# Isaac L. Howard

Associate Professor, Materials and Construction Industries Chair
Civil and Environmental Engineering (CEE), Mississippi State University (MSU)

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Year of Birth: 1979, Marital Status: Married (Natalie), Children: Daughter (Julie)

| *Degree* | *University* | *Year* | *Area* | *Coursework Credit Hours* |
|---|---|---|---|---|
| BSE | Arkansas State University - ASU | 2001 | Civil Engineering | 141 GPA Hours |
| MSCE | West Virginia University - WVU | 2002 | Civil Engineering | 24 GPA Hours, 15 Thesis |
| PhD | University of Arkansas - UA | 2006 | Civil Engineering | 36 GPA Hours, 21 Diss. |

--Major Professors were Dr. Hota V. GangaRao for MSCE and Dr. Kimberly A. Warren for PhD.

Professional Engineer (PE), State of Mississippi, License Number 21027.

## SUMMARY OF TECHNICAL BACKGROUND AND INTERESTS

Teaching, research, and service activities focus on construction materials, with particular emphasis on civil engineering infrastructure applications. Sustainability, characterization, beneficial reuse, rehabilitation, and recycling are materials focus areas. Airfield and highway flexible pavements are infrastructure components of particular interest. Materials where work has been published include: aggregates, asphalt, asphalt emulsions, chemically stabilized soil, concrete, fiber reinforced polymers, geosynthetics, and wood.

## PROFESSIONAL EXPERIENCE

- ***Undergraduate Teaching Assistant,*** Arkansas State University College of Engineering, Jan 2000 to May 2001, Position grading papers and conducting course help sessions.
- ***Engineering Intern,*** Arkansas Highway and Transportation Department, May 2001 to Aug 2001, Position with surveying and field inspection duties.
- ***Graduate Research Assistant,*** West Virginia University Department of Civil and Environmental Engineering, Aug 2001 to Dec 2002, Position studying fiber reinforced polymer bridge decks.
- ***Temporary Instructor,*** Arkansas State University College of Engineering, Jan 2003 to May 2003, Position teaching undergraduate engineering courses.
- ***Graduate Research Assistant,*** University of Arkansas Department of Civil Engineering, Jun 2003 to Aug 2006, Position studying geosynthetic reinforced flexible pavements.
- ***Assistant Professor,*** Mississippi State University Dept. of Civil and Env. Engineering, Aug 2006 to Aug 2012, Tenure track position with teaching, research, and service duties.
- ***Associate Professor,*** Mississippi State University Dept. of Civil and Env. Engineering, Aug 2012 to Dec 2012, Tenured position with teaching, research, and service duties.
- ***Associate Professor and Endowed Chair,*** Mississippi State University Dept. of Civil and Env. Engineering, Jan 2013 to Present, Tenured position with teaching, research, and service duties.

## DOCUMENTS WRITTEN

### Refereed Journal Articles

1. Warren, K.A, Howard, I.L. (2007). "Sensor Selection, Installation, and Survivability in a Geosynthetic-Reinforced Flexible Pavement," *Geosynthetics International,* 14(5), 298-315.
2. Howard, I.L., Warren, K.A. (2008). "Innovative Data Acquisition for Heavily Instrumented Flexible Pavements," *Journal of Computing in Civil Engineering,* 22(3), 206-215.
3. Shmulsky, R., Saucier, C.L., Howard, I.L. (2008). "Composite Effect of Bolt Laminated Sweetgum and Mixed Hardwood Billets," *Journal of Bridge Engineering,* 13(5), 547-549.
4. Howard, I.L. (2008). "Practical Approaches for Evaluating Bending and Torsion of Fiber Reinforced Polymer Components Using Instrumented Testing," *Journal of Applied Science and Engineering Technology,* 2, 24-30.
5. Howard, I.L., Warren, K.A. (2008). "Investigation of Thin Flexible Pavement Response Between Traffic and the Falling Weight Deflectometer (FWD)," *International Journal of Geotechnical Engineering,* 2(4), 329-341.
6. Howard, I.L., Warren, K.A. (2009). "Finite-Element Modeling of Instrumented Flexible Pavements under Stationary Transient Loading," *Journal of Transportation Engineering,* 135(2), 53-61.
7. Howard, I.L., GangaRao, H.V. (2009). "Testing and Evaluation of Adhesive Bonded Fiber Reinforced Polymer Bridge Decks," *Journal of Advanced Materials,* 41(2), 28-46.
8. Howard, I.L., James, R.S. (2009). "Bottom-Up Fatigue Cracking of Low-Volume Flexible Pavement Analysis from Instrumented Testing," *Transportation Research Record: Journal of the Transportation Research Board,* 2094, 43-52.
9. Warren, K.A., Christopher, B., Howard, I.L. (2010). "Geosynthetic Strain Gage Installation Procedures and Alternative Strain Measurement Methods for Roadway Applications," *Geosynthetics International,* 17(6), 403-430.
10. Howard, I.L. (2011). "Preservation of Low-Volume Flexible Pavement Structural Capacity by Use of Seal Treatments," *Transportation Research Record: Journal of the Transportation Research Board,* 2204, 45-53.
11. Rushing, T.W., Howard, I.L. (2011). "Matting Solutions for Low-Volume Roads," *Transportation Research Record: Journal of the Transportation Research Board,* 2204, 92-101.
12. Jordan, W.S., Howard, I.L. (2011). "Applicability of Modified Vialit Adhesion Test for Seal Treatment Specifications," *Journal of Civil Engineering and Architecture,* 5(3), 215-223.
13. Howard, I.L., Shuler, S., Jordan, W.S., Hemsley, J.M., McGlumphy, K. (2011). "Correlation of Moisture Loss and Strength Gain in Chip Seals," *Transportation Research Record: Journal of the Transportation Research Board*, 2207, 49-57.
14. Howard, I.L., Warren, K.A. (2011). "Finite Element Analysis of Instrumented Thin Flexible Pavement to Quantify Variability," *International Journal of Pavement Research and Technology,* 4(6), 337-346.
15. Doyle, J.D., Mejias-Santiago, M., Brown, E.R., Howard, I.L. (2011). "Performance of High RAP-WMA Surface Mixtures," *Journal of the Association of Asphalt Paving Technologists,* 80, 419-457.
16. Doyle, J.D., Howard, I.L., Robinson, W.J. (2012). "Prediction of Absorbed, Inert, and Effective Bituminous Quantities in Reclaimed Asphalt Pavement," *Journal of Materials in Civil Engineering,* 24(1), 102-112.
17. Stroble, M.F., Howard, I.L., Shmulsky, R. (2012). "Wood Construction Platform Design Using Instrumentation," *Wood Material Science and Engineering,* 7(1), 13-24.
18. Bell, H.P., Howard, I.L., Freeman, R.B., Brown, E.R. (2012). "Evaluation of Remaining Fatigue Life Model for Hot-Mix Asphalt Airfield Pavements," *International Journal of Pavement Engineering,* 13(4), 281-296.
19. Howard, I.L., Doyle, J.D., Barham, J.M. (2012). "Uniformity, Repeatability, and Permanent Deformation Resistance of Slabs Produced With the Linear Asphalt Compactor," *Advances in Civil Engineering Materials,* 1(1), 1-17.

**20.** Baumgardner, G.L., Hemsley, J.M., Jordan, W., Howard, I.L. (2012). "Laboratory Evaluation of Asphalt Mixtures Containing Dry Added Ground Tire Rubber and a Processing Aid," *Journal of the Association of Asphalt Paving Technologists,* 81, 507-539.

**21.** Carruth, W.D., Howard, I.L. (2013). "Use of Portland Cement and Polymer Fibers to Stabilize Very High Moisture Content Fine-Grained Soils," *Advances in Civil Engineering Materials,* 2(1), 1-24.

**22.** Doyle, J.D., Howard, I.L. (2013). "Thermal Cracking Potential of High RAP-WMA Evaluated With Bending Beam Rheometer Mixture Beam Test," *Journal of Testing and Evaluation,* 41(2), 236-246.

**23.** Braham, A., Howard, I.L., Barham, J. (2013). "Exploration of a Performance Test for Emulsion Treated Asphalt Surfaces," *Journal of Testing and Evaluation,* 41(2), 269-277.

**24.** Howard, I.L., Doyle, J.D., Cox, B.C. (2013). "Merits of Reclaimed Asphalt Pavement-Dominated Warm Mixed Flexible Pavement Base Layers," *Road Materials and Pavement Design,* Special Issue from 88th Association of Asphalt Paving Technologists' Annual Meeting, 14(S2), 106-128.

**25.** Doyle, J.D., Howard, I.L. (2013). "Rutting and Moisture Damage Resistance of High Reclaimed Asphalt Pavement Warm Mixed Asphalt: Loaded Wheel Tracking vs. Conventional Methods," *Road Materials and Pavement Design,* Special Issue from 88th Association of Asphalt Paving Technologists' Annual Meeting, 14(S2), 148-172.

**26.** Cost, V.T., Howard, I.L., Shannon, J. (2013). "Improving Concrete Sustainability and Performance With Use of Portland-Limestone Cement Synergies," *Transportation Research Record: Journal of the Transportation Research Board*, 2342, 26-34.

**27.** Howard, I.L., Baumgardner, G.L., Jordan, W.S., Menapace, A.M., Mogawer, W.S., Hemsley, J.M. (2013). "Haul Time Effects on Unmodified, Foamed, and Additive-Modified Binders Used in Hot-Mix Asphalt," *Transportation Research Record: Journal of the Transportation Research Board*, 2347, 88-95.

**28.** Doyle, J.D., Howard, I.L., Alvarado, A. (2013). "Virgin and Aged Binder Interaction Measured on Mixture Bars via Repeated Creep in the Dynamic Shear Rheometer," *International Journal of Pavement Research and Technology*, 6(6), 721-729.

**29.** Howard, I.L., Doyle, J.D., Hemsley, J.M., Baumgardner, G.L., Cooley, L.A. (2014). "Emergency Paving Using Hot-Mixed Asphalt Incorporating Warm Mix Technology," *International Journal of Pavement Engineering*, 15(3), 202-214.

**30.** Doyle, J.D., Howard, I.L., Gartrell, C.A., Anderton, G.L., Newman, J.K., Berney, E.S. (2014). "Full-Scale Instrumented Testing and Three-Dimensional Modeling of Airfield Matting Systems," *International Journal of Geomechanics*, 14(2), 161-170.

**31.** Howard, I.L., Carruth, W.D. (2014). "Dewatering and Stabilizing Fine-Grained Soils with Very High Moisture Content," *Advances in Civil Engineering Materials*, 3(1), 220-237.

**32.** Howard, I.L., Doyle, J.D. (2014). "Investigating the Consistency of Asphalt Density Measurement Methods Over a Wide Range of Air Voids," *Journal of Testing and Evaluation,* 42(3), 749-760.

**33.** Baumgardner, G.L., Hardee, J.R., Negulescu, I.I., Williams, E.R., Howard, I.L., St John, R.C. (2014). "Quantitative Analysis of Functional Polymer in Recycled Tyre Rubber used in Modified Asphalt Binders," *Road Materials and Pavement Design,* Special Issue from 89th Association of Asphalt Paving Technologists' Annual Meeting, 15(S1), 263-278.

**34.** Howard, I.L. (2014). "Measurement of Asphalt Concrete Temperatures During Transport With the Use of an Instrumented Probe System," *Transportation Research Record: Journal of the Transportation Research Board,* 2408, 78-85.

**35.** Cox, B.C., Howard, I.L. (2014). "Vacuum Sealing-Based Volumetric Density Measurement Approach for Cold In-Place Recycling," *Transportation Research Record: Journal of the Transportation Research Board,* 2444, 11-19.

**36.** Rushing, T.W., Howard, I.L. (2015). "Prediction of Soil Deformation Beneath Temporary Airfield Matting Systems Based on Full-Scale Testing," *Journal of Terramechanics*, Vol. 58, April Issue, 1-9.

**37.** Howard, I.L., Carruth, W.D. (2015). "Chemical Stabilization of VHMS for Disaster Recovery Applications," *Journal of Materials in Civil Engineering*, 27(7), 04014200.

**38.** Braham, A., Howard, I.L., Barham, J, Cox, B.C. (2015). "Characterising Emulsion Effects on Aged Asphalt Concrete Surfaces Using Bending Beam Rheometer Mixture Beams," *International Journal of Pavement Engineering,* 16(7), 620-631.

**39.** James, R.S., Cooley, L.A., Ahlrich, R.C., Prowell, B.D., Howard, I.L. (2015). "Development of Design Gyration Levels for Airfield Asphalt Pavement," *Advances in Civil Engineering Materials,* 4(1), 61-79.

**40.** Cox, B.C., Howard, I.L., Jordan, W.S. (2015). "Recommendations for Seal Treatment Rejuvenation Specifications Based on Bending Beam Rheometer Testing of Mixture Beams," *Transportation Research Record: Journal of the Transportation Research Board,* 2473, 23-32.

**41.** Howard, I.L., Alvarado, A., Floyd, W.C. (2015). "Development of Equipment and Protocols to Test Laboratory or Field Applied Chip Seals on Compacted Asphalt Concrete," *International Journal of Pavement Research and Technology,* 8(5), 295-304.

**42.** Sullivan, W.G., Howard, I.L., Anderson, B.K. (2015). "Development of Equipment for Compacting Soil-Cement into Plastic Molds for Design and Quality Control Purposes," *Transportation Research Record: Journal of the Transportation Research Board,* 2511, 102-111.

**43.** Cox, B.C., Howard, I.L., Williams, K.L., Cooley, L.A. (2015). "Asphalt Concrete Field Compactibility Models Focusing on Aggregate Properties and Moisture," *Transportation Research Record: Journal of the Transportation Research Board,* 2509, 18-28.

**44.** Howard, I.L., Carruth, W.D., Cost, V.T. (2015). "Improving Early Age Strength of Very High Moisture Content Fine Grained Soil via Specialty Ground Portland Cement," *Advances in Civil Engineering Materials,* 4(1), 218-236.

**45.** Williams, K.L., Cox, B.C., Howard, I.L., Cooley, L.A. (2015). "Models of Asphalt Concrete Field Compactibility with Focus on Lift Thickness," *Transportation Research Record: Journal of the Transportation Research Board,* 2504, 135-147.

**46.** Howard, I.L., Shannon, J., Cost, V.T., Stovall, M. (2015). "Davis Wade Stadium Expansion and Renovation: Performance of Concrete Produced with Portland-Limestone Cement, Fly Ash, and Slag Cement, *Journal of Materials in Civil Engineering,* 27(12), 04015044.

**47.** Doyle, J.D., Howard, I.L. (2016). "Characterization of Dense-Graded Asphalt With the Cantabro Test," *Journal of Testing and Evaluation,* 44(1), In Press, doi: 10.1520/JTE20140212.

**48.** Vahedifard, F., Robinson, J.D., Mason, G.L., Howard, I.L., Priddy, J.D. (2016). "Mobility Algorithm Evaluation using a Consolidated Database Developed for Wheeled Vehicles Operating on Dry Sands," *Journal of Terramechanics,* Vol. 63, February Issue, 13-22.

**49.** Vahedifard, F., Howard, I.L., Badran, W.H., Carruth, W.D., Hamlehdari, M., Jordan, B.D. (Print Year Forthcoming). "Strength Indices of High-moisture Soils using Handheld Gages," *Proceedings of the Institution of Civil Engineers-Ground Improvement,* Ahead of Print, Published Online October 30, 2015, doi: 10.1680/jgrim.14.00033.

**Refereed Journal Technical Notes**

**1.** Doyle, J.D., Howard, I.L. (2012). "Factors Affecting the Measurement of Effective Specific Gravity for Reclaimed Asphalt Pavement," *International Journal of Pavement Research and Technology,* 5(2), 128-131.

**2.** Hughes, S.A., Shaw, J.M., Howard, I.L. (2012). "Earthen Levee Shear Stress Estimates for Combined Wave Overtopping and Surge Overflow," *Journal of Waterway, Port, Coastal, and Ocean Engineering,* 138(3), 267-273.

**Peer Reviewed Conference Proceedings**

**1.** Howard, I., Warren, K. (2005). "Improved Data Acquisition For Instrumented Flexible Pavements Reinforced With Geosynthetics," *Proc. of the 2005 International Conference on Computing in Civil Engineering,* July 12-15, Cancun, Mexico.

**2.** Howard, I., Warren, K. (2006). "Finite Element Modeling Approach for Flexible Pavements with Geosynthetics," *Proc. of GeoCongress 2006,* Feb 26-Mar 1, Atlanta, GA.

**3.** Warren, K., Howard, I.L., Brooks, J. (2006). "Use of Digital Photography to Analyze Foil Strain Gages on Geosynthetics," *Proc. of GeoCongress 2006*, Feb 26-Mar 1, Atlanta, GA.

**4.** Warren, K., Brooks, J., Howard, I.L. (2006). "Foil Strain Gage Attachment Techniques for Geotextile and Geogrid," *Proc. of GeoCongress 2006*, Feb 26-Mar 1, Atlanta, GA.

**5.** Howard, I.L., Saucier, C.L., Shmulsky, R. (2008). "Testing of Instrumented Construction Mats and Billets," *Proc. of GeoCongress 2008 (GSP 179)*, Mar 9-12, New Orleans, LA, pp. 340-347.

**6.** Howard, I.L., Warren, K.A. (2008). "Performance Analysis of Heavily Instrumented Flexible Pavement," *Proc. of GeoCongress 2008 (GSP 179)*, Mar 9-12, New Orleans, LA, pp. 348-355.

**7.** Howard, I.L., Warren, K.A. (2008). "Preliminary Analysis Comparing Measured Responses of FWD and Traffic Data," *Proc. of GeoCongress 2008 (GSP 179)*, Mar 9-12, New Orleans, LA, pp. 380-387.

**8.** Warren, K., Christopher, B., Howard, I. (2008). "Techniques Used to Measure Strain on Geosynthetics in Dynamic Applications," *Proc. of GeoCongress 2008 (GSP 179)*, Mar 9-12, New Orleans, LA, pp. 541-548.

**9.** Howard, I.L., Warren, K.A, Lord, C.R. (2008). "Statistical Analysis of Unbound Subgrade Pressure Measurements," *Proc. of GeoCongress 2008 (GSP 179)*, Mar 9-12, New Orleans, LA, pp. 990-997.

**10.** Cooley, L.A., Howard, I.L., Baumgardner, G., and Ross, M. (2008). "Case History on Surface Initiated Cracks on Urban Thoroughfare Pavements," *Proc. of the Sixth RILEM International Conference on Cracking in Pavements*, June 16-18, Chicago, IL, pp. 843-852.

**11.** Carruth, W.D., Howard, I.L. (2011). "Evaluation of Unconfined Compression Area Correction Methods for Cementitious and Fiber Stabilized Fine Grained Soils," *Proc. of Geo-Frontiers 2011 (GSP 211)*, Mar 13-16, Dallas, TX, pp. 2564-2573.

**12.** Howard, I.L., Badran, W.H. (2011). "Comparison of Hand Held Gage and Unconfined Compression Results in Low Strength Cementitious Stabilized Materials," *Proc. of Geo-Frontiers 2011 (GSP 211)*, Mar 13-16, Dallas, TX, pp. 2574-2583.

**13.** Doyle, J.D., Howard, I.L. (2011). "Laboratory Assessment of Skid Resistance for High RAP Content Warm Mixed Asphalt," *Proc. of Geo-Frontiers 2011 (GSP 211)*, Mar 13-16, Dallas, TX, pp. 4515-4524.

**14.** Doyle, J.D., Howard, I.L. (2011). "Evaluation of the Cantabro Durability Test for Dense Graded Asphalt," *Proc. of Geo-Frontiers 2011 (GSP 211)*, Mar 13-16, Dallas, TX, pp. 4563-4572.

**15.** Mejias-Santiago, M., Doyle, J., Howard, I.L., Brown, R. (2011). "Moisture Damage Potential for Warm Mix Asphalt Containing Reclaimed Asphalt Pavement," *Proc. of 2nd International Warm-Mix Conference*, Oct 11-13, St. Louis, MO, Paper WM43, pp 16.

**16.** Sullivan, W.G., Cost, T., Howard, I.L. (2012). "Measurement of Cementitiously Stabilized Soil Slurry Thermal Profiles," *Proc. of GeoCongress 2012 (GSP 225)*, Mar 25-29, Oakland, CA, pp. 958-967.

**17.** Bilberry, A.C., Howard, I.L., Gullett, P.M. (2012). "Finite Element Analysis of Rapidly Deployable Armoring System to Mitigate Levee Erosion During Overtopping," *Proc. of GeoCongress 2012 (GSP 225)*, Mar 25-29, Oakland, CA, pp. 720-729.

**18.** Howard, I.L., Trainer, E, Yee, T.W. (2012). "Alternative Geotextile Tube Fill Materials for Marine Applications," *Proc. of GeoCongress 2012 (GSP 225)*, Mar 25-29, Oakland, CA, pp. 3891-3900.

**19.** Bilberry, A.C., Howard, I.L. (2013). "Full-Scale Shallow Anchor Testing in High Moisture Content Fine-Grained Levee Soils," *Proc. of GeoCongress 2013 (GSP 231)*, Mar 3-7, San Diego, CA, pp. 1726-1735.

**20.** Bilberry, A.C., Pinkard, C.F., Howard, I.L. (2013). "Case Study of Rapid Levee Armoring During 2011 Mississippi River Flood and Potential Future Applications," *Proc. of GeoCongress 2013 (GSP 231)*, Mar 3-7, San Diego, CA, pp. 1922-1931.

**21.** Doyle, J.D., Robinson, W.J., Howard, I.L. (2013). "Benefits and Applications of Utilizing Agency Asphalt Mixture Design Historical Records," *Proc. of the Second Green Streets, Highways, and Development Conference*, Nov 3-6, Austin, TX, pp. 45-54.

**22.** Howard, I.L., Doyle, J.D. (2013). "Rutting and Moisture Damage Wheel Tracking Comparison of Laboratory and Field Compacted Asphalt Concrete," *Proc. of the Second Green Streets, Highways, and Development Conference*, Nov 3-6, Austin, TX, pp. 106-116.

**23.** Howard, I.L., Cost, T. (2014). "Curing Temperature Effects on Soils Stabilized With Portland Cement Having Different Sulfate Contents," *Proc. of GeoCongress 2014 (GSP 234),* Feb 23-26, Atlanta, GA, pp. 2159-2168.
**24.** Carruth, W.D., Howard, I.L., Sullivan, W.G. (2014). "Effects of Brackish, Salt, and Fresh Water on Very High Moisture Content Cement Stabilized Fine Grained Soil," *Proc. of GeoCongress 2014 (GSP 234),* Feb 23-26, Atlanta, GA, pp. 2169-2178.
**25.** Sullivan, W.G., Howard, I.L., Carruth, W.D. (2014). "Effects of Soil Processing on Cementitiously Stabilized Soil Slurries," *Proc. of GeoCongress 2014 (GSP 234),* Feb 23-26, Atlanta, GA, pp. 2179-2188.
**26.** Cox, B.C., Howard, I.L., Battey, R. (2015). "In-Place Recycling Moisture-Density Relationships for High-Traffic Applications," *Proc. of the International Foundations Congress and Equipment Expo 2015 (GSP 256),* Mar 17-21, San Antonio, TX, pp. 349-358.
**27.** Cox, B.C., Howard, I.L. (2015). "Merits of Asphalt Concrete Durability and Performance Tests When Applied to Cold In-Place Recycling," *Proc. of the International Foundations Congress and Equipment Expo 2015 (GSP 256),* Mar 17-21, San Antonio, TX, pp. 369-379.
**28.** Bazne, M.O.A., Vahedifard, F., Howard, I.L. (2015). "Beneficial Reuse of Fine Grained Soils for Port, River, and Shoreline Applications," *Proc. of the International Foundations Congress and Equipment Expo 2015 (GSP 256),* Mar 17-21, San Antonio, TX, pp. 2717-2727.
**29.** Cost, V.T., Wilson, W., Shannon, J., Howard, I.L. (2015). "Unexpected Concrete Performance Benefits of Sustainable Binder Combinations Using Portland-Limestone Cement," *Proc. of the Fifth International Conference on Construction Materials: Performance, Innovations and Structural Implications (ConMat'15),* Aug 19-21, Whistler, Canada, 1430-1441.
**30.** Vahedifard, F., Robinson, J.D., Mason, G.L., Howard, I.L., Priddy, J.D. (2015). "A Data Mining Study for Analyzing Performance of Wheeled Vehicles Operating on Dry Sand," *Proc. of the 13th ISTVS European Conference,* Oct 21-23, Rome, Italy, 460-473.

**Peer Reviewed Engineering Education Conference Proceedings**

**1.** Howard, I.L. (2015). "Engagement of Practitioners to Produce Balanced and Fundamentally Well Grounded Civil Engineers," *Proc.* of *2015 ASEE Annual Conference and Exposition*, June 14-17, Seattle, WA, Paper ID 13450.
**2.** Howard, I.L., Smith, B.T. (2015). "Hands on Development of Communication Skills Within an Undergraduate Construction Materials Laboratory," *Proc.* of *2015 ASEE Annual Conference and Exposition*, June 14-17, Seattle, WA, Paper ID 13826.

**Transportation Research Board (TRB) Annual Meeting Compendium of Papers-Peer Reviewed**

*Citations below are papers whose content is not contained in essentially the same manner in the list of refereed journal manuscripts provided earlier. Twelve additional papers besides those cited below appear in the TRB Annual Meeting Compendium of Papers that are also published with essentially the same content in a journal manuscript listed earlier (e.g. Transportation Research Record).*

**1.** Howard, I.L., Warren, K.A. (2007). "Full-scale Data Acquisition Programming and Implementation for Instrumented Low Volume Flexible Pavement," *Transportation Research Board 86th Annual Meeting*, Washington, D.C., Jan 21-25, Paper 07-1875.
**2.** Howard, I.L., Warren, K.A., Eamon, C., Lord, C.R. (2008). "Variability Analysis of Low Volume Instrumented Thin Flexible Pavements," *Transportation Research Board 87th Annual Meeting*, Washington, D.C., Jan 13-17, Paper 08-1592.
**3.** Howard, I.L., Hemsley, J.M., Baumgardner, G.L., and Jordan, W.S. (2009). "Chip and Scrub Seal Binder Evaluation By Frosted Marble Aggregate Retention Test," *Transportation Research Board 88th Annual Meeting*, Washington, D.C., Jan 11-15, Paper 09-1662.

4. Doyle, J.D., Howard, I.L. (2010). "Compactability and Bitumen Utilization of 100% Warm Mixed RAP," *Transportation Research Board 89th Annual Meeting*, Washington, D.C., Jan 10-14, Paper 10-0279.
5. Howard, I.L., Doyle, J.D., Hemsley, J.M., Baumgardner, G.L., Cooley, L.A. (2011). "Use of Hot Mixed-Warm Compacted Asphalt In Construction," *Transportation Research Board 90th Annual Meeting*, Washington, D.C., Jan 23-27, Paper 11-3522.
6. Braham, A., Howard, I.L., Barham, J. (2013). "Effects of Emulsion Type on Bending Beam Rheometer Field Aged Asphalt Concrete Beams," *Transportation Research Board 92nd Annual Meeting*, Washington, D.C., Jan 13-17, Paper 13-4384.
7. Alvarado, A., Howard, I.L. (2014). "Investigation into the Compatibility of Chip Seal Aggregates and Emulsions," *Transportation Research Board 93rd Annual Meeting*, Washington, D.C., Jan 12-16, Paper 14-1164.
8. Howard, I.L., Doyle, J.D. (2015). "Durability Indices via Cantabro Testing for Unaged, Laboratory Conditioned, and One Year Outdoor Aged Asphalt Concrete," *Transportation Research Board 94th Annual Meeting*, Washington, D.C., Jan 11-15, Paper 15-1366.
9. Cox, B.C., Howard, I.L. (2015). "Laboratory and Field Aging Effects on Emulsion-Treated Bending Beam Rheometer Mixture Beams," *Transportation Research Board 94th Annual Meeting*, Washington, D.C., Jan 11-15, Paper 15-1573.
10. Shannon, J., Howard, I.L., Cost, V.T., Wilson, W.M. (2015). "Benefits of Portland-Limestone Cement for Concrete With Rounded Gravel Aggregates and Higher Fly Ash Replacement Rates," *Transportation Research Board 94th Annual Meeting*, Washington, D.C., Jan 11-15, Paper 15-4049.

**Research Reports**

1. Hall, K.D., Warren, K.A., Howard I.L. (2007). *Low Volume Flexible Pavement Roads Reinforced With Geosynthetics*. Report AHTD TRC-0406, Arkansas Highway and Transportation Dept., pp. 242.
2. Howard, I.L, Stroble, M.F. (2008). *Prototype and Full Scale Instrumented Testing of Wood Construction Platforms.* Report CMRC-08-1, Construction Materials Research Center, pp. 114.
3. Howard, I.L., Baumgardner, G. (2009). *US Highway 84 Chip Seal Field Trials and Laboratory Test Results.* Report FHWA/MS-DOT-RD-09-202-VI, Mississippi Department of Transportation, pp. 22.
4. Howard, I.L., Cooley, L.A., Doyle, J.D. (2009). *Laboratory Testing and Economic Analysis of High RAP Warm Mixed Asphalt.* Report FHWA/MS-DOT-RD-09-200, Mississippi Department of Transportation, pp. 104.
5. Saucier, C.L., Howard, I.L., Tom, J.G. (2009). *Levee Breach Geometries and Algorithms to Simulate Breach Closure.* SERRI Report 70015-001, US Department of Homeland Security Science and Technology Directorate, pp. 154.
6. Howard, I.L., Smith, M., Saucier, C.L., White, T.D. (2009). *2008 Geotextile Tubes Workshop.* SERRI Report 70015-002, US Dept. of Homeland Security Science and Technology Directorate, pp. 367.
7. Howard, I.L. (2009). *Chip and Scrub Seal Field Test Results for Hwy 17 and Hwy 35.* Report FHWA/MS-DOT-RD-09-202-Vol II, Mississippi Department of Transportation, pp. 118.
8. Howard, I.L., Cooley, L.A., Doyle, J.D., Hemsley, J.M., James, R.S., Baumgardner, G.L. (2010). *Rapid Pavement Repair Guidance in Response to Hurricane Damage.* SERRI Report 70015-004, US Dept. of Homeland Security Science and Technology Directorate, pp. 151.
9. Howard, I.L., Carruth, W.D., Rawlins, J.W., Ferguson, R. (2010). *Dewatering Soil for Use as an Emergency Construction Material for Disaster Recovery.* SERRI Report 70015-007, US Department of Homeland Security Science and Technology Directorate, pp. 69.
10. Doyle, J.D., Howard, I.L. (2010). *Laboratory Investigation of High RAP Content Pavement Surface Layers.* Report FHWA/MS-DOT-RD-10-212, Mississippi Department of Transportation, pp. 310.
11. Howard, I.L., Trainer, E. (2011). *Use of Geotextile and Geomembrane Tubes to Construct Temporary Walls in a Flooded Area.* SERRI Report 70015-003, US Department of Homeland Security Science and Technology Directorate, pp. 99.

**12.** Hughes, S.A., Sharp, J.A., Shaw, J.M., Howard, I.L., McAnally, W.H. (2011). *Physical Testing and Hydraulic Simulation of Wave Overtopping of Earthen Levees.* SERRI Report 70015-009, US Dept. of Homeland Security Science and Technology Directorate, pp. 144.

**13.** Williams, K.L., Howard, I.L., Cooley, L.A. (2011). *The Effects of Coarse Aggregate Cleanliness and Moisture Content on Asphalt Concrete Compactability and Moisture Susceptibility.* Report FHWA/MS-DOT-RD-11-208, Mississippi Department of Transportation, pp. 158.

**14.** Howard, I.L. (2012). *Guidance for Using Cementitiously Stabilized Emergency Construction Materials.* SERRI Report 70015-008, US Department of Homeland Security Science and Technology Directorate, pp. 39.

**15.** Mejias-Santiago, M., Doyle, J.D., Howard, I.L., Brown, E.R. (2012). *Evaluation of Warm-Mix Asphalt Technologies for Use on Airfield Pavements.* Report ERDC/GSL TR-12-3, US Army Engineer Research and Development Center, Vicksburg, MS, pp. 85.

**16.** Howard, I.L., Carruth, W.D., Sullivan, W.G., Bilberry, A.C., Cost, T., Badran, W.H., Jordan, B.D. (2012). *Development of an Emergency Construction Material for Disaster Recovery.* SERRI Report 70015-006, US Dept. of Homeland Security Science and Technology Directorate, pp. 300.

**17.** Bilberry, A.C., Howard, I.L., Gullett, P.M. (2012). *Temporary Earthen Levee Protection from Overtopping Using a Rapidly Deployable Armoring System.* SERRI Report 70015-010, US Dept. of Homeland Security Science and Technology Directorate, pp. 88.

**18.** Gullett, P.M., Dickey, M-M., Howard, I.L. (2012). *Numerical Modeling of Bridges Subjected to Storm Surge for Mitigation of Hurricane Damage.* SERRI Report 70015-005, US Dept. of Homeland Security Science and Technology Directorate, pp. 82.

**19.** Howard, I.L., Payne, B.A., Bogue, M., Glusenkamp, S., Baumgardner, G.L., Hemsley, J.M. (2012). *Full Scale Testing of Hot-Mixed Warm-Compacted Asphalt for Emergency Paving.* SERRI Report 70015-011, US Dept. of Homeland Security Science and Technology Directorate, pp. 125.

**20.** Howard, I.L. (2012). *Summary Report for SERRI Project Titled Increasing Community Disaster Resilience Through Targeted Strengthening of Critical Infrastructure.* SERRI Report 70015-000, US Dept. of Homeland Security Science and Technology Directorate, pp. 14.

**21.** Howard, I.L., Sullivan, W.G., Anderson, B.K., Shannon, J., Cost, T. (2013). *Design and Construction Control Guidance for Chemically Stabilized Pavement Base Layers.* Report FHWA/MS-DOT-RD-13-206, Mississippi Department of Transportation, pp. 162.

**22.** Howard, I.L., Jordan, W.S., Barham, J.M., Alvarado, A., Cox, B.C. (2013). *Performance Oriented Guidance for Mississippi Chip Seals-Volume I.* Report FHWA/MS-DOT-RD-13-211-Volume I, Mississippi Department of Transportation, pp. 170.

**23.** Howard, I.L., Alvarado, A., Floyd, W.C. (2013). *Performance Oriented Guidance for Mississippi Chip Seals-Volume II.* Report FHWA/MS-DOT-RD-13-211-Volume II, Mississippi Department of Transportation, pp. 66.

**24.** Howard, I.L., Cox, B.C., Anderson, B.K. (2015). *Laboratory and Field Investigation of US Highway 49 Portland Cement Stabilized Full Depth Reclamation.* Report FHWA/MS-DOT-RD-15-250-Volume 1, Mississippi Department of Transportation, pp. 52.

**25.** Cox, B.C., Howard, I.L. (2015). *Cold In-Place Recycling Characterization Framework and Design Guidance for Single or Multiple Component Binder Systems.* Report FHWA/MS-DOT-RD-15-250-Volume 2, Mississippi Department of Transportation, pp. 184.

**26.** Cox, B.C., Howard, I.L., Ivy, J. (2015). *Evaluation of Approaches to Improve Longitudinal Joints in Mississippi Overlay Projects.* Report FHWA/MS-DOT-RD-15-250-Volume 3, Mississippi Department of Transportation, pp. 159.

**Other Documents**

**1.** Howard, I. (2002). *Development of Lightweight FRP Bridge Deck Designs and Evaluations*. M.S. Thesis, West Virginia University, pp. 167.

2. Warren, K.A.**,** Howard, I.L., Brooks, J.A. (2005). "Preliminary Construction and Instrumentation Plan for Geosynthetic Reinforced Flexible Pavement Test Section," *Proc. of Geo-Frontiers 2005 (GRI-18),* Jan 24-26, Austin, TX, pp. 6.
3. Warren, K.A., Brooks, J.A., Howard, I.L. (2005). "Survivability of Foil Strain Gages Mounted on Geosynthetics Under Full-Scale Construction Loads," *Proc. of Geo-Frontiers 2005 (GRI-18),* Jan 24-26, Austin, TX, pp. 6.
4. Howard, I.L., Warren, K. (2005). "Practical Construction Details Used to Build an Instrumented Flexible Pavement with Geosynthetics," *Proc. of the NAGS 2005/GRI-19 Joint Conference*, Dec 14-16, Las Vegas, NV, GSA Tech ID 532, pp. 8.
5. Howard, I. (2006). "Full-Scale Field Study and Finite Element Modeling of a Flexible Pavement Containing Geosynthetics," *Geotechnical News*, Thesis Abstract, 24(2), 73.
6. Howard, I. (2006). *Full-Scale Field Study and Finite Element Modeling of a Flexible Pavement Containing Geosynthetic*s. Ph.D. Dissertation, University of Arkansas, pp. 369.
7. Doyle, J.D., Howard, I.L. (2011). *Linear Asphalt Compactor Operator's Manual.* Manual Number CMRC M 10-1, Version 1 (Jan 2010), Version 2 (Mar 2011), Construction Materials Research Center, pp. 16.
8. Howard, I.L., Doyle, J.D., White, T.D., Ivy, J., Booth, O. (2010). *PURWheel Laboratory Wheel Tracker Operator's Manual.* Manual Number CMRC M 10-2, Version 1, Construction Materials Research Center, pp. 65.
9. Howard, I.L., Doyle, J.D. (2010). "Economics of Mississippi RAP," *The Profiler-Mississippi Department of Transportation Research Division,* Fall 2010, pp. 4.
10. Howard, I.L., Barham, J.M. (2010). *Analysis of Hwy 25 Reclamite Treatment.* White Paper Number CMRC WP 10-1, Construction Materials Research Center, pp. 3.
11. Baumgardner, G.L., Rowe, G.M., Howard, I.L. (2012). *Rheology Based Specifications for Asphalt Binders used in Roofing.* White Paper Number CMRC WP 12-1, Construction Materials Research Center, pp. 7.
12. Howard, I.L., Shuler, S., Jordan, W., Hemsley, J.M., McGlumphy, K. (2012). "Correlation of Moisture Loss and Strength Gain in Chip Seals," *Pavement Preservation Journal*, 5(4), 40-41.
13. Baumgardner, G.L., Hemsley, J.M., Jordan, W.S., Howard, I.L. (2012). *Asphalt Transport and Placement: Mixture Compactability.* White Paper Number CMRC WP 12-2, Construction Materials Research Center, pp. 4.
14. Cost, V.T., Knight, G., Wilson, W., Shannon, J., Howard, I.L. (2013). "Performance of Typical Concrete Mixtures for Transportation Structures as Influenced by Portland-Limestone Cements from Five Sources," *Proc. of 2013 International Concrete Sustainability Conference,* San Francisco, CA, pp.11.
15. Cox, B.C., Howard, I.L. (2013). *Cold In-Place Recycling and Full-Depth Reclamation Literature Review*. White Paper Number CMRC WP 13-1, Construction Materials Research Center, pp. 24.
16. Howard, I.L. (2013). *Development of an Instrumented Probe System to Measure Asphalt Concrete Temperatures During Transport.* White Paper Number CMRC WP 13-2, Construction Materials Research Center, pp. 6.
17. Cost, V.T., Matschei, T., Shannon, J., Howard, I.L. (2014). "Extending the Use of Fly Ash and Slag Cement in Concrete Through the use of Portland-Limestone Cement," *Proc. of 2014 International Concrete Sustainability Conference,* May 12-15, Boston, MA, pp. 15.

## PRESENTATIONS

### Podium Presentations of Peer Reviewed Papers

1. Improved Data Acquisition For Instrumented Flexible Pavements Reinforced With Geosynthetics (2005). *2005 International Conference on Computing in Civil Engineering.*
2. How Well Does The Falling Weight Deflectometer Simulate Traffic Loads for Thin Low Volume Pavements? (2008). *Transportation Research Board 87$^{th}$ Annual Meeting.*

3. Testing of Instrumented Construction Mats and Billets (2008). *GeoCongress 2008.*
4. Performance Analysis of Heavily Instrumented Flexible Pavement (2008). *GeoCongress 2008.*
5. Preliminary Analysis Comparing Measured Responses of FWD and Traffic Data (2008). *GeoCongress 2008.*
6. Statistical Analysis of Unbound Subgrade Pressure Measurements (2008). *GeoCongress 2008.*
7. Bottom-Up Fatigue Cracking of Low-Volume Flexible Pavement Analysis from Instrumented Testing (2009). *Transportation Research Board 88th Annual Meeting.*
8. Comparison of Hand Held Gage and Unconfined Compression Results in Low Strength Cementitious Stabilized Materials (2011). *Geo-Frontiers 2011.*
9. Preservation of Low-Volume Flexible Pavement Structural Capacity by Use of Seal Treatments (2011). *10th International Conference on Low-Volume Roads.*
10. Haul Time Effects on Unmodified, Foamed, and Additive Modified Binders used in Hot Mixed Asphalt (2013). *Transportation Research Board 92nd Annual Meeting.*
11. Full-Scale Shallow Anchor Testing in High Moisture Content Fine-Grained Levee Soils (2013). *GeoCongress 2013*.
12. Case Study of Rapid Levee Armoring During 2011 Mississippi River Flood and Potential Future Applications (2013). *GeoCongress 2013.*
13. Merits of RAP Dominated Warm Mixed Flexible Pavement Base Layers (2013). Association of Asphalt Paving Technologists 88th Annual Meeting.
14. Measurement of Asphalt Concrete Temperatures During Transport Using an Instrumented Probe System (2014). *Transportation Research Board 93rd Annual Meeting.*
15. Asphalt Concrete Field Compactibility Models Focusing on Aggregate Properties and Moisture (2015). *Transportation Research Board 94th Annual Meeting.*
16. Beneficial Reuse of Fine Grained Soils for Port, River, and Shoreline Applications (2015). *International Foundations Congress and Equipment Expo 2015.*
17. Engagement of Practitioners to Produce Balanced and Fundamentally Well Grounded Civil Engineers (2015). *2015 ASEE Annual Conference and Exposition.*
18. Hands on Development of Communication Skills Within an Undergraduate Construction Materials Laboratory (2015). *2015 ASEE Annual Conference and Exposition.*
19. Recommendations for Seal Treatment Rejuvenation Specifications Based on Bending Beam Rheometer Testing of Mixture Beams (2015). *11th International Conference on Low-Volume Roads.*

**Poster Presentations of Peer Reviewed Papers**

1. Finite Element Modeling Approach for Flexible Pavements with Geosynthetics (2006). *GeoCongress 2006.*
2. Use of Digital Photography to Analyze Foil Strain Gages on Geosynthetics (2006). *GeoCongress 2006.* Co-presenter, Warren, K.A.
3. Full-scale Data Acquisition Programming and Implementation for Instrumented Low Volume Flexible Pavement (2007). *Transportation Research Board 86th Annual Meeting.*
4. Variability Analysis of Low Volume Instrumented Thin Flexible Pavements (2008). *Transportation Research Board 87th Annual Meeting.*
5. Chip and Scrub Seal Binder Evaluation By Frosted Marble Aggregate Retention Test (2009). *Transportation Research Board 88th Annual Meeting.* Co-presenters, Baumgardner, G.L., Hemsley, J.M., Jordan, W.S.
6. Applicability of Modified Vialit Adhesion Test for Seal Treatment Specifications (2010). *Transportation Research Board 89th Annual Meeting.* Co-presenter, Jordan, W.S.
7. Use of Hot Mixed-Warm Compacted Asphalt In Construction (2011). *Transportation Research Board 90th Annual Meeting.* Co-presenters, Baumgardner, G.L., Doyle, J.D., Hemsley, J.M.
8. Correlation of Moisture Loss and Strength Gain in Chip Seals (2011). *Transportation Research Board 90th Annual Meeting.* Co-presenters, Hemsley, J.M., Jordan, W.S., McGlumphy, K, Shuler, S.

**9.** Comparison of Available Density Measurement Methods Applicable for Design and Construction (2012). *Transportation Research Board 91st Annual Meeting.* Co-presenter, Doyle, J.D.
**10.** Alternative Geotextile Tube Fill Materials for Marine Applications (2012). *GeoCongress 2012.* Co-presenter, Trainer, E.
**11.** Improving Concrete Sustainability and Performance using Portland-Limestone Cement (PLC) Synergies (2013). *Transportation Research Board 92nd Annual Meeting.* Co-presenters, Cost, V.T., Shannon, J.
**12.** Investigation into the Compatibility of Chip Seal Aggregates and Emulsions (2014). *Transportation Research Board 93rd Annual Meeting.*
**13.** Characterizing Dense-Graded Asphalt Concrete with the Cantabro Test (2014). *Transportation Research Board 93rd Annual Meeting.* Co-presenter, Doyle, J.D.
**14.** Curing Temperature Effects on Soils Stabilized With Portland Cement Having Different Sulfate Contents (2014). *GeoCongress 2014*.
**15.** Effects of Brackish, Salt, and Fresh Water on Very High Moisture Content Cement Stabilized Fine Grained Soil (2014). *GeoCongress 2014*. Co-presenter, Carruth, W.D.
**16.** Effects of Soil Processing on Cementitiously Stabilized Soil Slurries (2014). *GeoCongress 2014.* Co-presenter, Carruth, W.D.
**17.** Durability Indices via Cantabro Testing for Unaged, Laboratory Conditioned, and One Year Outdoor Aged Asphalt Concrete (2015). *Transportation Research Board 94th Annual Meeting.*
**18.** Laboratory and Field Aging Effects on Emulsion-Treated Bending Beam Rheometer Mixture Beams (2015). *Transportation Research Board 94th Annual Meeting.* Co-presenter, Cox, B.C.
**19.** Benefits of Portland-Limestone Cement for Concrete With Rounded Gravel Aggregates and Higher Fly Ash Replacement Rates (2015). *Transportation Research Board 94th Annual Meeting.* Co-presenter, Cost, V.T.
**20.** Merits of Asphalt Concrete Durability and Performance Tests When Applied to Cold In-Place Recycling (2015). *International Foundations Congress and Equipment Expo 2015*. Co-presenter, Cox, B.C.

**Presentations at Events With Registered Attendees - No Associated Paper**

**1.** *Composite Bridges of West Virginia.* 77th Annual Meeting of the West Virginia Academy of Science, April 20, 2002, Morgantown, WV, Invited Podium Presentation.
**2.** *Full-Scale Field Study and Finite Element Modeling of a Flexible Pavement Containing Geosynthetics.* USUCGER-Doctoral Student Geotechnical Research in the Information Age Workshop, GeoCongress 2006, Feb 26, 2006, Atlanta, GA, Selected Podium Presentation.
**3.** *Increased RAP Usage: Key Parameters for Mississippi.* Mississippi Quality Asphalt Conference, Feb 4-5, 2010, Ridgeland, MS, Co-presenter, Doyle, J.D., Invited Podium Presentation.
**4.** *Warm Compacted HMA.* 2nd Annual Mississippi Quality Asphalt Conference, April 4-5, 2011, Ridgeland, MS., Invited Podium Presentation
**5.** *State of Practice in Soil Cement.* Mississippi Transportation Institute Conference 2011, Nov 1-3, 2011, Biloxi, MS, Selected Podium Presentation.
**6.** *Warm Mix Asphalt Research at MSU.* 3rd Annual Mississippi Quality Asphalt Conference, Feb 7-8, 2012, Jackson, MS, Invited Podium Presentation.
**7.** *Improving Response Effectiveness After Natural Disasters Using Warm Mix Asphalt Technology.* 4th Annual Transportation Workshop, Transportation & Economic Symposium: Transportation for Mississippi's Sustainable Economic Growth, Feb 21-22, 2012, Starkville, MS, Abstract and Selected Poster Presentation.
**8.** *Use of Warm Mix Technology to Facilitate Long Haul Distances and Emergency Paving.* Mississippi Engineering Society 2012 Winter Meeting, March 11-13, 2012, Jackson, MS, Abstract and Invited Podium Presentation.

**9.** *Improving Soil Cement Quality Using Thermal Measurements Testing.* 2012 ACI Mid-South Chapter Symposium, April 19, 2012, Ridgeland, MS, Co-presenter, Sullivan, W.G., Invited Podium Presentation.
**10.** *Concrete Research at Mississippi State University.* Alabama-Mississippi 2012 Summer Convention, May 31-June 3, 2012 Destin, FL, Co-presenter, Shannon, J., Invited Podium Presentation.
**11.** *WMA Research-SERRI.* Southeastern Asphalt User/Producer Group (SEAUPG) Annual Meeting & Exhibits, Nov 12-15, 2012, Hilton Head Island, SC, Invited Podium Presentation.
**12.** *Use of Thermal Measurements in Soil Stabilization Quality Control.* Workshop on Thermal Methods for Prediction of Properties of Cementitious Systems-Sponsored by ASTM C094800, Dec 2, 2012, Atlanta, GA, Abstract and Selected Podium Presentation.
**13.** *Portland-Limestone Cement Research for Davis-Wade Stadium Expansion.* 2013 ACI Mid-South Chapter Symposium, April 11, 2013, Ridgeland, MS, Co-presenter, Shannon, J., Invited Podium Presentation.
**14.** *Current & Future Research.* 5th Annual Mississippi Quality Asphalt Conference, Jan 16-17, 2014, Jackson, MS, Invited Podium Presentation.
**15.** *Characterizing Durability and Toughness Effects of Field Aging on Asphalt Concrete.* 40th DAWG Forum on Pavement Performance Data Analysis: in Conjunction with Transportation Research Board 93rd Annual Meeting, Jan 11, 2014, Washington, D.C., Abstract and Selected Podium Presentation.
**16.** *MSU CMRC Update with a Recap of the Davis-Wade Stadium Expansion Project.* 2014 ACI Mid-South Chapter Symposium, May 20, 2014, Ridgeland, MS, Invited Podium Presentation.
**17.** *Beneficial Reuse of Very High Moisture Soils by way of Geotextile Tubes and Low Cementitious Dosage Rates.* 2014 ASCE Mississippi Section Meeting, Sept 3-5, 2014, Vicksburg, MS, Abstract and Selected Podium Presentation.
**18.** *Sustainability-Driven Developments in Concrete Materials and Related MSU Research*. 2014 ASCE Mississippi Section Meeting, Sept 3-5, 2014, Vicksburg, MS, Co-presenter, Cost, T., Abstract and Selected Podium Presentation.
**19.** *Cantabro Testing for Mixture Durability*. Southeastern Asphalt User/Producer Group (SEAUPG) Annual Meeting & Exhibits, Nov 17-20, 2014, Nashville, TN, Invited Podium Presentation.

**Presentations Given Internally or at Events Without Registered Attendees - No Associated Paper**

**1.** *SERRI Project Update.* Presented During Senator Thad Cochran Staff Visit, February 18, 2008, Starkville, MS.
**2.** *SERRI Project Update.* Presented During Senator Roger Wicker Staff Visit, October 10, 2008, Starkville, MS.
**3.** *Asphalt and Concrete Design for the 21st Century*. Presented to MSU Administration and Federal Relations Personnel, December 10, 2012, Starkville, MS.
**4.** *Use of the Cantabro Test on Dense Graded Asphalt as a QC Tool.* Presented During Meeting of TRB Committee AFK 10-General Issues in Asphalt Technology, April 23-24, 2013, Irvine, CA.
**5.** *Coupling Sustainable Concrete and Resilient Forests.* Presented to Forest Service Northern Research Station and Forest Products Laboratory, June 2, 2015, Starkville, MS.

## EXTERNAL FUNDING

*--Funding responsibility & percent responsibility values reported are those within the contracted entity.*

| Category | Principal Investigator | Cooperator | Develop-ment | Research Center | Total |
|---|---|---|---|---|---|
| All Funding-No Cost Share | $3,940,508 | $76,986 | $250,981 | $1,884,439[a] | $6,152,914 |
| Funding Responsibility | $3,616,045 | $23,096 | $250,981 | ---[b] | $3,890,122 |
| Funding Subcontracted | $746,969 | $0 | $0 | --- | $746,969 |
| Cost Share | $0 | $77,661 | $0 | --- | $77,661 |

a: Value shown is total funding for tasks within research center programs where author has worked. A small percentage of this total funding is directly related to the author's work as several others were also involved.

b: Funding responsibility values were generally not defined, and are not reflected in Total-Funding Responsibility.

**Principal Investigator - Contracted Entity Was MSU CEE - Project Complete**

1. *Mississippi DOT (2007-2008).* "Utilization of Reclaimed Asphalt Pavement (RAP) in Construction-Phase I: Detailed Literature Review, Feasibility Study, & Preliminary Economic Analysis," State Study 200, 100% Responsibility, Funding Type-State.
2. *MODUMAT (2007-2008).* "Instrumentation and Analysis of Wood Matting Systems," 90% Responsibility, Funding Type-Private.
3. *Department of Homeland Security-Oak Ridge National Laboratory-Southeast Region Research Initiative (2007-2012).* "Increasing Community Disaster Resilience Through Targeted Strengthening of Critical Infrastructure," SERRI Project 70015, 85% Responsibility, Funding Type-Federal.
4. *Mississippi DOT (2008-2009).* "Laboratory and Field Study of Chip and Scrub Seals for Development of Asphalt Pavement Maintenance Toolbox," State Study 202, 100% Responsibility, Funding Type-State.
5. *Mississippi DOT (2008-2011).* "The Effects of Coarse Aggregate Cleanliness and Moisture Content on Stripping Susceptibility and on the Long Term Performance of HMA Mixes," State Study 208, 100% Responsibility, Funding Type-State.
6. *Mississippi DOT (2009-2010).* "Utilization of RAP in Construction-Phase II: High RAP Surface Coarse," State Study 212, 100% Responsibility, Funding Type-State.
7. *Mississippi DOT (2008-2013).* "Performance Specification for Chemically Stabilized Pavement Layers," State Study 206, 100% Responsibility, Funding Type-State.
8. *Mississippi DOT (2009-2013).* "Laboratory Testing and Evaluation of Near Surface Properties of Flexible Pavements Due to Bituminous Surface Treatments," State Study 211, 100% Responsibility, Funding Type-State.
9. *Mississippi DOT (2013-2014).* "Asphalt Mixture Field Aging Study Preliminary Testing," Project No. 106526 101000, 100% Responsibility, Funding Type-State.
10. *Janesville Acoustics (2015).* "Fee for Service Agreement-Thermal Conditioning of Fibers," 100% Responsibility, Funding Type-Private.
11. *Mississippi DOT (2012-2015).* "Full Depth Reclamation for High Traffic Applications," State Study 250, 100% Responsibility, Funding Type-State.
12. *Holcim (US), Inc. (2014-2015).* "Concrete Sustainability and Performance Through Synergies of Portland-Limestone Cement and Supplementary Cementitious Materials," 100% Responsibility, Funding Type-Private.

**Principal Investigator - Contracted Entity Is MSU CEE-Project is Ongoing**

1. *Holcim (US), Inc. (2014-2016).* "Concrete Sustainability Tools Focusing on Cementitious Systems Containing Portland-Limestone Cement," 100% Responsibility, Funding Type-Private.
2. *Paragon Technical Services, Inc. (2014-2017).* "Bituminous Material and Pavement Preservation Research Collaboration," 100% Responsibility, Funding Type-Private.

3. *Mississippi DOT (2014-2017).* "Field Aging Effects on Asphalt Mixed at Different Temperatures and Hauled Different Distances," State Study 266, 100% Responsibility, Funding Type-State.
4. *U.S. Army Engineer Research and Development Center-ERDC. (2015-2016).* "MOS Requirements for Modern Aircraft," 100% Responsibility, Funding Type-Federal.
5. *Mississippi Concrete Industries Association (MCIA). (2016-2018).* "Improvement of Paste-Aggregate Bond in Concrete Made with Mississippi Gravel," 100% Responsibility, Funding Type-Private.

**Principal Investigator for Subcontractors Funded at $7,500 or More**

1. Burns Cooley Dennis, Inc. – Materials and Geotechnical Engineering Consultants
2. Innovative Broadcast Services Corporation
3. U.S. Army Engineer Research and Development Center (ERDC)
4. Paragon Technical Services, Inc.
5. Barter and Associates, Inc. – Structural Engineers
6. University of Southern Mississippi

**Cooperator Role - Contracted Entity Is MSU CEE - Project is Complete**

1. *National Center for Intermodal Transportation for Economic Competitiveness-NCITEC (2013-2015).* "Sustainably Enhancing Intermodal Freight Operation of Ports Using Geotextile Tubes," 30% Responsibility, Funding Type-US Dept. of Transportation UTC, PI-F. Vahedifard.

**Development**

1. *Ergon Asphalt & Emulsions Distinguished Doctoral Fellowship in Construction Materials (2012-2015).*
2. *Cement and Concrete Industries Excellence Fund (2012-2014).* Donors: Holcim (US) Inc., CEMEX, Argos USA, and One Individual.
3. *Infinite Impact When We All Work Together (2013).* Remarks Given at Kickoff to Public Phase of Six-Hundred Million Dollar Comprehensive Capital Campaign Titled "Infinite Impact: The Mississippi State University Campaign", October 11, Starkville, MS.
4. *Construction Materials Research Center Teaching Assistant Award (2014-2015).* Donors: Mississippi Asphalt Pavement Association, Mississippi Concrete Industries Association, Mississippi Road Builders Association.
5. *Ergon Asphalt & Emulsions Student Support Initiative in Construction Materials (2015-2019*).

**Cooperator Role - Contracted Entity Was an MSU Research Center – Project Complete**

1. *U.S. Army Corps of Engineers, Engineer Research and Development Center-ERDC (2013-2014).* "Computational Research for Engineering and Science-Ground Vehicles (CRES-GV)," Multi-Task Program with Principal Investigator Roger L. King (Center for Advanced Vehicular Systems, CAVS).
   a. Task 1-Highly Scalable Fluid-Solid Interaction Model for Terramechanics, Lead Investigator: Bohumir Jelinek, % Responsibility Not Defined-Role Was Relatively Small.
2. *Consortium for Energy, Environment & Demilitarization (CEED) with the Department of Defense (DoD) as the Prime Sponsor (2013-2014).* "Military Engineering and Engineered Resilient Systems Software," Multi-Task Program with Principal Investigator Roger L. King (CAVS).
   a. Overall Program Activities (i.e. Parent Account)-Military Engineering and Engineered Resilient Systems Software, 10% Responsible, Lead Investigator: Roger L. King.
   b. Task 12-Mobility Modeling for Soils, Lead Investigator: Farshid Vahedifard, % Responsibility Not Defined-Role Was Secondary.
   c. Task 19-Multiscale Cementitious Materials, Lead Investigator: Mark Horstemeyer, % Responsibility Not Defined-Role Was Relatively Small.

**Cooperator Role - Contracted Entity Was an MSU Research Center – Project is Ongoing**

1. *U.S. Army Corps of Engineers, Engineer Research and Development Center-ERDC (2015-2016).* "Integrated Virtual Prototyping for Product Engineering and Design (IVPPED)," Multi-Task Program with Principal Investigator Roger L. King (CAVS).
   a. Task 12-Mobility Modeling for Soils, Lead Investigator: Farshid Vahedifard, % Responsibility Not Defined-Role Was Secondary.
   b. Task 19-Multiscale Cementitious Materials, Lead Investigator: Mark Horstemeyer, % Responsibility Not Defined-Role Was Relatively Small.

## HONORS, AWARDS, AND COMPETITIVE SELECTION ACTIVITIES

1. Walton Distinguished Doctoral Fellowship, University of Arkansas, 2003-2006.
2. Selected as Attendee for *Professor Training Course in Asphalt Technology,* National Center for Asphalt Technology, June 19-28, Auburn University, 2007.
3. Selected as Attendee for *ExCEEd Teaching Workshop,* American Society of Civil Engineers (ASCE), July 25-30, West Point, NY, 2007.
4. MSU StatePride Faculty Award, MSU, 2010 and 2011.
5. BCoE Hearin Faculty Excellence Award, MSU, 2010.
6. Young Engineer of the Year, Mississippi Section of ASCE, 2010.
7. Best Poster Award-Asphalt Materials Section, TRB 90th Annual Meeting, Paper 11-3522, Session 551, Poster Title: Use of Hot-Mixed Warm-Compacted Asphalt in Construction, 2011.
8. W.J. Emmons Annual Award Runner-Up, Paper Title: Laboratory Evaluation of Asphalt Mixtures Containing Dry Added Ground Tire Rubber and a Processing Aid, Association of Asphalt Paving Technologists (AAPT), 2012.
9. Selected as Participant for *2012-2013 Faculty Leadership Program-President Buz M. Walker Class,* Sponsored by MSU Office of Research & Economic Development, Aug 2012 to May 2013.
10. Bagley College of Engineering Academy of Distinguished Teachers, 2013 Inductee, Student Nominated and Selected by a Panel Including Administration, Faculty, and Students.
11. 2015 Triad Award Runner-Up, Project Title: Davis Wade Stadium Expansion and Renovation, Award Sponsored by *Concrete Construction, The Concrete Producer*, and *Public Works* Magazines. Role: Participated in Technical Aspects of Portland-Limestone Cement's Project Incorporation, and Served on a Six Member Panel at World of Concrete Event on Feb 05, 2015 in Las Vegas, NV Titled: *Building Successful Public Projects Through Innovation, Sustainability, and Leadership Luncheon & Forum.*
12. Slag Cement Association 2014 Project of the Year-Sustainability. Project Title: Davis Wade Stadium Expansion and Renovation. Role: Participated in Technical Aspects of Slag and Portland-Limestone Cement's Project Incorporation, and Represented Project at ACI Convention and Exposition on Apr 15, 2015 in Kansas City, MO. Awards featured in *Concrete International* Article in August of 2015.

## AFFILIATIONS

*Previous*

1. Industry Studies Assn., Alfred P. Sloan Foundation Industry Studies Program, *Member*, 2007-2011.

*Current*

1. American Society of Civil Engineers (ASCE), *Student Member* 2000-2006, *Member* 2006-present.
2. Order of the Engineer, University of Arkansas-Link 206, 2003-present.
3. American Society of Engineering Education (ASEE), *Member* 2006-present.
4. Geo-Institute (G-I) of the American Society of Civil Engineers, *Member* 2010-present.
5. Association of Asphalt Paving Technologists (AAPT), *Member* 2010-present.
6. Transportation Research Board (TRB), *Individual Affiliate* 2010-present.
7. Honor Society of Phi Kappa Phi, Elected by Mississippi State Univ. Chapter, *Member* 2015-present.

## TEACHING

### Review Courses Taught

**1.** PE Exam Materials Review (1 Day) for Mississippi DOT Employees. Taught 4 times 2006 to 2008.
**2.** FE Exam Soils or Materials Review (2 hr) for CEE Students. Taught 14 times 2006 to 2012.

### K-12 Outreach

**1.** *Mississippi Summer Transportation Institute.* Two week summer camp sponsored by Mississippi DOT. Audience: Rising high school sophomores and juniors mostly, other grades occasionally. Organized and/or led construction materials discussion and/or laboratory exercises lasting the equivalent of one to two days per year. A total of 135 students have participated in materials activities between 2007 and 2014. Undergraduate and/or graduate students have been involved some years.
**2.** *QUEST.* Two to three week summer research program sponsored by James Worth Bagley College of Engineering (BCoE)-MSU. Audience: Advanced high school students. Mentored 6 total students between 2007 and 2013 for half days during most of the program duration.

### University Courses Taught and/or Developed

| *Class Title-Number-University* | *Credit* | *Taught* | *Evaluations*[1] |
|---|---|---|---|
| Statics-ENGR 2403-ASU | 3 hr | 2 Times in Sp 03 | 8.9 to 9.1 of 10 (9.0) |
| Fluid Mechanics-ENGR 3473-ASU | 3 hr | 1 Time in Sp 03 | 8.6 of 10 (8.6) |
| Engineering Economics-ENGR 3433-ASU | 3 hr | 1 Time in Sp 03 | 8.8 of 10 (8.8) |
| Construction Materials Lecture-CE 3313-MSU | 3 hr | 9 Times Fa 06 to Sp 15 | 4.0 to 4.7 of 5 (4.4) |
| Construction Materials Laboratory-CE 3313-MSU | 0 hr | 7 Times Fa 06 to Sp 13 | 3.8 to 4.1 of 5 (3.9) |
| Construction Materials Laboratory-CE 3311-MSU[2] | 1 hr | 2 Times Sp 14 to Sp 15 | 4.2 to 4.5 of 5 (4.4) |
| Pavement Materials & Design-CE 4103/6103-MSU | 3 hr | 8 Times Fa 07 to Fa 15 | 4.2 to 4.7 of 5 (4.5) |
| Material Characterization-CE 8303-MSU[3] | 3 hr | 3 Times Fa 10 to Sp 15 | 4.2 to 4.6 of 5 (4.4) |
| Pavement Rehabilitation-CE 8333-MSU[4] | 3 hr | 1 Time Sp 14 | 4.8 of 5 (4.8) |
| Advanced Pavement Materials-CE 8343-MSU[5] | 3 hr | 1 Time in Fa 14 | 4.7 of 5 (4.7) |
| ST: Site Improvement-CE 4990/6990-MSU | 3 hr | 1 Time in Fa 07 | 4.9 of 5 (4.9) |
| ST: Pavement Performance-CE 4990-MSU | 3 hr | 1 Time in Sp 08 | 4.9 of 5 (4.9) |
| ST: Warm Mixed Asphalt-CE 8990-MSU | 3 hr | 1 Time in Sp 12 | 5.0 of 5 (5.0) |
| ST: Asphalt Durability-CE 4990/6990-MSU | 3 hr | 1 Time in Su 13 | 5.0 of 5 (5.0) |
| ST: Concrete Applications-CE 4990-MSU | 3 hr | 1 Time in Sp 07 | Not Performed |
| Directed Individual Study-CE 4000-MSU | 3 hr | 1 Time in Su 15 | Not Performed |
| Directed Individual Study-CE 7000-MSU | 3 hr | 18 Times Su 08 to Su 15 | Not Performed |
| Thesis Hours-CE 8000-MSU | 1 hr | Multiple Times | Not Performed |
| Dissertation Hours-CE 9000-MSU | 1 hr | Multiple Times | Not Performed |

Total credit hours taught = 3,826 (3,086 undergraduate credits, 306 graduate credits, and 434 thesis/dissertation).
ST = Special Topic in Civil Engineering.
1: Range of composite student evaluation scores are given, and average of all composite scores is in parenthesis.
2: Teaching assistants were listed as a co-instructor in some semesters.
3: Sole developer of CE 8303, approved in 2008.
4: Co-developer of CE 8333 with Dr. Gary L. Anderton, approved in 2009.
5: Co-developer of CE 8343 with Dr. E. Ray Brown, approved in 2010.

## SERVICE

### University Service-MSU

*Previous*
**1.** *CEE Advisory Board Peer Committee.* Member, 2008-2009.
**2.** *Bagley Research Advisory Group.* Member, 2008-2009.
**3.** *CEE Faculty Search Committee.* Member, Served 3 Times, 2009, 2010, and 2012.

**4.** *James Worth Bagley College of Engineering Dean Search Committee.* Member, 2013.
**5.** *Internal Review Committee for Dave C. Swalm School of Chemical Eng.* Chairman, 2014-2015.

*Current*
**1.** *CEE Scholarship Committee.* Member, 2007-present.
**2.** *CEE Laboratory Committee.* Chairman, 2008-present.
   a. Developed department wide laboratory policy in 2008.
   b. Initiated yearly department wide external calibration program in 2009.
**3.** *Materials Working Group,* CEE Program Advisor, BCoE, 2012-present.
**4.** *Design Review Subcommittee of the Master Plan Development and Advisory Committee,* 2015-present.
**5.** *University Assigned Mentor to Assistant Professor Dr. Farshid Vahedifard,* 2015-present.

**Service on National Committees or Panels**
**1.** Transportation Research Board of the National Academies, TRB, *Committee on Flexible Pavement Construction and Rehabilitation-AFH60,* Member, Appointed 4/15/2008 to 4/14/2017.
**2.** Transportation Research Board of the National Academies, TRB, *Committee on General Issues in Asphalt Technology-AFK10,* 1st AFK10 Young Member, Appointed 6/2/2011 to 4/14/2016.
**3.** Geo-Institute (G-I) of the American Society of Civil Engineers, *G-I Pavements Committee,* Member as of September 2012.
**4.** National Cooperative Highway Research Program, NCHRP, *Advisory Panel SP20-07(386) for Update of the 2008 Guide Specifications for Highway Construction,* Member, Appointed 09/02/2015 to present.

**Conference and Professional Meeting Service**
**1.** *Moisture Damage to Hot-Mix Asphalt Mixtures.* Transportation Research Board 91st Annual Meeting, Session 158, Jan 22, 2012, Washington, D.C., Role-Presiding Officer of Half Day Workshop and Organizer of Subsequent TRB E-Circular 198 Published in June of 2015.
**2.** *Conference Local Committee.* Transportation & Economic Symposium: Transportation for Mississippi's Sustainable Economic Growth, Feb 21-22, 2012, Starkville, MS, Role-Member.
**3.** *Construction Materials Research Center Exhibit.* 98th AASHTO Subcommittee on Materials Meeting, Booth 6, Aug 5 to 8, 2012, Biloxi, MS, Role-Co-exhibitor with T.D. White.
**4.** *Asphalt Mixtures for Orthotropic Steel Decks.* Transportation Research Board 92nd Annual Meeting, Session 651, Jan 15, 2013, Washington, D.C., Role-Presiding Officer of Poster Session.
**5.** *Organizing Committee and Presenter*. Workshop on Portland-Limestone Cement (PLC), Construction Materials Research Center Workshop CMRC WS 13-1, Jan 23, 2013, Starkville, MS, Role-Co-Organizer with T. Cost and H.L. James, and presented afternoon session titled *PLC Research, Davis-Wade Stadium Expansion*.
**6.** *Cold Planing, Compaction, and Pay Adjustments in Hot-Mix Asphalt Pavements.* Transportation Research Board 93rd Annual Meeting, Session 678, Jan 14, 2014, Washington, D.C., Role-Presiding Officer of Poster Session.
**7.** *Materials Division Technical Session I.* 2015 ASEE Annual Conference and Exposition, Session T536, June 16, 2015, Seattle, WA, Role-Co-Moderator of Lectern Session with S. Gupta.

**Review of Technical Papers (Papers Reviewed 77)**
**1.** Conferences

| *Source* | *Papers Reviewed* | *Years Reviewed* |
|---|---|---|
| *Geo Americas 2008* | 1 | 2007 |
| *ASCE GeoCongress 2012* | 2 | 2011 |
| *ASCE GeoCongress 2013* | 2 | 2012 |
| *2013 Airfield Highway and Pavement Conference* | 2 | 2013 |
| *12th ISAP Conference on Asphalt Pavements* | 1 | 2014 |
| *IFCEE 2015* | 1 | 2014 |

| | | |
|---|---|---|
| *ASCE Geo-Chicago 2016* | 2 | 2015 |

**2.** Journals

| *Source* | *Papers Reviewed* | *Years Reviewed* |
|---|---|---|
| *Int. J. of Pavement Engineering* | 4 | 2008 to 2015 |
| *Int. J. of Pavement Research and Technology* | 2 | 2010 to 2011 |
| *J. of Materials in Civil Engineering* | 5 | 2010 to 2015 |
| *J. of Transportation Engineering* | 2 | 2012 to 2013 |
| *Geotechnical Testing Journal* | 1 | 2013 |
| *Construction and Building Materials* | 2 | 2013 to 2014 |

**3.** Transportation Research Board (TRB) of the National Academics Annual Meeting (AM)

| *Source* | *Papers Reviewed* | *Years Reviewed* |
|---|---|---|
| 88th AM: AFD60 | 1 | 2008 |
| 89th AM: AFD60 | 1 | 2009 |
| 90th AM: AFK30, AFD60, AFS80 | 7 | 2010 |
| 91st AM: AFK10, AFK30, AFS80, AFH60 | 8 | 2011 |
| 92nd AM: AFK10, AFK20, AFK30, AFH60, AFS807 | 7 | 2012 |
| 93rd AM: AFK10, AFK20, AFK30, AFH60, AFS80 | 8 | 2013 |
| 94th AM: AFK10, AFK20, AFH60 | 6 | 2014 |
| 95th AM: AFK10, AFK30, AFH60 | 5 | 2015 |

**4.** Association of Asphalt Paving Technologists (AAPT) Annual Meeting (AM)

| *Source* | *Papers Reviewed* | *Years Reviewed* |
|---|---|---|
| 87th AM | 2 | 2011 |
| 88th AM | 1 | 2012 |
| 89th AM | 1 | 2013 |
| 90th AM | 1 | 2014 |
| 91st AM | 2 | 2015 |

**Student Service (Major Professor or Supervisor in all Cases-Students Enrolled at Time of Event)**

**1.** *ASCE Student Chapter*, Faculty Advisor, MSU, Jan 2008 to May 2011.
   a. *The New Hire Experience-What to Expect the First Five Years.* Panel discussion organized in coordination with Career Center, 72 students attended, April 2010.
   b. *Joint Meeting with ASCE North Mississippi Branch.* Panel discussion focusing on infrastructure of north Mississippi, over 80 students attended, September 2010.

**2.** Undergraduate Research Assistants (URA's) Funded/Supervised (69), with a total of around 46,000 hours worked. URA's working: < 250 hr (18), 250 to 500 hr (23), 501 to 1,000 hr (17), > 1,000 hr (11).

**3.** Undergraduate Students Advised on Curriculum and Other Needs-Fall 2006 to Fall 2015 (434).

**4.** *Short Term Training for Engineer Research and Development Center (ERDC).* Worked with ERDC and MSU faculty to set up program for PhD students to be on MSU campus for one semester.

**5.** *MSU National Television Spot 2011.* Arranged 2 graduate students to be included.

**6.** Students Giving Presentations.

| *Number of Students* | *Presentations* | *Description* |
|---|---|---|
| 6 | 12 | Podium Presenters of Peer Reviewed Papers |
| 5 | 5 | Podium or Co-Podium Presenters-No Associated Paper |
| 4 | 6 | Co-Poster Presenters of Peer Reviewed Papers |
| 9 | 8 | Student Forums-No Associated Paper (Notes 1 and 2) |

Note 1: W.G. Sullivan, B. Anderson, B. Payne won 4th Annual Transportation Workshop Student Poster Competition, 2012.

Note 2: J. Shannon won STRIDE Student Research Poster Competition, 2013.

## MEDIA, MAGAZINE, AND INDUSTRY COVERAGE

**1.** Making the Black Top Green. Story by S.E. Lassetter in *Dimensions Annual Research Report for James Worth Bagley College of Engineering*, 2007-2008 edition, pp. 20-21.

**2.** Postcards Developed by James Worth Bagley Publications & Communications Office.
   a. *Civil Engineering With No Limits* (2008). I.L. Howard and C.L. Saucier Featured, 2500 printed, developed by S.E. Lassetter.
   b. *Creating Future Destinations by Paving a Way With Recycling* (2009). I.L. Howard and J.D. Doyle Featured, 2500 printed, developed by D. Godwin.

**3.** Research at MSU to Create Environmentally Friendly Ways to Pave the Nation's Highways. I.L. Howard Interviewed by L. Childrey, Feb 23, 2011, Mississippi Public Broadcasting.

**4.** Magazine Coverage of Research or Other Activities.
   a. *Better Roads,* August 2012, pp. 18-25.
   b. *Asphalt Pavement-National Asphalt Pavement Association*, Vol 18(2), 2013, pp. 17.
   c. *Concrete Products*, Vol 116(3), 2013, pp. 32-33.
   d. *The Concrete Producer,* July-Aug, 2014.
   e. *Concrete Products*, Vol 118(3), 2015, pp. 38.

**5.** Industry Newsletter (or Equivalent) Coverage of Research or Other Activities
   a. *Oldcastle® Connections*, Vol 5(1), 2012, pp. 9.
   b. *MCIA Today*, Special Edition-MDOT PLC Spec 2014.

**6.** Stadium Expansion Project Goes Green. Story by L. Barbour in *Mississippi State Alumnus*, Spring 2013 Edition, pp. 28-29.

**7.** Cementing Success: Sustainable Concrete at MSU Wins Recognitions. Story by L. Barbour and A. Matthews Posted on MSU, BCoE, and CEE Website Home Pages and Sent to Regional Media Outlets, May 2015.

**8.** MDOT Employee Wins Award for Highway Design and Construction Approach. Story by M. Miller of MDOT Public Affiars Office Regarding Soil-Cement Paper Authored by W. Griffin Sullivan, Isaac L. Howard, and Brennan K. Anderson, December 2015.

## CONSULTING

Details available on a case by case basis upon request.

## GRADUATE STUDENTS

*Master of Engineering with Non-Thesis Option = MEng-NT*
*Master of Science in Civil Engineering with Non-Thesis Option = MSCE-NT*
*Master of Science in Civil Engineering with Thesis Option = MSCE-Thesis*
*Doctor of Philosophy = PhD*

### Completed PhD Students at MSU: Major Professor

**1.** Doyle, Jesse D. (2011). *Characterization of Reclaimed Asphalt and Performance Based Evaluation of its Use in Recycled Mixtures.*

**2.** James, Robert S. (2014). *Performance Oriented Guidance for Airfield Asphalt Pavements Within the Superpave Context.*

**3.** Shannon, Jameson D. (2015). *Performance and Sustainability Benefits of Concrete Containing Portland-Limestone Cement.*

**4.** Cox, Benjamin C. (2015). *Cold In-Place Recycling Characterization Framework for Single or Multiple Component Binder Systems.*

**5.** Baumgardner, Gaylon L. (2015). *Characterization and Implementation of Ground Tire Rubber as Post-Consumer Polymers for Asphalt Concrete.*

**Completed MSCE-Thesis Students at MSU: Major Professor**

1. Stroble, Martin F. (2009). *Analysis and Design of Wood Construction Platforms Using Instrumentation*.
2. Bell, Haley P. (2009). *Fatigue Evaluation Criteria for Aged Hot-Mixed Asphalt Surfaces.*
3. Jordan, Walter S. (2010). *Laboratory Evaluation of Surface Treatments to Asphaltic Pavements in Mississippi.*
4. Shaw, Justin M. (2010). *Shear Stress Analysis of Levees Subjected to Combined Surge and Wave Overtopping.*
5. Rushing, Timothy W. (2010). *Full-Scale Evaluation of Matting Systems for Temporary Roads*.
6. Carruth, William D. (2011). *Laboratory Evaluation of Specialty Portland Cements and Polymer Fibers in Stabilization of Fine Grained Soils.*
7. Barham, Jason M. (2011). *Effect of Asphalt Emulsion on Surface Treated Flexible Pavements Using the Bending Beam Rheometer.*
8. Alvarado, Alejandro J. (2012). *Investigation of Chip Seal Aggregate Retention Using Sweep and Long Term Performance Testing.*
9. Williams, Kevin L. (2012). *The Effects of Coarse Aggregate Cleanliness on Asphalt Concrete Compactability and Moisture Susceptibility.*
10. Bilberry, Amanda C. (2012). *Rapidly Deployable Armoring System for Temporary Protection of Earthen Levees During Overtopping.*
11. Sullivan, William G. (2012). *Investigation of Compaction and Corresponding Thermal Measurement Techniques for Cementitiously Stabilized Soils.*
12. Anderson, Brennan K. (2013). *Investigation of Factors Influencing Design and Performance of Soil Cement Pavement Layers.*
13. Garcia-Beltran, Lyan, I. (2015). *Full-Scale Instrumented Evaluations of Multiple Airfield Matting Systems on Soft Soil to Characterize Permanent Deformation.*

**Completed MSCE-NT Students at MSU: Major Professor**

1. Doyle, Jesse D. (2010)
2. Badran, Walaa H. (2010)
3. Norwood, Gregory J. (2012)
4. Cox, Ben C. (2012)
5. Craft (Parkman), Heather D. (2013)
6. Towne, Brentton W. (2014)
7. Leard, Melanie A. (2014)
8. Floyd, Webster C. (2014)
9. Crawley, William C. (2014)
10. Cox (Vargas), Sara L. (2014)
11. Kuykendall, Patrick L. (2015)
12. Otts (Lawrence), Rae Ann (2015)
13. Bazuhair, Rabeea W. (2015)

**Completed Graduate Students at MSU: Degree is Denoted in Parenthesis: Committee Member**

1. (2006) Mann, Travis A. (MSCE-Thesis)
2. (2007) Gartrell, Chad A. (MSCE-Thesis)
3. (2008) Whittington, Jordan S. (MSCE-Thesis)
4. (2009) Rushing, John F. (MSCE-Thesis)
5. (2009) Velez, Eileen M. (MSCE-NT)
6. (2009) May, Cecil (MEng-NT)
7. (2010) Davis, Trey E. (MSCE-Thesis)
8. (2010) Lamey, Katherine E. (MSCE-NT)
9. (2010) Richard, Marneshia V. (MSCE-NT)
10. (2012) Shannon, Jay (MSCE-NT)
11. (2013) Crosby, Kyle (PhD)
12. (2013) Tasmin, Farzana (MSCE-NT)
13. (2015) Stevens, Maria, T. (MSCE-Thesis)