Asphalt Mixtures, 101st TRB Annual Meeting, submitted on July 31, 2021.
4. **O. Tahri**, **S. Wu***, **C. Spell**, and **I. Adkins**. Case Study: Characterization of Short-term Field Aged Asphalt Binders in Cold Mix Asphalt Pavement, 101st TRB Annual Meeting, submitted on July 30, 2021.
5. **S. Wu***, S. Zha, J. Estis, and X. Li. Advancing Engineering Students' Technical Writing Skills by Implementing Team-based Learning Instructional Modules in an Existing Laboratory Curriculum.
6. **S. Wu***, **A. Haji**, and **I. Adkins**. State of Art Review on the Incorporation of Fibers in Asphalt Pavements. *Road Materials and Pavement Design*, submitted on September 29, 2021

C. Technical Reports

1. **S. Wu***, **O. Tahri**. A Forensic Evaluation on 100% Reclaimed Asphalt Pavement Cold Mix with Blacklidge's ReCharge™ Technology. Submitted to Blacklidge Emulsion Inc. 2020.
2. S. Sillick, J. Bittner, H. Hagedorn, D. Kuehn, J. Mcdermott, M. Perchanok, H. Xiang, and **S. Wu**. Transportation Research: Where We've Been, Where We Are, and Where We Are Heading. Centennial Celebration Paper, TRB ABG10 Conduct of Research Committee.
3. I. L. Al-Qadi, D. L. Lippert, **S. Wu**, H. Ozer, G. Renshaw, I. M. Said, A. F. Espinoza-Luque, F. R. Safi, T. R. Murphy, A. Butt, S. Gundapuneni, J. S. Trepanier, and J. W. Vespa. Utilizing Lab Tests to Predict Asphalt Concrete Overlay Performance. Report No. FHWA-ICT-17-020. Illinois Center for Transportation, December 2017.
4. D. L. Lippert, **S. Wu**, and H. Ozer. Illinois Highway Materials Sustainability Efforts of 2015. Report No. FHWA-ICT-16-017, Illinois Center for Transportation, August 2016.
5. D. L. Lippert, **S. Wu**, and H. Ozer. Illinois Highway Materials Sustainability Efforts of 2016. Report No. FHWA-ICT-17-014, Illinois Center for Transportation, July 2017.
6. S. Shen, **S. Wu**, W. Zhang, L. N. Mohammad, and B. Muhunthan. Performance of WMA Technologies: Stage II – Long-term Field Performance. NCHRP Report 843, 2017.
7. D. L. Lippert, **S. Wu**, H. Ozer, I. L. Al-Qadi, J. F. Meister, G. Renshaw, M. K. Barry, I. M. Said, A. F. Espinoza Luque, F. R. Safi, T. R. Murphy, J. S. Trepanier, and J. W. Vespa. Construction and Performance Monitoring of Various Asphalt Mixes in Illinois: 2016 Interim Report. Report No. FHWA-ICT-17-003. Illinois Center for Transportation, February 2017.
8. H. Ozer, I. L. Al-Qadi, E. Barber, E. Okte, Z. Zhu, and **S. Wu**. Evaluation of I-FIT Results and Machine Variability Using Mnroad Test Track Mixtures. Report No. FHWA-ICT-17-012, Illinois Center for Transportation, June 2017.
9. H. Wen., **S. Wu**, and S. Bhusal. Evaluation of Steel Slag as Hot Mix Asphalt Aggregate. Report prepared for Edw. C. Levy Co., and Nucor Steel Seattle Inc., 2014.

10. H. Wen, **S. Wu**, and K. Zhang. Performance Evaluation of Hot Mix Asphalt Containing Recycled Asphalt Shingles in Washington State. In cooperation with Washington Department of Transportation, King County Solid Waste, and King County Department of Transportation, Road Services Division, 2014.

D. Peer-reviewed Conference Presentations

2021

1. **S. Wu***, S. Shen, W. Zhang, B. Muhunthan, and L. N. Mohammed. Characterization of Long-term Performance of Warm Mix Asphalt in the United States. 7th Eurasphalt & Eurobitume (E & E) Congress, Madrid, Spain, (virtual conference), June 17, 2021.
2. L. Montalvo and **S. Wu***, Feasibility Study On the Incorporation of Waste Plastics for Open-Graded Friction Course. ASCE International Airfield & Highway Pavements Conference, Austin, TX, (virtual conference), June 8-10, 2021.
3. C. Spell and **S. Wu***. Evaluation of 100% RAP Cold In-Place Recycling with Rejuvenation Technology. ASCE International Airfield & Highway Pavements Conference, Austin, TX, (virtual conference), June 8-10, 2021.
4. O. Tahri, and **S. Wu***. Evaluation of Effectiveness of 100% RAP Cold Mix with A Rejuvenator for Low Volume Road. ASCE International Airfield & Highway Pavements Conference, Austin, TX, (virtual conference), June 8-10, 2021.
5. **S. Wu***. A Creative Solution for All Times: Integrating Ethics and Professionalism in A Civil Engineering Course. 11th Annual South Alabama Conference on Teaching and Learning, Mobile, AL, (virtual conference), May 12, 2021.
6. S. Shelley-Tremblay, J. Henning, J. Pittman, R. Cummings, **S. Wu**, B. Saale, and J. Manders. Embracing Engagement to Advance Learning and Scholarship in Challenging Times. 11th Annual South Alabama Conference on Teaching and Learning, Mobile, AL, (virtual conference), May 12, 2021.
7. L. Liu, **S. Wu***, G. Yao, J. Zhang, and L. Montalvo. Developing In-Situ Permeability and Volumetric Requirements for Open-Graded Friction Course Pavement. 100th Transportation Research Board Annual Meeting, Washington, D.C., (virtual conference), January 21-29, 2021.

2020

8. **S. Wu***, S. Zha, J. Estis, and X. Li. Innovative Pedagogy: Improving STEM Students' Technical Writing Skills Using Team-Based Learning (TBL). 10th Annual South Alabama Conference on Teaching and Learning, Mobile, AL, (virtual conference), May 12, 2020.
9. **S. Wu***, L. Liu, G. Yao, J. Zhang, and O. Tahri. An Alternative Permeability Indicator to Determine Optimal Maintenance Timing for Open-Graded Friction Course. Presented at 99th Transportation Research Board Meeting, Washington, D.C., January 12-16, 2020.
10. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. Permanent Deformation Resistance of Long-Term Field Aged Asphalt Pavements. Presented at 99th Transportation Research Board Meeting, Washington, D.C., January 12-16, 2020.
11. W. Zhang, X. Chen, S. Shen, L. N. Mohammad, **S. Wu**, and T. Ma. Characterization of Long-Term Field Rutting Performance of Asphalt Pavements Based on Hamburg Wheel-Tracking Test Results. Presented at 99th Transportation Research Board Meeting, Washington, D.C.,

January 12-16, 2020.

2019

12. **S. Wu***. Integrating Team-based Learning (TBL) Modules to Improve Civil Engineering Students' Technical Writing Skill. PE/CoTL Conference, Mobile, AL, June 24, 2019.
13. O. Tahri, and **S. Wu***. Evaluation of Effectiveness of Bio-based Graphene for Asphalt Pavement. International Conference On Transportation & Development, June 9-12, 2019, Alexandria, VA.
14. **S. Wu***, W. Zhang, S. Shen, and B. Muhunthan. Field Performance of Foaming Warm Mix Asphalt Pavement. Presented at 98th Transportation Research Board Meeting, Washington, D.C., January 12-17, 2019.

2018

15. **S. Wu***, and K. Littleton. Case Study: Long-term Performance of SMA Pavements in Washington State. 1st International Conference on Stone Matrix Asphalt, Atlanta, GA, November 6, 2018.
16. S. Shen, W. Zhang, **S. Wu**, L. Mohammad, and B. Muhunthan. Long-term Field Performance of Flexible Pavements Using Warm Mix Asphalt Technologies, Presented at 93rd Association of Asphalt Paving Technologist (AAPT) Annual Meeting, Jacksonville, FL, March 20, 2018.
17. **S. Wu**, W. Zhang, S. Shen, and B. Muhunthan. Asphalt Binder Property to Mixture Property Correlation Based on Field-Aged Samples. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
18. W. Zhang, S. Shen, and **S. Wu**. Comparison of the Relative Long-term Field Performance among Various WMA Pavements. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
19. F. R., Safi, K. Hossain, **S. Wu**, I. L. Al-Qadi, and H. Ozer. A Model to Predict Creep Compliance of Asphalt Mixtures. Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.
20. B. Edoardo, O. Hason, I. L. Al-Qadi, O. Egemen, Z. Zhu, and **S. Wu**. Effect of I-FIT Configuration on Test Results of Asphalt Mixtures, Presented at 97th Transportation Research Board Meeting, Washington, D.C., January 7-11, 2018.

2017

21. I. L. Al-Qadi, **S. Wu**, D. L. Lippert, H. Ozer, M. K. Barry, and F. R. Safi. Impact of High Recycled Mixes on HMA Overlay Crack Development Rate. Presented at 92nd Association of Asphalt Paving Technologist (AAPT) Annual Meeting, Newport Beach, CA, March 19-22, 2017.
22. **S. Wu**, D. L. Lippert, I. L. Al-Qadi, H. Ozer, I. M. Said, and M. K. Barry. Effect of High Binder Replacement on the Effectiveness of Level Binder in Controlling Reflective Cracking. Presented at 96th Transportation Research Board Annual Meeting, Washington, D.C., January 8-12, 2017.
23. **S. Wu**, W. Zhang, S. Shen, B. Muhunthan, and L. N. Mohammad. Case Study: Short-term Performance and Material Property Evolution of Warm Mix Asphalt and Hot Mix Asphalt Pavements. Presented at 96th Transportation Research Board Annual Meeting, Washington,

D.C., January 8-12, 2017.

24. **S. Wu**, I. L. Al-Qadi, D. L. Lippert, H. Ozer, A. F. Espinoza Luque, and F. R. Safi. Early-Age Performance Characterization of Hot-Mix Asphalt Overlay with Varying Amounts of Asphalt Binder Replacement. Presented at 96th Transportation Research Board Annual Meeting, Washington, D.C., January 8-12, 2017.
25. W. Zhang, S. Shen, **S. Wu**, and L.N. Mohammad. Long-term Field Aging of Warm Mix and Hot Mix Asphalt Binders. Presented at 96th Transportation Research Board Meeting, Washington, D.C., January 8-12, 2017.

2016

26. **S. Wu**, H. Wen, W. Zhang, S. Shen, A. Faheem, and L. N. Mohammad. Long-Term Field Performance of Transverse Cracking for Warm Mix Asphalt Pavement and Identification of Significant Material Property for Transverse Cracking. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
27. H. Wen., **S. Wu**, L.N. Mohammad, W. Zhang, S. Shen, and A. Faheem. Long-Term Field Rutting and Moisture Susceptibility Performance of Warm Mix Asphalt Pavement. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
28. **S. Wu**, H. Wen, W. Zhang, S. Shen, L. N. Mohammad, A. Faheem. Long-Term Field Performance of Top-down Fatigue Cracking for Warm Mix Asphalt Pavements and Identification of Significant Material Determinant of Top-down Fatigue Cracking. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.
29. H. Wen, **S. Wu**, S. Chaney, K. Littleton, and S. Muench. Quantification of the Effects of Bitumen Surface Treatments on the Material Properties of Existing Asphalt Pavement. Presented at 95th Transportation Research Board Annual Meeting, Washington, D.C., January 10-14, 2016.

2015

30. H. Wen, **S. Wu**, and S. Bhusal. Evaluation of the Use of Steel Slag as Asphalt Mix Asphalt to Mitigate Studded Tire Wear. Presented at 94th Transportation Research Board Annual Meeting, Washington, D.C., January 11-15, 2015.
31. H. Wen, **S. Wu**. Long-term Field Performance of Warm Mix Asphalt. Presented at Federal Highway Administration (FHWA) Asphalt Mixture Expert Task Group (ETG) Meeting, Fall River, MA, April 7-8, 2015.

2014

32. N. Bower, H. Wen, **S. Wu**, K. Willoughby, J. Weston, and J. DeVol. Evaluation of the Performance of Warm Mix Asphalt in Washington State. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.
33. **S. Wu**, K. Zhang, H. Wen, J. DeVol, and K. Kelsey. Performance Evaluation of Hot Mix Asphalt Containing Recycled Asphalt Shingles in Washington State. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.
34. S. Shen, W. Zhang, **S. Wu**, and L. N. Mohammad. Investigation of the Effect of Warm-Mix Asphalt Properties on Predicted Pavement Performance Using Pavement Mechanistic-Empirical Program. Presented at 93rd Transportation Research Board Annual Meeting, Washington, D.C., January 12-16, 2014.

E. Invited Presentations and International Forums

1. Green Asphalt Pavement Practice: Warm Mix Asphalt Technologies and Their Long-Term Field Performances, Jiangsu University of Science and Technology, October 18, 2019
2. Sustainable Pavement Technology: Warm Mix Asphalt, Hohai University, October 17, 2019
3. High Recycled Materials in Asphalt Pavement Overlay, Xi'an University of Architecture and Technology, May 14, 2019
4. Sustainable Pavement Technology: Warm Mix Asphalt, Dalian University of Technology, May 16, 2019
5. Green Pavement Technology and Its Performance, Chongqing University, May 13, 2019
6. Sustainable Asphalt Pavement: Warm Mix Asphalt Technology and Its Long-Term Field Performance, North China University of Water Conservancy and Electric Power, May 8, 2019
7. Sustainable Asphalt Pavement Practice: Warm Mix Asphalt Technology and Its Long-Term Field Performance. College of Engineering Research Seminar, University of South Alabama, Sep 20, 2018.
8. Pavement Sustainability and Long-term Field Performance of Warm Mix Asphalt Pavement. Hunan University and Central South University of Forestry and Technology, December 12, 2016
9. Pavement Sustainability: Long-term Field Performance of Warm Mix Asphalt Pavement. Xi'an University of Architecture and Technology, December 14, 2016
10. Pavement Sustainability and Long-term Field Performance of Warm Mix Asphalt. Aoxiang Forum for Distinguished Young Scholars, Northwestern Polytechnical University (NPU), December 22, 2016
11. Pavement Sustainability and Long-term Field Performance of Warm Mix Asphalt. Harbin Institute of Technology. December 26, 2016
12. Performance of Sustainable Pavement. Huazhong University of Science and Technology. December 27, 2016
13. Sustainable Transport. Sun Yat-sen University, June 17, 2017
14. Sustainable Pavement Material Characterization. 2nd International Symposium for Chang'an Young Scholars, Chang'an University, China, November 17, 2017
15. Sustainable Pavement and Characterization, 5th Wuhan University International Forum for Interdisciplinary Sciences and Engineering Featured Forum, Wuhan University, April 22, 2018
16. Sustainable Pavement and Characterization. 3rd International Young Scholars "Xinghai Forum", Harbin Engineering University, May 13, 2018
17. Sustainable Pavement and Characterization. Global Young Scholar Forum, Sichuan University, May 16, 2018
18. Sustainable Pavement and Characterization, 1st International Young Scholar Zhixing Forum, Beijing Jiaotong University, July 16, 2018
19. Impact of High Asphalt Binder Replacement on Performance for Overlay and Level Binder Mixes, Kent Seminar, University of Illinois at Urbana-Champaign, February 2, 2017

F. Transportation Research Board Webinar

1. Long-term Field Performance of Warm Mix Asphalt Pavements. October 25, 2017

Grants/Proposals

Funded Proposals:

1. Evaluation Steel Slag as Hot Mix Asphalt Aggregate, sponsored by Edw C. Levy Co. and Nucor Steel, co-PI, 2013, \$78,000.
2. Evaluation of Various Tack Coat Materials Using Interface Shear Device and Recommendations on a Simplified Device, sponsored by Illinois Department of Transportation, co-PI, 2017, \$30,000.
3. Pavement Surface Treatments for Ice-Prone Locations in the Illinois Highway System, Illinois Department of Transportation, co-PI, 2018, \$250,000
4. A Forensic Evaluation on 100% Reclaimed Asphalt Pavement Cold Mix with Blacklidge's ReCharge™ Technology, Blacklidge Emulsion Co., PI, 2020, \$19,978
5. Evaluation of Bio-based Graphene Reinforced Asphalt Mixture, Faculty Development Council Grant Program, PI, 2018, \$5,000
6. Integrating Team-based Learning to Improve Technical Writing Skills for Engineering Students, SoTL Mini-Grant Proposal, PI, 2018, \$500 (phase I), \$500 (phase II).
7. Design and Evaluation of Asphalt Pavements Containing Recycled Glass, USA SURF Program, 2019, \$2,000
8. Integrating Team-based Learning in Improving Technical Writing Skill for STEM Students, TBLC, PI, 2019-2020, \$3,000.
9. Repurposing Waste Plastics into Porous Asphalt Pavements, USA SURF Program, 2020, \$2,000
10. Performance Evaluation of Reclaimed Asphalt Pavement (RAP) Rejuvenated by Bio-Asphalt, USA SURF Program, 2020, \$2,000.
11. Evaluation of Effectiveness in Characterizing Volumetric Properties Using a Universal Air Void Measurement Device VM-100, Measurement Solutions, Inc., PI, 2021, \$7,999.
12. Evaluation of Inundation-related Pavement Material Deterioration, Faculty Development Council Grant Program, PI, 2020-2021, \$5,000.
13. USA-COIL Mini-grant award, University of South Alabama, 2021-2022, \$900.
14. Effects of Seawater on Cold Mix Asphalt in Coastal Regions, USA SURF Program, 2021, \$2,000
15. Developing a Cost Effective and Sustainable Cold Asphalt Patching Material for Pavement Potholes Repair, USA SURF Program, 2021, \$2,000

Proposals Under Review:

1. Guidance for Selection of Proper Asphalt Binder Grade, Airport Asphalt Pavement Technology Program (AAPT) and National Asphalt Pavement Association (NAPA), PI, 2021, \$200,000.
2. ERI: Waste Plastic Modified Concrete. National Science Foundation, PI, 2021, \$199,969
3. Application of A Newly Developed Water Contactless Measurement Device for Determining Bulk Specific Gravity of Various Asphalt Mixtures, NCHRP IDEA Program, PI, 2021, \$125,000
4. Fostering A Transformative and Collaborative Learning Community to Promote Social Justice, Equity and Diversity in Engineering Education, Social Justice program, PI, 2021, \$10,000

Not Funded Proposals:

1. Evaluation of Bonded Concrete Overlays on Asphalt Pavements, NCHRP 01-61, co-PI, 2017 (submitted proposal, not funded), \$500,000.
2. Proposed Enhancements to Pavement ME Design: Improved Consideration of the Influence of Subgrade Soils Susceptible to Shrink/Swell and/or Frost Heave on Pavement Performance, NCHRP 01-59, PI, 2017 (submitted proposal, not funded), \$500,000.
3. LTPP Data Analysis: Feasibility of Using LTPP Data to Develop Relationships Between Laboratory- and Field-Derived Properties of Unbound Materials, NCHRP 20-50(19), PI, 2017 (submitted proposal, not funded). \$70,000.
4. Development of A Novel and Simple Test to Capture Polymers in Asphalt Binders, NCHRP IDEA program, PI, 2018 (submitted proposal, not funded), \$149,995.
5. Optimizing the Benefits of Smoother Roads against the Increased Costs to Build Them, Illinois Department of Transportation, PI, 2018 (submitted proposal, not funded), \$224,899.
6. Evaluation of Sustainability Efforts and Identification of Sustainable Practices for Alabama Department of Transportation, Alabama Department of Transportation, PI, 2018 (not funded), \$66,769.
7. Review and Update of AASHTO Standard Methods of Test T 27 and T 30, NCHRP Project 20-07/Task 421, PI, 2018 (not funded), \$99,999.
8. Evaluation of Stormwater Runoff Contamination and Identification of Best Practice on Mitigating Runoff Contamination at Parking Lot, Alabama Water Resources Research Institute, PI, \$75,000, 2018, (not funded), \$76,639.
9. Evaluate Aging Mechanism of Asphalts with Recycled Materials Using Advanced Technique, Research and Scholarly Development Grant Program, PI, 2018 (not funded), \$25,000.
10. Design and Performance of Open-Graded Friction Course (OGFC) Mixtures Containing Epoxy Asphalt, Florida Department of Transportation, PI, 2018 (not funded), \$238,314.
11. LTPP Data Analysis: Feasibility of Using LTPP Data to Improve Use of FWD and Longitudinal Profile Measurements, NCHRP Project 20-50(22), PI, 2018 (not funded), \$99,998.
12. Developing A Low-Cost and Real-Time Drone-based System for Pavement Markings Measurement, NCHRP IDEA program, PI, 2019 (not funded), \$149,890.
13. Collaborative Research (IRES Track I): International Research Experience Site for STEM Students in Smart and Sustainable Engineering Materials for Resilient Infrastructures, NSF, PI, 2019 (not funded), \$199,997.
14. Developing Laboratory Methods and Specifications to Test Tack Coat Materials, NCHRP 9-64, PI, 2019 (not funded), \$499,646.
15. Compatibilization of Waste Plastic to Enhance Mechanical Properties of Asphalt Cement, FHWA, PI, 2020 (not funded), \$562,550.
16. Compatibility Mechanism for the Recycled Polymer Modified Petroleum Asphalt, American Chemical Society (ACS) Petroleum Research Fund (PRF), PI, 2020 (not funded), \$70,000.
17. Capturing Durability of High Recycled Binder Ratio (RBR) Asphalt Mixtures, NCHRP 9-65, PI, 2020 (not funded), \$749,999.
18. Mechanical Properties of Laboratory Produced Recycled Plastic Modified (RPM) Asphalt Binders and Mixtures, NCHRP 9-66, PI, 2020, \$499,999.

19. Enhancing Resiliency, Societal and Financial Equity in Nature Hazard-Prone and Vulnerable Community, Social Justice Research Initiative Program, PI, 2020 (not funded), \$10,000.
20. Stabilization of Post-Consumer Recycled (PCR) Plastics in Green Roadways, Environmental Research and Education (EREF) Foundation, PI, 2021, \$150,000

Services

A. International & National Level:

- Panel member, ACRP 11-03/Topic S09-09 Automated Pavement Condition Survey Practices at Airports, 9/2021–
- Chair, 12th Annual Workshop Organizing Committee, International Association of Chinese Infrastructure Professionals (IACIP), 8/2021–
- Moderator, “Asphalt Binder Modification and Performance” Session, ASCE International Airfield & Highway Pavements Conference, Austin, TX, (virtual), June 8, 2021.
- Moderator, “Performance of Asphalt Pavements” Session, ASCE International Airfield & Highway Pavements Conference, Austin, TX, (virtual), June 9, 2021.
- Committee member, TRB AJE35 Standing Committee on Research Innovation Implementation Management, 2020–present
- Committee member, TRB AKM90 Standing Committee on Polymer Concretes, Adhesives, and Sealers, (newly appointed, 2021)
- Scientific Committee member, ASCE International Conference on Transportation & Development (ICTD), 2020
- Committee member, TRB ABG10 Standing Committee on Conduct of Research, 2018–2020
- Panel member, ACRP 09-18 Project: Rapid Airfield Concrete Pavement Slab Replacement and Patching Guidance, 2018–present
- Panel member, NCHRP 20-50 Project: LTPP Data Analysis: Significance of As-Constructed Air Voids to Asphalt Pavement Performance, 2017–2020
- Panel member, ACRP 11-03/Topic S02-18 Airport Waste Management and Recycling Practices, 2017–2018
- Panel member, REMADE Institute, Department of Energy, 2020
- Guest Editor, Special Issue “Sustainable Pavement Maintenance Management” of Sustainability, 2020–present
- Member, “Road Construction-Pavement Engineering Materials – Asphalt and Asphalt Mixture Material” Technical Committee, World Transportation Convention, 2018–present
- Editorial Board Member, ASTM International, Journal of Testing and Evaluation (JTE)
- Editorial Board Member, International Journal of Pavement Research and Technology (IJPRT)
- Organizing member, annual workshop, International Association of Chinese Infrastructure Professionals (IACIP), 2018
- International Scientific Committee member, International Society for Asphalt Pavement (ISAP) Asphalt Pavement and Environment (APE) Symposium, 2017–present
- Organizing member, Pavement Life-Cycle Assessment 2017 Symposium, 2017
- Secretary, Organizing Committee for annual workshop, IACIP, 2016
- Member, Organizing Committee, 2017
- Fundraising Committee, IACIP, 2017–2018
- E-mentor, ASCE Career Connections, 2014–present

B. Regional Level:

- Head Judge & Best of Fair Judge, Alabama Regional Science & Engineering Fair, April 9-10, 2021
- Head Judge, Mobile Regional Science & Engineering Fair, March 6, 2020
- Interpreter, Circuit Court of Baldwin County, Alabama, April 17, 2019
- Judge, Alabama Louis Stokes Alliance for Minority Participation (ALSAMP) posters, April 8, 2019
- Judge, Science and Technology Open House (STOH) and the NSF EPSCoR CPU2AL Annual Meeting, April 4, 2019
- Head Judge, Mobile Regional Science & Engineering Fair, March 15, 2019
- Judge, Mobile Regional Science & Engineering Fair, March 16, 2018

C. University Level:

- Writing Committee, University of South Alabama, 8/2021–
- Lab Safety Committee, College of Engineering, University of South Alabama, 8/2021–
- Faculty Advisor, Society of Sustainable Engineering (SSE), University of South Alabama, 2020–present
- Faculty Advisor, Chinese Students & Scholars Association (CSSA), University of South Alabama, 2018–present
- EG committee, College of Engineering, University of South Alabama, 2018–present
- Advisor, Student Sustainability Committee; University of Illinois at Urbana-Champaign, 2016–2017
- Leadership Certificate Coach, University of Illinois at Urbana-Champaign, 2016–2017
- Illinois Promise mentor, and Money Mentor, University of Illinois at Urbana-Champaign, 2016–2017
- Student Senator, Graduate & Professional Students Association (GPSA), WSU, 2013–2015
- Member, Excellence Awards Committee, and the Grant Committee, GPSA, WSU, 2013–2015
- Vice President, Chinese Students & Scholars Association, WSU, 2012–2013

D. Peer Reviewer:

- Editorial board member, Journal Testing and Evaluation, 2015-present (58 times)
- Editorial board member, International Journal of Pavement Research Technology, 2018–present
- Guest editor, Special Issue: Sustainable Pavement Maintenance Management, 2020–present
- Paper review coordinator, Journal of Transportation Research Record, AJE 35 Standing Committee on Research Innovation Implementation, 2020–present
- REMADE panel primary reviewer, Department of Energy, 2020
- Paper review coordinator, Journal of Transportation Research Record, ABG10 Committee, 2018-2019
- Peer reviewer for journals (total 467 manuscripts up to September 2021)

Journal	Review Times
○ Journal of Materials in Civil Engineering	88
○ Construction and Building Materials	70
○ International Journal of Pavement Engineering	47
○ Journal of Cleaner Production	39

○ Case Studies in Construction Materials	35
○ Sustainable Civil Infrastructure	29
○ MDPI-Energies, MDPI-Materials, MDPI-Infrastructures, MDPI-Sustainability, MDPI-Applied Science, MDPI-Minerals	28
○ Road Materials and Pavement Design	25
○ International Journal of Pavement Research Technology	22
○ Journal of Testing and Evaluation	19
○ Advances in Civil Engineering Materials	12
○ Renewable & Sustainable Energy Reviews	12
○ Journal of Transportation Engineering Part b: Pavement	6
○ Journal of Traffic and Transportation Engineering	5
○ International Journal of Civil Engineering	4
○ PLOS ONE	3
○ Resources, Conservation and Recycling	3
○ Transportation Research Part D: Transport and Environment	3
○ Waste Management	3
○ Advances in Civil Engineering	2
○ Journal of Civil Engineering Education	2
○ Measurement	2
○ Structure and Infrastructure Engineering	2
○ Theoretical and Applied Fracture Mechanics	2
○ International Journal of Fatigue	1
○ European Journal of Environmental and Civil Engineering	1
○ Iranian Polymer Journal	1
○ Materials Today: Proceedings	1
● Peer reviewer for conferences (total 109 manuscripts up to September 2021)	
Conference	Review Times
○ The 101 th Transportation Research Board 2021 Annual Meeting, Washington, D.C., January 9-13, 2022	6
○ The International Transport Forum Pre-summit Research Day, 2021	10
○ The 100 th Transportation Research Board 2021 Annual Meeting, Washington, D.C., January 21-29, 2021	4
○ The 99 th Transportation Research Board 2020 Annual Meeting, Washington, D.C., January 12-16, 2020	12
○ World Transport Convention 2019, Beijing, China, June 13-16, 2019	4
○ ASCE International Conference on Transportation & Development (ICTD), Chicago, Pennsylvania, July 21-24, 2019	4
○ PE Conference/CoTL 2019, Mobile, AL, June 24-26, 2019	2
○ The 98 th Transportation Research Board 2019 Annual Meeting, Washington, D.C., January 13-17, 2019	11
○ The 97 th Transportation Research Board 2018 Annual Meeting, Washington, D.C., January 7-11, 2018	16
○ The 96 th Transportation Research Board 2017 Annual Meeting,	2

- Washington, D.C., January 8-12, 2017
- ASCE International Conference on Transportation & Development (ICTD), Pittsburgh, Pennsylvania, July 15-18, 2018 3
 - World Conference on Pavement and Asset Management, June 12-16, 2017 in Baveno, Italy 6
 - GeoShanghai International Conference 2018, Shanghai, China, May 27-30, 2018 2
 - 2016 International Conference on Transportation Infrastructure and Materials, Xi'an, China, July 16-18, 2016 2
 - 91st Association of Asphalt Pavement Technologist (AAPT) 2016 Student Poster Session, Indianapolis, Indiana, March 13-16, 2016 5
 - Pavement Life Cycle Assessment Symposium 2017, Champaign, IL, April 11-13, 2017 2
 - 4th Annual 2016 International Conference on Material Science and Environmental Engineering, Chengdu, China, December 16-18, 2016 6
 - World Transport Convention 2018, Beijing, China, June 18-21, 2018 12