

# Wesley C. Zech, Ph.D., LEED AP

Professor and Director of Civil Engineering Construction Management

**UAB THE UNIVERSITY OF ALABAMA AT BIRMINGHAM**

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## EDUCATION

**Ph.D.**, Civil Engineering (Construction Engineering & Mgmt.), State University of New York at Buffalo, Feb. 2004

**M.E.**, Civil Engineering (Construction Engineering & Mgmt.), State University of New York at Buffalo, May 2000

**B.S.**, Civil Engineering, State University of New York at Buffalo, May 1999

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## CERTIFICATIONS

Leadership in Energy and Environmental Design (LEED) Accredited Professional (AP) [June 2009]

Authorized 30-hr OSHA Construction Safety and Health Management Trainer [July 2006, 2010, 2014, & 2018]

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## EMPLOYMENT HISTORY

2019-Present	Professor & Director of Civil Engineering Construction Management, Dept. of Civil, Construction, and Environmental Engineering, University of Alabama at Birmingham
2016-2018	Brasfield & Gorrie Professor of Construction Engineering & Management, Dept. of Civil Engineering, Auburn University
2011-2016	Brasfield & Gorrie Associate Professor of Construction Engineering & Management, Dept. of Civil Engineering, Auburn University
2010-2011	Gottlieb Associate Professor of Civil Engineering (Construction), Dept. of Civil Engineering, Auburn University
2009-2010	Associate Professor of Civil Engineering (Construction), Department of Civil Engineering, Auburn University
2004-2009	Assistant Professor of Civil Engineering (Construction), Department of Civil Engineering, Auburn University
2000-2004	Graduate Teaching Assistant, SUNY at Buffalo, Civil Engineering Department

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## COURSES TAUGHT

**CECM 670 – Construction Estimating and Bidding** (3 credit hrs.): The primary focus of this course is learning the fundamentals of completing a detailed unit price estimate focusing on labor, equipment, materials, job conditions and location, as well as overhead and profit considerations. In addition, there will be a broad study of estimating methods at varying degrees of detail and accuracy with examples. The importance of the type of contract in estimating will be stressed.

**CIVL 3410 – Construction Engineering** (3 credit hrs.): This course provides an overview of the construction engineering and management environment placing into context the sequential stages and participants of the construction project, as well as exploring the various documents and procedures affiliated with the construction process.

**CIVL 4420 – Project Management** (3 credit hr. lecture): This course provides a detailed overview of the project management environment and its application to engineering | construction projects. Upon successfully completing this course the students will have learned and adequately demonstrated they have the following abilities, skills, and knowledge; as well as, having been exposed to course experiences whereby they may acquire the desired perspectives: (1) understand the unique characteristics of engineering | construction projects, (2) understand and appreciate basic principles of E/C organizations, (3) the ability to apply proper techniques to manage project scope,

cost, time, resources, risk, quality and safety, (4) know the management sub-processes in accomplishing projects, (5) appreciate elements of managerial leadership: ethical conduct, problem-solving posture, motivation, productivity improvement, communication clarity, and facilitated group dynamics, and (6) appreciate the value of project information and how it might be used in project decision making.

**CIVL 4490<sup>1</sup> – Design-Build Project** (3 credit hrs.): The objective of this course is for students to develop a design-build proposal for a civil engineering improvement that includes an engineering study, consideration of alternative designs, and formal written and oral presentation. This course provides students with a meaningful design experience in which they use information and concepts from various undergraduate courses to solve real-world engineering design problems. The students are exposed to the thought processes and attention to detail inherent in engineering design. The course emphasizes teamwork, communication, conceptual design and engineering, and economic analysis for completion of a design project. The course is greatly enhanced by industry participation.

Note: <sup>1</sup>Senior design capstone course focusing on the USGBC LEED Standards for New Construction v4

**CIVL 5430 | 6430 – Construction Safety & Health Management** (3 credit hrs.): This course covers various causes of construction accidents and adopted strategies to prevent worksite injuries and illnesses. Other topics covered include workers' compensation, OSHA standards for the construction industry, economics of construction safety management, temporary structures, system safety, ergonomic applications, health hazards, and the development of a safety program. Students successfully completing the course receive a 30-hr card indicating that they have successfully completed 30-hrs worth of OSHA construction safety and health training and are familiar with OSHA 29 CFR 1926 Construction Safety and Health Standards.

**CIVL 5440 | 6440 – Construction Equipment and Methods** (3 credit hrs.): This course encompasses the technical, economic, and safety issues associated with construction engineering. Specifically, this includes project layout, equipment selection, equipment performance, productivity, economics, and project specific health and safety plans. This course addresses typical design problems encountered during construction projects as well as quality control, project documentation requirements, and technological innovations that improve productivity or enhance safety.

**CIVL 5450 | 6450 – Erosion and Sediment Control Technologies in Construction** (3 credit hrs.): This course will teach undergraduate students, graduate students, and industry participants about the various causes of construction site erosion, and the strategies that can be adopted to prevent erosion from occurring. The course will cover local and federal regulatory requirements, mechanisms affecting erosion including: rainfall, soil, and topographic factors contributing to erosion losses on urban construction sites. The use, design, and evaluation of erosion and sediment control devices will be discussed. At the successful completion of this course, the student will have the knowledge to prepare erosion and sediment control plans to satisfy regulatory requirements and the ability to design erosion and sediment controls to meet specific objectives based upon project site characteristics. Some guest lecturers from the industry and regulatory agencies will be invited for discussions on current practices.

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## TEACHING AWARDS

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5. 2016 District James M. Robbins Excellence in Teaching Award Recipient
4. 2016 Outstanding Graduate Mentor – Auburn University Graduate Student Council
3. 2013 Fred H. Pumphrey Teaching Award – Samuel Ginn College of Engineering
2. 2013 Civil Engineering Outstanding Faculty Member – Samuel Ginn College of Engineering
1. 2013 SGA Outstanding Faculty Member – Samuel Ginn College of Engineering

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## NATIONAL AWARDS

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3. 2019 International Erosion Control Association (IECA) Environmental Excellence Award
3. 2019 International Erosion Control Association Technical Paper of the Year
2. 2016 National James M. Robbins Excellence in Teaching Award Recipient
1. 2015 International Erosion Control Association (IECA) Presenter of the Year

## SCHOLARLY CONTRIBUTIONS

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Note: \* indicates student contributions.

### Refereed journals:

40. Perez, M.A., **Zech, W.C.**, Vasconcelos, J.G., and Fang, X. (2019). [Large-scale Performance Testing of Temporary Sediment Basin Treatments and High Rate Lamella Settlers](#). *Water*, 11(2), 316, [DOI: 10.3390/w11020316].
39. Rogers, T.M., **Zech, W.C.**, Shambley, J., Donald, W.N., and Rueda, J. (2018). [State-of-the-Practice for Liquidated Damages, Incentive/Disincentive, and Road User Cost Provisions on High Value Contract Transportation Projects](#), ASCE J. of Legal Affairs and Dispute Resolution in Engineering and Construction, Vol. 11, Issue 2, May 2019, [DOI: 10.1061/(ASCE)LA.1943-4170.0000286].
38. Basham, D.L., **Zech, W.C.**, Donald, W.N., and Perez, M.A. (2019). [Design and Construction of a Large-scale Testing Apparatus for Evaluating the Performance of Catch Basin Inserts](#). ASCE J. of Sustainable Water in the Built Environment, Volume 5, Issue 1, pp. 1-9, [DOI: 10.1061/JSWBAY.0000868].
37. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2018). [Full-scale Performance Evaluations of Various Wire-Backed Nonwoven Silt Fence Installation Configurations](#). *Transportation Research Record: Journal of the Transportation Research Board*, 00(0), pp. 1-11. [doi: 10.1177/0361198118758029].
36. Bugg, R.A., Donald, W.N., **Zech, W.C.**, and Perez, M.A. (2017). [Performance Evaluations of Three Silt Fence Practices Using a Full-Scale Testing Apparatus](#), *Water*, 9, 502, [doi:10.3390/w9070502].
35. Bugg, R.A., Donald, W.C., **Zech, W.C.**, and Perez, M.A. (2017). [Improvements in Standardized Testing for Evaluating Sediment Barrier Performance: Design of a Full-Scale Testing Apparatus](#), *J. Irrig. Drain Eng.*, Vol. 143, Issue 8. [doi: 10.1061/(ASCE)IR.1943-4774.0001194, 04017029].
34. Moore, M., Vasconcelos, J., and **Zech, W.C.**, (2017). [Modeling Highway Stormwater Runoff and Groundwater Table Variations with SWMM and GSSHA](#), *J. of Hydrologic Engineering*, Vol. 22, Issue 8. [doi: 10.1061/(ASCE)HE.1943-5584.0001537, 04017025-1].
33. Moore, M.F.; Vasconcelos, J.G.; **Zech, W.C.**, and Soares, E.P. (2016). [A procedure for resolving thermal artifacts in pressure transducers](#). *Flow Measurement and Instrumentation*, Elsevier, Vol. 52, pp. 219-226. [doi: 10.1016/j.flowmeasinst.2016.10.010].
32. Ghorghi, F.B., Zhou, H., and **Zech, W.C.** (2016). [Red-Light Running Traffic Violations: A Novel Time-based Method for Determining a Fine Structure](#). *Transportation Research Part A: Policy and Practice*, Volume 93, pp. 55-65, [doi: 10.1016/j.tra.2016.08.015].
31. Perez, M.A., **Zech, W.C.**, Donald, W.N., and Fang, X. (2016). [SEDspread: Sediment-Basin Design Tool for Construction Sites](#). *J. Irrig. Drain Eng.* [doi: 10.1061/(ASCE)IR.1943-4774.0001099, 04016064].
30. Donald, W., **Zech, W.C.**, Fang, X., and Perez, M. (2016). [Hydraulic Method to Evaluate the Performance of Ditch Check Practices and Products](#). *J. Hydrol. Eng.* [doi: 10.1061/(ASCE)HE.1943-5584.0001311, 04016042].
29. Perez, M.A., **Zech, W.C.**, Fang, X, and Vasconcelos, J. (2016). [Methodology and Development of a Large-Scale Sediment Basin for Performance Testing](#), *J. Irrig. Drain Eng.* [doi: 10.1061/(ASCE)IR.1943-4774.0001052, 04016042].
28. Perez, M.A.\* **Zech, W.C.**, Donald, W.N. and Fang, X. (2016). [Design Methodology for the Selection of Temporary Erosion and Sediment Control Practices based on Regional Hydrological Conditions](#), ASCE J. of Hydrologic Engineering, Vol. 21, Issue 4. [doi: 10.1061/(ASCE)HE.1943-5584.0001328 , 05016001].
27. Perez, M.A.\* **Zech, W.C.**, Donald, W.N. and Fang, X. (2015). [Installation Enhancements to Common Inlet Protection Practices \(IPPs\) using Large-Scale Testing Techniques](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2521, pp. 151-161. [doi: 10.3141/2521-16].
26. Donald, W.N., **Zech, W.C.**, and Fang, X. (2015). [Evaluation and Modification of Wire Backed, Nonwoven Filter Fabric Silt Fence for Use as a Ditch Check](#), ASCE J. of Irrigation and Drainage Engineering, 04015050 [doi: 10.1061/(ASCE)IR.1943-4774.0000959].

25. Perez, M.A.\*, **Zech, W.C.**, and Donald, W.N. (2015). [Using Unmanned Aerial Vehicles to Conduct Site Inspections of Erosion and Sediment Control Practices and Track Project Progression](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2528, pg. 38-48 [doi: 10.3141/2528-05].
24. Fang, X., **Zech, W.C.**, and Logan, C.P.\* (2015). [Stormwater Field Evaluation and Its Challenges of a Sediment Basin with Skimmer and Baffles at a Highway Construction Site](#), *Water*, 7, 3407-3430. [doi: 10.3390/w7073407].
23. Sidhu, R.S. \*, Dougherty, M., **Zech, W.C.**, Guertal, B. (2015). [Cost Effectiveness of Erosion Control Covers during Vegetation Establishment under Simulated Rainfall](#), *Journal of Water Resource and Protection*, Scientific Research Publishing, 7(2), 119-129 [doi:10.4236/jwarp.2015.72010].
22. Donald, W.N.\*, **Zech, W.C.**, Perez, M.A., and Fang, X. (2015). [Comparative Evaluation of Wattle Ditch Checks Composed of Differing Materials and Properties](#). *ASCE J. of Irrig. and Drain. Eng.* [doi: 10.1061/(ASCE)IR.1943-4774.0000794].
21. Perez, M.A.\*, **Zech, W.C.**, Donald, W.N. Donald, and Xing Fang. (2015). [Methodology for Evaluating Inlet Protection Practices Using Large-Scale Testing Techniques](#). *ASCE J. of Hydrologic Eng.* [doi: 10.1061/(ASCE)HE.1943-5584.0001019].
20. **Zech, W.C.**, Logan C.\*, and Fang, X. (2014). [State of the Practice: Evaluation of Sediment Basin Design, Construction, Maintenance, and Inspection Procedures](#), *ASCE Prac. Period. Struct. Des. Constr.* [doi:10.1061/(ASCE)SC.1943-5576.0000172, 04014006].
19. Shrestha, S.\*, Fang, X., and **Zech, W.C.** (2014). [What should be the 95th Percentile Rainfall Event Depths?](#) *ASCE J. of Irrig. and Drain Eng.*, 140(1), 06013002. [doi: 10.1061/(ASCE)IR.1943-4774.0000658].
18. Donald, W.N.\*, **Zech, W.C.**, Fang, X. and LaMondia, J.J. (2013). [Evaluation of Wheat Straw Wattles for Velocity Reduction in Ditch Check Installations](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2358, pp. 69-78. [doi: 10.3141/2358-08].
17. Shoemaker, A\*, **Zech, W.C.**, and Clement, T.P. (2012). [Laboratory-scale Evaluation of Anionic Polyacrylamide as an Erosion and Sediment Control Measure on Steep-Sloped Construction Sites](#), *Transactions of the ASABE*, 55(3): 809-820. [doi: 10.13031/2013.41516].
16. Watts, M.Y.\*, **Zech, W.C.**, Turochy, R.E., Holman, D.\*, and LaMondia, J.J. (2012). [Effects of Vehicle Volume and Lane Closure Length on Construction Road User Costs in Rural Areas](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2268, pp. 3-11. [doi: 10.3141/2268-01].
15. Kichler, C.M.\*, Fulton, J.P., Raper, R.L., McDonald, T.P., and **Zech, W.C.** (2011). [Effects of Transmission Gear Selection on Tractor Performance and Fuel Costs during Deep Tillage Operations](#), *Soil and Tillage Research*, 113(2): 105-111. [doi: 10.1016/j.still.2011.03.002].
14. Flowers, J. N.\*, **Zech, W.C.**, and Abbas, H.H. (2010). [Rapid Bridge Deck Replacement Construction Techniques: State of the Practice](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2152, pp. 39-48. [doi: 10.3141/2152-05].
13. Sharda, A.\*, Fulton, J.P., McDonald, T.P., **Zech, W.C.**, Darr, M.J., and Brodbeck, C.J. (2010). [Real-time pressure and flow dynamics due to boom section and individual nozzle control on agricultural sprayers](#), *Transactions of ASABE*, 53(5): 1363-1371. [doi: 10.13031/2013.34891].
12. Campbell, C. M.\*, Fulton, J.P., Wood, C.W., McDonald, T. P., and **Zech, W.C.** (2010). [Utilizing nutrient over mass distribution patterns for assessment of poultry litter spreaders](#). *Transactions of ASABE*, 53(3): 659-666. [doi: 10.13031/2013.30057]
11. Campbell, C.M.\*., J.P. Fulton, T.P. McDonald, C.W. Wood, **W.C. Zech**, and Srivastava, P. (2010). [Spinner-Disc Technology to Enhance the Application of Litter](#). *Applied Engineering in Agriculture*, 26(5): 759-767. [doi: 10.13031/2013.34936]
10. **Zech, W.C.**, McDonald, J.\*, and Clement, T.P. (2009). [Field Evaluation of Silt Fence Tieback Systems at a Highway Construction Site](#), *ASCE Prac. Period. Struct. Des. Constr.*, 14(3):105-112. [doi:10.1061/(ASCE)1084-0680(2009)14:3(105)].

9. Crowley, L.G., **Zech, W.C.**, Bailey, C.\*, and Gujar, P.P.\* (2008). [Liquidated Damages: A Review of the Current State-of-The-Practice](#), ASCE *J. of Prof. Issues in Eng. Educ. Prac.*, 134(4): 383-390. [doi: 10.1061/(ASCE)1052-3928(2008)134:4(383)]
8. **Zech, W.C.**, Bailey, C.\*, and Crowley, L.G. (2008). [Robust Determination of Liquidated Damage Rates for State Highway Agencies \(SHAs\)](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2081, pp. 65-73. [doi: 10.3141/2081-07].
7. **Zech, W.C.**, Halverson, J.L.\*, and Clement, T.P. (2008). [Intermediate-scale Experiments to Evaluate Silt Fence Designs to Control Sediment Discharge from Highway Construction Sites](#), *ASCE Journal of Hydrologic Engineering*, 13(6):497-504. [doi: 10.1061/(ASCE)1084-0699(2008)13:6(497)].
6. **Zech, W.C.**, Mohan, S, and Dmochowski, J. 2008. [Evaluation of Messages on Changeable Message Signs as Speed Control Measure in Highway Work Zones](#), *ASCE Prac. Period. Struct. Des. Constr.*, 13(1):11-18. [doi: 10.1061/(ASCE)1084-0680(2008)13:1(11)].
5. **Zech, W.C.**, Halverson, J.L.\*, and Clement, T.P. (2007). [Development of a Silt Fence Tieback Design Methodology for Highway Construction Installations](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 2011, pp. 21-28. [doi: 10.3141/2011-03].
4. Stroup-Gardiner, M., **Zech, W.C.**, and Rathod, J.\* (2007). [Changes in Key Flexible Pavement Condition Measurements Over Typical Time Warranty Periods](#), *Transportation Research Record: Journal of the Transportation Research Board*, No. 1990, pp. 14-22. [doi: 10.3141/1990-02]
3. Mohan, S. and **Zech, W.C.** (2006). [Characteristics of Traffic Accidents in Highway Work Zones](#), *ITE Journal on the Web*. [<http://www.ite.org/membersonly/itejournal/pdf/2006/JB06DA73.pdf>].
2. **Zech, W.C.**, Mohan, S, and Dmochowski, J. (2005). [Evaluation of Rumble Strips and Police Presence as Speed Control Measure in Highway Work Zones](#), *ASCE Prac. Period. Struct. Des. Constr.*, 10(4): 267 -275. [doi: 10.1061/(ASCE)1084-0680(2005)10:4(267)].
1. Mohan, S. and **Zech, W.C.** (2005). [Characteristics of Worker Accidents on NYSDOT Construction Projects](#), *Journal of Safety Research*, Vol. 36, pp. 353-360. [doi: 10.1016/j.jsr.2005.06.012]

#### **Journal articles under review:**

5. Perez, M.A., **Zech, W.C.**, Donald, W.N., Turochy, R.E., Karabulut-IIgu, A., and Fagan, B.G. (2018). [Transferring Innovative Erosion and Sediment Control Research Results into Industry Practices](#), Technical Paper CSCE-2018-0093, *Studies in Continuing Education*, submitted on December 3, 2018, [under review].
4. Basham, D.L., **Zech, W.C.**, and Donald, W.N. (2018). [Evaluating Sediment Removal Efficiency of Catch Basin Inserts as a Post-Construction Water Quality Tool for Ohio Roadways](#), Technical Paper IRENG-8719, *ASCE J. of Sustainable Water in the Built Environment*, submitted on November 2, 2018, [under review].
3. Whitman, J.B., Perez, M.A., **Zech, W.C.**, Donald, W.N., and McLaughlin, R.A. (2018). [Silt Fence State-of-the-Practice: A Review of Design, Installation, Inspection, and Maintenance Standards](#), Technical Paper SCENG-656, *Practice Periodical on Structural Design and Construction*, submitted on October 31, 2018, [under review].
2. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2018). [Innovative Small-Scale Performance Evaluations of Geotextile Fabrics used in Silt Fence Applications](#), Technical Paper G&G-3561, *Geotextiles and Geomembranes*, submitted on October 5, 2018, [under review].
1. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2018). [Full-Scale Performance Evaluations of Innovative and Manufactured Sediment Barrier Practices](#), TRB Paper 19-00377, submitted to the *Transportation Research Record 98<sup>th</sup> Annual Meeting*, July 28, 2018, [under review].

#### **Conference proceedings:**

65. Basham, D.L., **Zech, W.C.**, and Donald, W.N. (2019). [Evaluating Sediment Removal Efficiency of Catch Basin Inserts \(CBI\) as a Post-Construction Water Quality Tool for Ohio Roadways](#), *Proceedings of 19th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Denver, CO. Feb. 20-22.
64. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2019). [Full-Scale Performance Evaluations of Innovative and Manufactured Sediment Barrier Practices](#), *Proceedings of 19th Annual International Erosion Control*

Association (IECA) Environmental Connection Conference, Erosion & Sediment Control (TS-6) Session, Denver, CO. Feb. 20-22. [\*\*Awarded 2019 IECA Technical Paper of the Year\*\*]

63. Basham, D.L, **Zech, W.C.**, and Donald, W.N. (2019). Evaluating Sediment Removal Efficiency of Catch Basin Inserts as a Post-Construction Water Quality Tool for Ohio Roadways, *Transportation Research Board 98th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 19-04777 Extended Abstract, Washington DC, Jan. 13-17.
62. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2019). Full-Scale Performance Evaluations of Innovative and Manufactured Sediment Barrier Practices, *Transportation Research Board 98th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 19-00377 Extended Abstract, Washington DC, Jan. 13-17.
61. Whitman, J.B., Donald, W.N., **Zech, W.C.**, and LaMondia, J.J. (2018). Full-scale Performance of Various Non-woven, wire backed silt fence installation configurations. *Proceedings of 18th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Long Beach, CA. Feb. 11-14.
60. Perez, M.A., Donald, W.N., **Zech, W.C.**, and Fang, X. (2018). Sizing Sediment Basins for Site-Specific Conditions. *Proceedings of 18th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Long Beach, CA. Feb. 11-14.
59. Basham, D.A., **Zech, W.C.**, Donald, W.N., and Perez, M.A. (2018). Design and Construction of a Catch Basin Insert Testing Apparatus for Performance Evaluation. *Proceedings of 18th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Long Beach, CA. Feb. 11-14.
58. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2018). Full-Scale Performance Evaluations of Various Wire-Backed Nonwoven Silt Fence Installation Configurations. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-01215 Extended Abstract, Washington DC, Jan. 7-11.
57. Turochy, R.E., Jehn, N.L., **Zech, W.C.**, and LaMondia, J.J. (2018). Analysis of Work-Zone Crash Reports to Determine Factors Associated with Crash Severity. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-00866 Extended Abstract, Washington DC, Jan. 7-11.
56. Rogers, T.M., **Zech, W.C.**, Shambley, J.O., Donald, W.N., and Rueda, J. (2018). State of the Practice for Liquidated Damages on High-Value Contract Projects. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-01271 Extended Abstract, Washington DC, Jan. 7-11.
55. Perez, M.A., **Zech, W.C.**, Vasconcelos, J.G., and Fang, X. (2018). Large-Scale Performance Testing of Temporary Sediment Basin Treatments and High-Rate Lamella Settlers. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-00486 Extended Abstract, Washington DC, Jan. 7-11.
54. Horne, M.A., **Zech, W.C.**, Fang, X., Donald, W.N., and Perez, M.A. (2018). Design and Construction of a Pressurized Rainfall Simulator for Performance-Based Testing of Erosion-Control Practices. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-01268 Extended Abstract, Washington DC, Jan. 7-11.
53. Basham, D.L, **Zech, W.C.**, and Donald, W.N. (2018). Design and Construction of a Large-Scale Testing Apparatus for Evaluating the Performance of Catch Basin Inserts. *Transportation Research Board 97th Annual Meeting Compendium of Papers (Online)*, TRB Paper No. 18-01215 Extended Abstract, Washington DC, Jan. 7-11.
52. Perez, M.A., Donald, W.N., **Zech, W.C.**, and Fang, X. (2017). SEDspread: Sediment Basin Design Tool for Construction Sites. *Proceedings of 17th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. Feb. 22-24.
51. Perez, M.A., **Zech, W.C.**, Donald, W.N., and Fang, X. (2017). Large-Scale Performance Evaluations of High Rate Lamella Settlers in Sediment Basin Applications. *Proceedings of 17th Annual International Erosion Control*

Association (IECA) Environmental Connection Conference, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. Feb. 22-24.

50. Bugg, R.A., **Zech, W.C.**, and Donald, W.N. (2017). Evaluation of Sediment Barriers (SBs) Using Large-Scale Testing Techniques, *Proceedings of 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. Feb. 22-24.

49. Bugg, R.A.\* , Donald, W.N., and **Zech, W.C.** (2016). Evaluations of Sediment Barriers (SBs) using Large-scale Testing Techniques, *Proceedings of the 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 16-19.

48. Perez, M.A.\* , **Zech, W.C.**, Donald, W.N., and Fang, X. (2016). Performance Comparisons of Construction Inlet Protection Practice (IPP) using Large-Scale Testing, *Proceedings of the 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 16-19.

47. Perez, M.A.\* , **Zech, W.C.**, Fang, X., and Vasconcelos, J. (2016). Large-scale Performance Enhancement Study of Sediment Basin Technology, *Proceedings of the 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 16-19.

46. Perez, M.A.\* , **Zech, W.C.**, Donald, W.N., and Fang, X. (2015). Enhanced Inlet Protection Practices Developed through Large-Scale Testing, *Proceedings of the 2nd Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference*, Erosion & Sediment Control Session, Atlanta, GA. June 15-16.

45. Perez, M.A.\* , **Zech, W.C.**, and Donald, W.N. (2015). Drones: The Future of Erosion and Sediment Control Site Inspections, *Proceedings of the 2nd Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference*, Erosion & Sediment Control Session, Atlanta, GA. June 15-16.

44. Donald, W.N., **Zech, W.C.**, Fang, X., and Perez, M.A.\* (2015). Using Hydraulic Performance to Characterize Ditch Check Practices, *Proceedings of the 15<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 15-18.

43. Perez, M.A.\* , **Zech, W.C.**, and Donald, W.N. (2015). “Drones”: Revolutionizing Erosion and Sediment Control Site Inspections, *Proceedings of the 15<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 15-18.

42. Perez, M.A.\* , **Zech, W.C.**, Donald, W.N., and Fang, X. (2015). Evaluation of Inlet Protection Practice (IPP) Installations using Large-Scale Testing Techniques, *Proceedings of the 15<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 15-18.

41. Donald, W.N.\* , **Zech, W.C.**, and Fang, X. (2014). Evaluation of Ditch Check Practices: Part 2 – Comparative Performance Evaluation of Improved Practices, *Proceedings of the 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Nashville, TN, Feb. 25-28.

40. Donald, W.N.\* , **Zech, W.C.**, and Fang, X. (2014). Evaluation of Ditch Check Practices: Part 1 – Improvements to Commonly Used Practices, *Proceedings of the 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Nashville, TN, Feb. 25-28.

39. Perez, M.A.\* , **Zech, W.C.**, Donald, W.N.\* , and Fang, X. (2014). Evaluation of Inlet Protection Practices using Large Scale Testing Techniques, *Proceedings of the 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Nashville, TN, Feb. 25-28.

38. Fang, X., **Zech, W.C.**, and Logan, C.P.\* (2014). Assessing the Performance of a Sediment Basin at a Construction Site in Franklin County, Alabama, *Proceedings of the 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Nashville, TN. Feb. 25-28.

37. Perez, M.A.\* , **Zech, W.C.**, Donald, W.N.\* , and Fang, X. (2014). Methodology Development for Evaluating Inlet Protection Practices Using Large-Scale Testing Techniques, *Transportation Research Board 93<sup>rd</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 14-4664, Washington DC, Jan. 12-16.

36. Donald, W.N.\*, **Zech, W.C.**, and Fang, X. (2014). Comparative Evaluation of Wattles used as Ditch Checks Comprised of Differing Materials and Properties. *Transportation Research Board 93<sup>rd</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 14-4422, Washington DC, Jan. 12-16.
35. Donald, W.N.\*, **Zech, W.C.**, and Fang, X. (2013). Comparative Evaluation of Wattle Ditch Checks Comprised of Differing Materials and Properties. *Proceedings of the 13<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, San Diego, CA, Feb. 10-13.
34. Donald, W.N.\*, **Zech, W.C.**, Fang, X. and LaMondia, J.J. (2013). Ditch Check Installation Evaluations of Wheat Straw Wattles Used for Velocity Reduction, *Transportation Research Board 92<sup>nd</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 13-3268, Washington, D.C., Jan. 13-17.
33. **Zech, W.C.**, Logan, C.P.\*, and Fang, X. (2013). State-of-the-Practice: Evaluation of Sediment Basin Design, Construction, Maintenance, and Inspection Procedures, *Transportation Research Board 92<sup>nd</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 13-1528, Washington, D.C., Jan. 13-17.
32. Donald, W.N.\*, **Zech, W.C.**, and Fang, X. (2012). Evaluating Channelized Flow Sediment Control Practices Using Large-Scale Testing Techniques. *Proceeding (CD-ROM) for 2012 World Environmental and Water Resources Congress*, Albuquerque, NM, May 20-24.
31. Donald, W.N.\*, **Zech, W.C.**, and Fang, X. (2012). Auburn University's Testing Facility for Evaluating Channelized Flow Sediment Control Practices, *Proceedings of the 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Las Vegas, NV, Feb. 26-29.
30. Todd, D.A. and **Zech, W.C.**, (2012). Polymer-Enhanced Soft Armoring of Construction Slopes: From Research to Engineering, *Proceedings of the 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Las Vegas, NV, Feb. 26-29.
29. **Zech, W.C.**, Wilson, W.T.\*, and Clement, T.P. (2012). Evaluation of Hydromulches as an Erosion Control Measure using Intermediate-Scale Experimental Procedures, *Proceedings of the 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Las Vegas, NV, Feb. 26-29.
28. Wilson, C.R.\*, Turochy, R.E., **Zech, W.C.**, and LaMondia, J.J. (2012). Development and Evaluation of Bicycle Parking Demand Models in a University Setting, *Transportation Research Board 91<sup>th</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 12-1710, Washington, D.C., Jan. 22-26.
27. Watts, M.Y.\*, **Zech, W.C.**, Turochy, R.E., Holman, D.\* , and LaMondia, J.J. (2012). Effects of Vehicle Volume and Lane Closure Length on Construction Road User Costs in Rural Areas, *Transportation Research Board 91<sup>th</sup> Annual Meeting Compendium of Papers (Online)*, Paper No: 12-1217, Washington, D.C., Jan. 22-26.
26. Dougherty, M., Messer, C.\* , Guertal, B., Norton, E., and **Zech, W.C.** (2011). Establishing, Monitoring, and Maintaining Common Bermudagrass on Steep Slopes in Alabama, *Proceedings of the 11<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Orlando, FL, Feb. 20-23.
25. Hall, J.B.\* , Fulton, J.P., McDonald, T.P., Fasina, O.O., **Zech, W.C.** (2010). Using 3-D simulation to evaluate spinner spreader performance for variable-rate application of poultry litter. ASABE Paper No: 1009265. *ASABE Annual International Meeting*, Pittsburgh, PA, June 20-23.
24. Wilson, W.T.\* , **Zech, W.C.**, Clement, T.P. and Shoemaker, A.L\*. (2010). Polymer-Enhanced Soft Armoring: An Erosion and Sediment Control Measure for Construction Fill Slopes, *Proceedings of the 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Dallas, TX, Feb. 16-20.,
23. Dougherty, M., Baharanyi, A.\* , Guertal, B., Grace III, J., **Zech, W.C.**, LeBleu, C., and Norton, E. (2010). Techniques for Establishing Vegetation for Long-term Erosion Control on Disturbed Slopes in Alabama, *Proceedings of the 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Dallas, TX, Feb. 16-20.
22. Donald, W.N.\* , **Zech, W.C.**, Clement, T.P. (2010). Development of a Large-Scale Erosion and Sediment Control Testing Facility, *Proceedings of the 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference*, Dallas, TX, Feb. 16-20.
21. Flowers, J. N.\* , **Zech, W.C.**, and Abbas, H.H. (2010). State-of-the-Practice: Rapid Bridge Deck Replacement Construction Techniques, *Transportation Research Board 89<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 10-1398, Washington, D.C., Jan. 10-14.

20. Fulton, J.P., Sharda, A.\*, McDonald, T.P., **Zech, W.C.**, and Darr, M.J. (2009). Impact of auto-swath technology on agricultural sprayer boom dynamics. *Proceedings of the 67<sup>th</sup> International Conference on Agricultural Engineering LAND.TECHNIK-AgEng 2009*, Exhibition Grounds, Hannover, Germany, Nov. 6-7. (invited paper)
19. Mullenix, D.K.\*, Fulton, J.P., Dougherty, M., Ceber, E., Fasina, O.O., Adhikari, S., and **Zech, W.C.** (2009). Optimizing irrigation rates for an experimental energy rotation. ASABE Paper No: 091745. *ASABE Annual International Conference*, Reno, NV, June 21-24.
18. Sharda, A.\*, Fulton, J.P., McDonald, T.P., Darr, M.J., **Zech, W.C.**, and Brodbeck, C.J. (2009). Real-time pressure and flow response for swath control technology. ASABE Paper No: 097320. *ASABE Annual International Conference*, Reno, NV, June 21-24.
17. Campbell, C.M.\*, Fulton, J.P., Wood, C.W., McDonald, T.P., **Zech, W.C.**, and Crowley, L.G. (2009). Mass and nutrient pattern comparison using spinner-disc control for variable-rate application. ASABE Paper No: 096337. *ASABE Annual International Conference*, Reno, NV, June 21-24.
16. **Zech, W.C.**, Walker, D.L.\*, Turochy, R.E., Shoemaker, A.\*, Hool, J. (2009). Effectiveness of Speed Tables as a Traffic Calming Measure on a College Campus Street, *Transportation Research Board 88<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 09-2841, Washington D.C., Jan. 11-15.
15. Kichler, C.M.\*, Fulton, J.P., Raper, R.L., **Zech, W.C.**, McDonald, T.P., and Schwab, E.B. (2008). Effects of Transmission Speed on Equipment Performance and Utilizing Spatial Equipment Performance Data for Management Decisions. *2008 Conservation Tillage School/Southern Conservation Agricultural Systems Conference*, Tifton, GA, July 29-31.
14. Campbell, C.M.\*, Fulton, J.P., Wood, C.W., **Zech, W.C.**, McDonald, T.P., and Brodbeck, C.J. (2008). Evaluating New Spinner Control Technology for Variable-Rate Application of Poultry Litter. *Proceedings of the 9th International Conference on Precision Agriculture (CD-ROM)*, Denver, CO, July 20-23.
13. Dougherty, M., Baharanyi, A.\*, Guertal, B., **Zech, W.C.**, LeBleu, C., and Norton, E. (2008). Evaluation of Erosion and Sediment Control Cover Types for Long-term Vegetation Establishment on Disturbed Soils. ASABE Paper No: 085300. *ASABE Annual International Conference*, Providence, RI, June 29-July 2.
12. Kichler, C.M.\*, Fulton, J.P., Raper, R.L., **Zech, W.C.**, McDonald, T.P., and Schwab, E.B. (2008). Effects of Transmission Speed Selection on Equipment Performance during Tillage Operations. ASABE Paper No: 084081. *ASABE Annual International Conference*, Providence, RI, June 29-July 2.
11. Sharda, A.\*, Fulton, J.P., McDonald, T.P., **Zech, W.C.**, and Brodbeck, C.J. (2008). Real-time Boom Dynamics on Sprayer Efficacy Due to Boom Section Control or Nozzle Control. ASABE Paper No: 085256. *ASABE Annual International Conference*, Providence, RI, June 29-July 2.
10. Campbell, C.M.\*, Fulton, J.P., Wood, C.W., **Zech, W.C.**, and McDonald, T.P. (2008). Improving Distribution of Poultry Litter with Spinner Spreaders. ASABE Paper No: 083615. *ASABE Annual International Conference*, Providence, RI, June 29-July 2.
9. **Zech, W.C.**, Stroup-Gardiner, M., and Rao, P.\* (2008). Development of a Pavement Load Related Distress Prediction Model using Artificial Neural Networks, *10th International Conference on Applications of Advanced Technologies in Transportation (AATT 2008)*, Athens, Greece, May 27-31.
8. **Zech, W.C.**, Bailey, C.\*, and Crowley, L.G. (2008). Robust Determination of Liquidated Damage Rates for State Highway Agencies (SHAs), *Transportation Research Board 87<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 08-2332, Washington D.C., Jan. 13-17.
7. Kichler, C.M.\*, Fulton, J.P., Raper, R.L., **Zech, W.C.**, McDonald, T.P., and Brodbeck, C.J. (2007). Assessment of Equipment Performance and Energy Requirements for the Development of Tillage Management Strategies. *2007 Southern Conservation Agricultural Systems Conference*, Quincy, FL. June 25-27.
6. Kichler, C.M.\*, Fulton, J.P., Raper, R.L., **Zech, W.C.**, McDonald, T.P., and Brodbeck, C.J. (2007). Spatially Monitoring Tractor Performance to Evaluate Energy Requirements of Variable-Depth Tillage and Implement Selection. ASABE Paper No: 071028. *ASABE Annual International Conference*, Minneapolis, MN, June 17-20.
5. **Zech, W.C.**, Halverson, J.L.\*, and Clement, T.P. (2007). Development of a Silt Fence Tieback Design Methodology for Highway Construction Installations, *Transportation Research Board 86<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 07-1239, Washington D.C., Jan. 21-25.

4. Crowley, L.G., **Zech, W.C.**, Bailey, C.\*, and Gujar, P.P.\* (2007). Liquidated Damages: A Review of The Current State-of-The-Practice, *Transportation Research Board 86<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 07-2407, Washington D.C., Jan. 21-25.
3. Stroup-Gardiner, M., **Zech, W.C.**, and Rathod, J.\* (2007). Changes in Key Flexible Pavement Condition Measurements Over Typical Time Warranty Periods, *Transportation Research Board 86<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 07-0325, Washington D.C., Jan. 21 – 25.
2. **Zech, W.C.** and Mohan, S. (2005). Priority Scheduling of Urban Rehabilitation Streets to Minimize Congestion, Delays, and Accidents, *ASCE Construction Research Congress 2005*, San Diego, CA, April 5-8.
1. Bowman, B.L., Paullk, R.W.\*., and **Zech, W.C.** (2005). Analysis of Cross-Median Crashes on Divided Partial Control of Access Arterials for the State of Alabama, *Transportation Research Board 84<sup>th</sup> Annual Meeting Compendium of Papers (CD-ROM)*, Paper No: 05-1691, Washington D.C., Jan. 9-13.

**Technical / Final reports submitted to funding agencies:**

17. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2018). Evaluation of Sediment Barrier Practices using Large-Scale Testing Techniques, Final Comprehensive Report [Project Number 930-896] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
16. Perez, M.A., **Zech, W.C.**, and Fang, X. (2016). Final Report: Evaluation of Inlet Protection Practices using Large-Scale Testing Techniques [ALDOT Project 930-853R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
15. Perez, M.A., **Zech, W.C.**, and Fang, X. (2016). Final Report: Evaluation of Inlet Protection Practices using Large-Scale Testing Techniques [ALDOT Project 930-853R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
14. Vasconcelos, J.G., **Zech, W.C.**, Moore, M.F., Butler, C.G., and Zhengqing, C. (2016). Final Report: Monitoring the Effects of Birmingham Northern Beltline Construction in the Little Cahaba Creek Watershed [ALDOT Project 930-837R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
13. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Final Comprehensive Report, Research Report No. 7, [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
12. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Performance Criteria Report, Research Report No. 6, [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
11. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Evaluation of a Stacked Wattle Installation Configuration over Poorly Graded Sand, Research Report No. 5 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
10. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Evaluation of Silt Fence Ditch Checks over Poorly Graded Sand, Research Report No. 4 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
9. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Evaluation of Sand Bag Ditch Checks over Poorly Graded Sand, Research Report No. 3 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
8. **Zech, W.C.**, Fang, X., and Donald, W.N. (2014). Evaluation of ALDOT Class 1 Riprap w/8 oz. Nonwoven Filter Fabric Choker Ditch Check over Poorly Graded Sand, Research Report No. 2 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
7. **Zech, W.C.**, and Fang, X. (2012). Evaluation of Various Wattle Installation Configurations using a 20 in. Wheat Straw Wattle over Poorly Graded Sand, Research Report No. 1 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
6. **Zech, W.C.**, Fang, X., and Logan, C.P.\*. (2012). State-of-the-Practice: Evaluation of Sediment Basin Design, Construction, Maintenance, and Inspection Procedures, Research Report No. 1 [Project Number 930-791] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
5. **Zech, W.C.**, Fang, X, and Donald, W.N.\*. (2012). Evaluation of Various Wattle Installation Configurations using 20 in. Wheat Straw Wattle over Poorly Graded Sand, Research Report No. 1 [Project Number 930-826R] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.

4. **Zech, W.C.** and Clement, T.P. (2012). *Development of a Test Facility to Evaluate the Optimal Design of BMPs for Managing Environmental Problems at Construction Sites*, Final Report [Project Number 930-655] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
3. **Zech, W.C.** and Turochy, R.E. (2011). Auburn University Transportation Final Report, Federal Transit Administration.
2. **Zech, W.C.**, Abbas, H.H., and Flowers, J. (2009). – *State-of-the-Practice: Rapid Bridge Deck Replacement Construction Techniques*, Research Report No. 1 [Project Number 930-725] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.
1. **Zech, W.C.**, Crowley, L.G., and Bailey, C.B. (2008). *Development of a Procedure for Updating Liquidated Damage Rates used in ALDOT's Construction Contracts*, Final Report [Project No. 930-656] to Alabama Department of Transportation, Highway Research Center, Auburn, AL 36849.

**Paper Presentations or Invited Lectures.**

Note: \* indicates student contributions.

† indicates presenter.

**Invited lectures:** (50 total invitations – 17 national / 25 state / 8 local level lectures):

Note: 1. \* indicates student contributions.  
2. † indicates presenter.

**National level lectures (17 invitations):**

17. Zech, W.C.†, Whitman, J.B.\*, and Donald, W.N. (2018) *Improvements in silt fence installations determined through full-scale testing*, International Erosion Control Association Live Webinar Series, September 19.
16. Basham, D.L.†\* and Zech, W.C. (2017). International Erosion Control Association Webinar, *An Introduction to UAVs as a Tool for Erosion and Sediment Control Site Inspections*, October 4.
15. Zech, W.C.†, Donald, W.N., Perez, M.A., and Fang, X. (2017). FHWA Local Public Agencies (LPA) Peer Exchange Webinar, *Evaluating Erosion and Sediment Controls for Stormwater Pollution Prevention Plans*, April 19.
14. Zech, W.C.†, Perez, M.A.\*, Donald, W.N., and Fang, X. (2016). AASHTO Subcommittee on Construction Annual Conference, *Evaluating Storm Water Control for SWPPPs*, Big Sky, MT, August 18.
13. Perez, M.A.\*†, Zech, W.C., and Donald, W.N. (2015). 17th Annual EPA Region 6 Stormwater Conference, *The Use of Unmanned Aerial Systems (a.k.a. Drones) in Construction Site Erosion and Sediment Control Inspections*, Hot Springs, AR, Oct. 22.
12. Zech, W.C., Donald, W.N., and Perez, M.A.\*† (2015). 17th Annual EPA Region 6 Stormwater Conference, *Evaluation and Enhancements of Runoff Control Measures Using Large-Scale Techniques*, Hot Springs, AR, Oct. 21.
11. Perez, M.A.\*†, Zech, W.C., and Donald, W.N. (2015). International Erosion Control Association Webinar, "*It's a Bird, it's a Plane, it's a Drone!*": The Future of Erosion and Sediment Control Site Inspections, Online Webinar, Oct. 21.
10. Perez, M.A.\*, **Zech, W.C.**†, and Donald, W.N. (2015). IECA Roadshow, *The Use of Unmanned Aerial Systems (a.k.a. Drones) in Construction Site Erosion and Sediment Control Inspections*, Bella Vista, AR, August 27.
9. **Zech, W.C.**†, Donald, W.N., and Perez, M.A.\* (2015). IECA Roadshow, *Evaluation and Enhancements of Runoff Control Measures using Large-Scale Techniques*, Bella Vista, AR, August 27.
8. **Zech, W.C.**†, Bailey, C.\*, and Crowley, L.G. (2015). AASHTO Subcommittee on Construction Meeting, *Calculating Liquidated Damages Rates: Alabama DOT's Current Review Procedure*, Little Rock AK, Aug. 11.
7. Perez, M.A.\*†, Zech, W.C., Donald, W.N., and Fang, X. (2015). *Enhanced Inlet Protection Practices Developed through Large-Scale Testing*, 2nd Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference, Erosion & Sediment Control Session, Atlanta, GA. June 15.
6. Perez, M.A.\*†, Zech, W.C., and Donald, W.N. (2015). *Drones: The Future of Erosion and Sediment Control Site Inspections*, 2nd Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference, Erosion & Sediment Control Session, Atlanta, GA. June 15.

5. Perez, M.A.\* **Zech, W.C.**†, Donald, W.N., and Fang, X. (2015). IECA Webinar Series, *Evaluation of Inlet Protection Practices Using Large-Scale Testing Techniques*, Online Webinar, May 20.<sup>1</sup>
4. **Zech, W.C.**† (2014). Southeast Transportation Consortium Annual Meeting, *Auburn University Erosion and Sediment Control Test Facility*, GoToMeeting Presentation, Morgantown, WV, Oct. 22.
3. **Zech, W.C.**†, Donald, W.N.\*, and Clement, T.P. (2009). AASHTO Subcommittee on Construction Meeting. *Design and Construction of a Large-Scale Erosion and Sediment Control Testing Facility in Alabama*, Chicago, IL, Aug. 6.
2. Fulton, J.P.†, Wood, C.W., **Zech, W.C.**, and McDonald, T.P. (2008). *Variable-Rate Application: Research Shows Results*. Topcon Precision Agriculture Education Series, 2008 Farm Progress Show, Ames, IA. Aug. 26-27.
1. **Zech, W.C.**†, Bailey, C.\*, and Crowley, L.G. 2007 AASHTO Construction Conference. (2007). *Evaluation and Assessment of Liquidated Damages*, Biloxi, MS, July 31.

*State level lectures (25 invitations):*

25. Donald, W.N.†, **Zech, W.C.**, Perez, M.A., and Fang, X. (2017). Clear Water Alabama, *Erosion and Sediment Control Research at the AU-ESCTF*, Mobile, AL, November 1, 2017
24. Whitman, J.B.†, **Zech, W.C.**, Donald, W.N., Bugg, R.A., and Perez, M.A. (2017). Soil and Water Conservation Society Annual Meeting, *Performance Evaluation of Three Silt Fences Using a Full-Scale Testing Apparatus*, Birmingham, AL, June 9, 2017.
23. **Zech, W.C.**, Donald, W.N.†, Perez, M.A., and Bugg, R.A. (2017). ASCE Alabama Section Winter Meeting, Large Scale Runoff & Erosion Control Practices, Birmingham, AL. Mar. 2.
22. **Zech, W.C.**† (2016). 15<sup>th</sup> Annual Southern Company Contractor Safety Forum, *Smart Work Zones*, Montgomery, AL, September 14.
21. **Zech, W.C.**, Perez, M.A.\*†, Donald, W.N.†, Bugg, R.A.\*†, and Fang, X. (2016) Clear Water Alabama, *Auburn University Erosion and Sediment Control Research Update*, Madison, AL, August 24-25.
20. **Zech, W.C.**† (2015). Clear Water Alabama, *Auburn University Erosion and Sediment Control Research Update*, Tuscaloosa River Market, Tuscaloosa, AL, Sept. 2.
19. Perez, M.A.\*†, **Zech, W.C.**, and Donald, W.N. (2015). 58th Annual Transportation Conference, *Using Unmanned Aerial Vehicles (UAVs) to Conduct Site Inspections of Erosion and Sediment Control*, Advanced Technologies Technical Session, Montgomery, AL, Feb. 10.
18. **Zech, W.C.**†, Donald, W.N., and Perez, M.A.\* (2015). Dothan Chapter of the American Society of Civil Engineers Meeting, *Current & Ongoing Research: Auburn University Erosion & Sediment Control Testing Facility*, Dothan, AL, June 10.
17. Donald, W.N.† and **Zech, W.C.** (2014). Auburn University Erosion and Sediment Control Testing Facility, Clear Water Alabama, Mobile, AL, Oct. 8.
16. **Zech, W.C.**† (2014). Alabama Department of Transportation (ALDOT) Construction and Materials Engineers' Conference, *Temporary Traffic Control for Inspectors: New Online Course*, Point Clear, AL, Sept. 3.
15. **Zech, W.C.**† (2014). Alabama Technology Transfer Center Seminar, *Assessing the Performance of Sediment Basins*, Innovative Erosion & Sediment Control Research & Field Day, Auburn, AL, May. 29-30.
14. Perez, M.A.\*†, **Zech, W.C.**, Donald, W.N., and Fang, X. (2014). Alabama Technology Transfer Center Seminar, *Inlet Protection Practice Evaluations and Improvements*, Innovative Erosion & Sediment Control Research & Field Day, Auburn, AL, May 29-30.
13. **Zech, W.C.**† (2014). 57<sup>th</sup> Annual Transportation Conference, *Lessons Learned from the Large-Scale Erosion and Sediment Control Testing Facility*, Stormwater Runoff Control Technical Session, Montgomery, AL, Feb. 12.
12. **Zech, W.C.**† (2013). IECA Roadshow, *Auburn University Erosion & Sediment Control Test Facility (AU-ESCTF): Current and Ongoing Research Projects*. Clear Water Alabama 2013, Birmingham, AL Oct. 9.

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<sup>1</sup> I was invited by IECA Region 1 to give this webinar that was based upon the presentation I gave at the 15th Annual International Erosion Control Association (IECA) Environmental Connection Conference in Portland, OR. on February 18, 2015 in which I was award the 2015 IECA Presenter of the Year award.

11. Donald, W.N.\* **Zech, W.C.**†, and Fang, X. (2012). Central Georgia Erosion Control & Stormwater Quality Workshop, *Evaluating Ditch Check Practices using Large-scale Testing Techniques*, Griffin, GA, Oct. 9.
10. Wilson, W.T.\* **Zech, W.C.**†, and Clement, T.P. (2012). Alabama-Georgia-Florida Annual Meeting: Water Conservation, Not Water Wars: A Tri-State Perspective, *Evaluation of Hydromulch as an Erosion Control Measure using Intermediate-Scale Experimental Procedures*, Eufaula, AL, May 25.
9. **Zech, W.C.**† (2011). Clear Water Alabama/IECA Roadshow, *Auburn University Erosion and Sediment Control Facility (AU-ESCTF)*, Birmingham, AL, Aug. 24.
8. Donald, W.N.\*† and **Zech, W.C.** (2010). 53<sup>rd</sup> Annual Transportation Conference. *Design and Construction of a Large-Scale Erosion and Sediment Control Testing Facility in Alabama*, Montgomery, AL, Feb. 23.
7. **Zech, W.C.**, Donald, W.N.\*†, and Clement, T.P. (2009). ALDOT Construction Engineering | Material Engineering Conference. *Design and Construction of a Large-Scale Erosion and Sediment Control Testing Facility in Alabama*, Montgomery, AL, Sept. 24.
6. **Zech, W.C.**†, Bailey, C.\*, and Crowley, L.G. (2009). 52<sup>nd</sup> Annual Transportation Conference. *Calculating Liquidated Damages Rates: ALDOT's Current Review Procedure*, Montgomery, AL, Feb. 2.
5. Fulton, J.P.†, Wood, C.W., **Zech, W.C.**, and McDonald, T.P. (2008). *Precision Agriculture technologies: Research Shows Results*. Topcon Precision Agriculture Education Series, 2008 Sunbelt Ag Expo, Moultrie, GA. Oct. 15-16.
4. **Zech, W.C.**† (2007). 50<sup>th</sup> Annual Transportation Conference. *Personal Protective Equipment in Highway Construction*, Auburn, AL, Feb. 21.
3. **Zech, W.C.**† (2006). Alabama Struck By Alliance Committee Meeting. *Evaluation of Active Speed Controls in Highway Work Zones*, Auburn, AL, May 11.
2. **Zech, W.C.**†, Halverson, J.L.\* , and Clement, T.P. (2006). 49<sup>th</sup> Annual Transportation Conference. *Design of BMPs for Managing Environmental Problems at Highway Construction Sites*, Auburn, AL, Feb. 23.
1. **Zech, W.C.**† (2004). Alabama Section Institute of Transportation Engineers. *Evaluation of Active Speed Controls in Highway Work Zones*, Gulf Shores, AL, June 10.

*Local level lectures (8 invitations):*

8. Perez, M.A.\*†, **Zech, W.C.**, Donald, W.N., and Fang, X. (2016). *SEDspread Construction Site Sediment Basin Design Tool*, USDA-NRCS Lunch and Learn, Auburn, AL, Sept. 21.
7. Donald, W.N.†, **Zech, W.C.**, Perez, M.A.\* , and Fang, X. (2016). ALDOT and City of Mobile MS4 Lunch and Learn for Contractors, Engineers, and Construction Professionals, *Evaluation and Enhancement of Runoff Control Practices using Large-Scale Testing Techniques*, Mobile, AL, July 25.
6. **Zech, W.C.**†, Donald, W.N.†, and Perez, M.A.\*† (2014). City of Auburn Erosion & Sediment Control Workshop, *Current & Ongoing Research: Auburn University Erosion & Sediment Control Testing Facility*, Auburn, AL, Dec. 11.
5. **Zech, W.C.**†, Donald, W.N.†, and Perez, M.A.\*† (2014). City of Auburn Erosion & Sediment Control Workshop, *Current & Ongoing Research: Auburn University Erosion & Sediment Control Testing Facility*, Auburn, AL, Dec. 11.
4. **Zech, W.C.**† (2012). American Society of Agricultural and Biological Engineers (ASABE) Alabama Section Meeting, *Field Tour of the Auburn University Erosion and Sediment Control Testing Facility (AU-ESCTF) and Large-scale Experiment Demonstration*, April 13.
3. **Zech, W.C.**† (2009). Gas Technology Institute | Auburn University Meeting. *Department of Civil Engineering Construction Engineering and Management*, Auburn, AL, Dec. 16.
2. **Zech, W.C.**†, McDonald, J.\* , and Clement, T.P. (2008). Alabama Chapter Soil and Water Conservation Society Annual Meeting. *Application of J-Hook Design for Sediment Control on Interstate 85 Exit 57 Project*. Auburn, AL, June 12.
1. **Zech, W.C.**†, Shoemaker, A.\* , and Turochy, R.E. (2008). Auburn University Pedestrian Committee Meeting. *West Samford Avenue Traffic Calming Study: The Effect of Speed Tables on Vehicles and Pedestrians*, March 6.

***Paper presentations at professional meetings:***

78. Basham, D.L., **Zech, W.C.**, and Donald, W.N. (2019). Evaluating Sediment Removal Efficiency of Catch Basin Inserts (CBI) as a Post-Construction Water Quality Tool for Ohio Roadways, IECA Annual Conference, Denver, CO. Denver Colorado: International Erosion Control Association, February 20.

77. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2019). Full-Scale Performance Evaluations of Innovative and Manufactured Sediment Barrier Practices, IECA Annual Conference, Denver, CO. Denver Colorado: International Erosion Control Association, February 20.

76. Basham, D.L., **Zech, W.C.**, and Donald, W.N. (2019). Evaluating Sediment Removal Efficiency of Catch Basin Inserts as a Post-Construction Water Quality Tool for Ohio Roadways, Transportation Research Board 98<sup>th</sup> Annual Meeting, TRB Paper No. 19-04777, Lectern Session 1458: Research and Innovative BMPs for Stormwater, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 15.

75. Whitman, J.B., **Zech, W.C.**, and Donald, W.N. (2019). Full-Scale Performance Evaluations of Innovative and Manufactured Sediment Barrier Practices, Transportation Research Board 98<sup>th</sup> Annual Meeting, TRB Paper No. 19-00377, Lectern Session 1458: Research and Innovative BMPs for Stormwater, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 15.

74. Basham, D.A.\* , Zech, W.C.†, and Donald, W.N. (2018). Evaluating Sediment Removal Efficiency of Catch Basin Inserts (CBIs) as a Post-Construction Water Quality Tool for Ohio Roadways. 2018 National Hydraulic Engineering Conference (NHEC), Stormwater Management 3, Columbus, OH, August 30.

73. Zech, W.C.†, Donald, W.N., Perez, M.A., Fang, X., and Whitman, J.B.\* (2018) Evaluating Stormwater Controls for Stormwater Pollution Prevention Plans. 2018 National Hydraulic Engineering Conference, Stormwater Management 3, Columbus, OH, August 30.

72. Whitman, J.B., Zech, W.C.†, and Donald, W.N. (2018). Full-Scale Performance Evaluations of Various Non-Woven, Wire Backed Silt Fence Installation Configurations, 4th Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference, Erosion & Sediment Control Session, Atlanta, GA. May 22.

71. Basham, D.L. †\*, Zech, W.C., Donald, W.N., and Perez, M.A. (2018). Design and Construction of a Large-scale Testing Apparatus for Evaluating the Performance of Catch Basin Inserts, 4th Annual U.S. EPA Region 5 – International Erosion Control Association (IECA) Southeast Chapter Municipal Wet Weather Stormwater Conference, Erosion & Sediment Control Session, Atlanta, GA. May 22.

70. Basham, D.A. †\*, **Zech, W.C.**, Donald, W.N., and Perez, M.A. (2018). Design and Construction of a Catch Basin Insert Testing Apparatus for Performance Evaluation, IECA Annual Conference 2018, Long Beach, CA. Denver Colorado: International Erosion Control Association, February 11-14, 2018.

69. Perez, M.A.†, Donald, W.N., **Zech, W.C.**, and Fang, X. (2018). Sizing Sediment Basins for Site-Specific Conditions, IECA Annual Conference 2018, Long Beach, CA. Denver Colorado: International Erosion Control Association, February 11-14.

68. Whitman, J. †\*, Donald, W.N., **Zech, W.C.**, and LaMondia, J.J. (2018). Full-Scale Performance Evaluations of Various-Woven, Wire Backed Silt Fence Installation Configurations, IECA Annual Conference 2018, Long Beach, CA. Denver Colorado: International Erosion Control Association, February 11-14.

67. Rogers, T.M. †\*, **Zech, W.C.**, Shambley, J., Donald, W.N., and Rueda-Benavides, J. (2018). Transportation Research Board 97<sup>th</sup> Annual Meeting, State of the Practice for Liquidated Damages on High-Value Contract Projects, TRB Paper No.: 18-01271, Poster Session 315: Frontier of Transportation Construction Management Research and Practice, Standing Committee on Construction Management (AFH10), Washington, D.C., Jan. 8.

66. Basham, D.L. †\*, **Zech, W.C.**, Donald, W.N., and Perez, M.A. (2018). Transportation Research Board 97<sup>th</sup> Annual Meeting, Design and Construction of a Large-Scale Testing Apparatus for Evaluating the Performance of Catch Basin Inserts, TRB Paper No.: 18-01527, Lectern Session 273: Performance Testing of Construction and Postconstruction Erosion Control Best Management Practices, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 8.

65. Horne, M.A.<sup>†\*</sup>, **Zech, W.C.**, Fang, X., Donald, W.N., and Perez, M.A. (2018). Transportation Research Board 97<sup>th</sup> Annual Meeting, Design and Construction of a Pressurized Rainfall Simulator for Performance-Based Testing of Erosion-Control Practices, TRB Paper No.: 18-01268, Lectern Session 273: Performance Testing of Construction and Postconstruction Erosion Control Best Management Practices, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 8.

64. Whitman, J.B.<sup>†\*</sup>, **Zech, W.C.**, Donald, W.N., and LaMondia, J.J. (2018). Transportation Research Board 97<sup>th</sup> Annual Meeting, Full-Scale Performance Evaluations of Various Wire-Backed Nonwoven Silt Fence Installation Configurations, TRB Paper No.: 18-01215, Lectern Session 273: Performance Testing of Construction and Postconstruction Erosion Control Best Management Practices, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 8.

63. Perez, M.A.<sup>†\*</sup>, **Zech, W.C.**, Vasconcelos, J. and Fang, X. (2018). Transportation Research Board 97<sup>th</sup> Annual Meeting, Large-Scale Performance Testing of Temporary Sediment Basin Treatments and High-Rate Lamella Settlers, TRB Paper No.: 18-00486, Lectern Session 273: Performance Testing of Construction and Postconstruction Erosion Control Best Management Practices, Standing Committee on Stormwater (AFB65), Washington, D.C., Jan. 8.

62. Perez, M.A.<sup>†\*</sup>, Donald, W.N.<sup>†</sup>, **Zech, W.C.**, and Fang, X. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, SEDspread: Sediment Basin Design Tool for Construction Sites, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. February 24.

61. Perez, M.A.<sup>†\*</sup>, **Zech, W.C.**, Donald, W.N., and Fang, X. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Large-Scale Performance Evaluations of High Rate Lamella Settlers in Sediment Basin Applications, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. February 24.

60. Whitman, J.B.<sup>†\*</sup>, Bugg, R.A., **Zech, W.C.**, and Donald, W.N. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluation of Sediment Barriers (SBs) Using Large-Scale Testing Techniques, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. February 24.

59. Horne, M.A.<sup>†\*</sup>, **Zech, W.C.**, Fang, X., and Donald, W.N. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Design and Construction of a Rainfall Simulator for Large-Scale Testing of Erosion Control Practices, Poster Session, Atlanta, GA. February 23.

58. Basham, D.L.<sup>†\*</sup>, **Zech, W.C.**, Donald, W.N. and Perez, M.A. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluating the Use and Effectiveness of Unmanned Aerial Vehicles for Surveying and Mapping of Stock Pile Volumes, Poster Session, Atlanta, GA. February 23.

57. Horne, M.A.<sup>†\*</sup>, **Zech, W.C.**, Donald, W.N., and Fang, X. (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Design and Construction of a Variable Intensity Rainfall Simulator for Large-Scale Testing of Rolled Erosion Control Products, Erosion & Sediment Control (TS-6) Session, Atlanta, GA. February 22.

56. **Zech, W.C.**<sup>†</sup>, Perez, M.A.<sup>†\*</sup>, and Donald, W.N.<sup>†</sup> (2017). 17<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference. Research Showcase at the AU-Erosion and Sediment Control Testing Facility, Pre-Conference Workshop, Opelika, AL. February 21.

55. Bugg, R.A.<sup>†\*</sup>, Donald, W.N., **Zech, W.C.**, Perez, M.A. (2017). Transportation Research Board 96th Annual Meeting, Performance Evaluation of Three Silt Fences Using a Full-Scale Testing Apparatus, TRB Paper No.: 17-06419, Session 708: Solutions for Improved Water Quality, Hydrology, Hydraulics and Water Quality Committee (AFB60), Washington, D.C., Jan. 10.

54. Baratian, F.<sup>†\*</sup>, Zhou, H., and **Zech, W.C.** (2017). Transportation Research Board 95th Annual Meeting, Red-Light-Running Traffic Violations: Novel Time-Based Method for Determining a Fine Structure, TRB Paper No.: 16-00889, Poster Session 351: Transportation Issues and Solutions in Major Cities, Transportation Issues in Major Cities (ABE30), Washington, D.C., Jan. 9.

53. Perez, M.A.<sup>†\*</sup>, **Zech, W.C.**, Donald, W.N., Turochy, R.E., and Fagan, B. (2017). Transportation Research Board 96th Annual Meeting, Transferring Innovative Research Results into Industry Practice at the Auburn University - Erosion and Sediment Control Testing Facility, TRB Paper No.: 17-00013, Technology Transfer Committee Meeting, Standing Committee on Technology Transfer (ABG30), Washington, D.C., Jan. 9.

52. **Zech, W.C.**, Donald, W.N., Fang, X.<sup>†</sup>, and Perez, M.A.\* (2016). International Low Impact Development Conference, Evaluation and Enhancements of Stormwater Runoff Control Measures using Large-Scale Testing Techniques, Beijing, China, Jun. 29.

51. Perez, M.A.\* **Zech, W.C.**, Fang, X., Vasconcelos, J., and Donald, W.N.<sup>†</sup> (2016). Alabama Stormwater Symposium, The Development of SEDspread: A Hydrologically Robust Construction Site Sediment Basin Design Tool, Auburn University, AL, May 11.

50. Bugg, R.A.\* **Zech, W.C.**<sup>†</sup>, and Donald, W.N. (2016). Alabama Stormwater Symposium, Evaluation of Sediment Barriers (SBs) using Large-scale Testing Techniques, Auburn University, AL, May 11.

49. Donald, W.N.<sup>†</sup>, Perez, M.A.\* **Zech, W.C.**, and Fang, X. (2016). Alabama Stormwater Symposium, Evaluation and Enhancements of Runoff Control Measures using Large-scale Techniques, Auburn University, AL, May 11.

48. Perez, M.A.\* **Zech, W.C.**<sup>†</sup>, and Donald, W.N. (2016). Alabama Stormwater Symposium, The Use of Unmanned Aerial Vehicles (A.K.A. Drones) in Construction Site Erosion & Sediment Control Inspections, Auburn University, AL, May 11.

47. Horne, M.A.<sup>†\*</sup> **Zech, W.C.**, Fang, X., and Donald, W.N. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Design and Construction of a Rainfall Simulator for Large-scale Testing of Erosion Control Practices, Poster Session, San Antonio, TX. Feb. 18.

46. Bugg, R.A.<sup>†\*</sup> **Zech, W.C.**, and Donald, W.N. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluations of Sediment Barriers (SBs) using Large-scale Testing Techniques, Poster Session, San Antonio, TX. Feb. 18.

45. Perez, M.A.<sup>†\*</sup> **Zech, W.C.**, Fang, X., and Vasconcelos, J. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, The Development of SEDspread: A Hydrologically Robust Construction Site Sediment Basin Design Tool, Poster Session, San Antonio, TX. Feb. 18.

44. Perez, M.A.<sup>†\*</sup> **Zech, W.C.**, Fang, X., and Vasconcelos, J. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Large-scale Performance Enhancement Study of Sediment Basin Technology, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 17 & 19.

43. Perez, M.A.\* **Zech, W.C.**<sup>†</sup>, Donald, W.N., and Fang, X. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Performance Comparisons of Construction Inlet Protection Practice (IPP) using Large-Scale Testing, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 17 & 19.

42. Bugg, R.A.<sup>†\*</sup> **Zech, W.C.**, and Donald, W.N. (2016). 16th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluations of Sediment Barriers (SBs) using Large-scale Testing Techniques, Erosion & Sediment Control (TS-6) Session, San Antonio, TX. Feb. 17 & 19.

41. Perez, M.A.<sup>†\*</sup> **Zech, W.C.**, Fang, X., and Vasconcelos, J. (2016) Transportation Research Board 95<sup>th</sup> Annual Meeting, Methodology and Development of Large-Scale Sediment Basin for Performance Testing, TRB Paper No.: 16-0012, Lectern Session 686: Solutions to Improved Highway Runoff Water Quality, Hydrology, Hydraulics and Water Quality Committee (AFB60), Washington, D.C., Jan. 12.

40. Perez, M.A.<sup>†\*</sup> **Zech, W.C.**, Fang, X., and Donald, W.N. (2016) Transportation Research Board 95<sup>th</sup> Annual Meeting, Development of SEDspread: Robust Construction Site Sediment Basin Design Tool, TRB Paper No.: 16-2559, Poster Session 586: Soil Erodibility and Sediment Basins and Barriers, Hydrology, Hydraulics and Water Quality Committee (AFB60), Washington, D.C., Jan. 12.

39. Bugg, R.A.\* Donald, W.N., **Zech, W.C.**<sup>†</sup>, and Perez, M.A.\* (2016). Transportation Research Board 95<sup>th</sup> Annual Meeting, Design and Construction of a Large-scale Test Apparatus for Sediment Barrier Performance Evaluations, TRB Paper No.: 16-2360, Poster Session 586: Soil Erodibility and Sediment Basins and Barriers, Hydrology, Hydraulics and Water Quality Committee (AFB60), Washington, D.C., Jan. 12.

38. Donald, W.N.<sup>†</sup>, **Zech, W.C.**, Fang, X., and Perez, M.A.\* (2015). 2<sup>nd</sup> Annual Municipal Wet Weather Stormwater Conference, Traditional Ditch Check Installation Improvements, Atlanta, GA. June 16.

37. Bugg, R.A.<sup>†\*</sup> **Zech, W.C.**, and Donald, W.N. (2015). 2<sup>nd</sup> Annual Municipal Wet Weather Stormwater Conference, Design and Construction of a Large-Scale Test Apparatus for the Evaluation of Sediment Barriers, Atlanta, GA. June 15.

36. Perez, M.A.\* **Zech, W.C.**†, Donald, W.N., and Fang, X. (2015). 2<sup>nd</sup> Annual Municipal Wet Weather Stormwater Conference, Enhancement of Inlet Protection Practice (IPP) Installations using Large-Scale Testing Techniques, Atlanta, GA. June 15.<sup>2</sup>

35. Perez, M.A.†\*, **Zech, W.C.**, and Donald, W.N. (2015). 2<sup>nd</sup> Annual Municipal Wet Weather Stormwater Conference, "Drones": The Future of Erosion and Sediment Control Site Inspections, Atlanta, GA. June 15.

34. Perez, M.A.\* **Zech, W.C.**†, Donald, W.N., and Fang, X. (2015). 15th Annual International Erosion Control Association (IECA) Environmental Connection Conference, Enhancement of Inlet Protection Practice (IPP) Installations using Large-Scale Testing Techniques, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 18.

33. Donald, W.N.†, **Zech, W.C.**, Fang, X., and Perez, M.A.\* (2015). 15<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Using Hydraulic Performance to Characterize Ditch Check Practices, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 16 & 18.

32. Perez, M.A.†\*, **Zech, W.C.**, and Donald, W.N. (2015). 15<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, "Drones": Revolutionizing Erosion and Sediment Control Site Inspections, Erosion & Sediment Control (TS-6) Session, Portland, OR. Feb. 16.

31. Donald, W.N.†\*, **Zech, W.C.**, and Fang, X. (2014). 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluation of Ditch Check Practices: Part 2 – Comparative Performance Evaluation of Improved Practices. Erosion & Sediment Control Session, Nashville, TN. Feb. 27.

30. Donald, W.N.\* **Zech, W.C.**†, and Fang, X. (2014). 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluation of Ditch Check Practices: Part 1 – Improvements to Commonly Used Practices, Erosion & Sediment Control Session, Nashville, TN. Feb. 27.

29. Perez, M.A.†\*, **Zech, W.C.**, Donald, W.N.\* , and Fang, X. (2014). 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluation of Inlet Protection Practices using Large Scale Testing Techniques, Erosion & Sediment Control Session, Nashville, TN. Feb. 27.

28. Fang, X., **Zech, W.C.**†, and Logan, C.P.\* (2014). 14<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Assessing the Performance of a Sediment Basin at a Construction Site in Franklin County, Alabama, Erosion & Sediment Control Session, Nashville, TN. Feb. 27.

27. Perez, M.A.†\*, **Zech, W.C.**, Donald, W.N.\* , and Fang, X. (2014). Transportation Research Board 93<sup>rd</sup> Annual Meeting, Methodology Development for Evaluating Inlet Protection Practices (IPPs) Using Large-Scale Testing Techniques, Paper No: 14-4664, Lectern Session 816: Hydraulic Analysis of Scour for Bridge and Inlet Protection Applications, Hydrology, Hydraulics and Water Quality Committee(AFB60), Washington, D.C., Jan. 15.

26. Donald, W.N.\* **Zech, W.C.**†, and Fang, X. (2014). Transportation Research Board 93<sup>rd</sup> Annual Meeting, Comparative Evaluation of Wattle Ditch Checks Comprised of Differing Materials and Properties, Paper No: 14-4422, Poster Session 769: Hydraulics and Water Quality in the Roadway Environment, Hydrology, Hydraulics and Water Quality Committee(AFB60), Washington, D.C., Jan. 15.

25. Donald, W.N.†\*, **Zech, W.C.**, and Fang, X. (2013). 13<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Comparative Evaluation of Wattle Ditch Checks Comprised of Differing Materials and Properties, Erosion & Sediment Control (TS-6) Session, San Diego, CA, Feb. 12.

24. Donald, W.N.†\*, **Zech, W.C.**, Fang, X. and LaMondia, J.J. (2013). Transportation Research Board 92<sup>nd</sup> Annual Meeting, Ditch Check Installation Evaluations of Wheat Straw Wattles Used for Velocity Reduction, Paper No.: 13-3268, Lectern Session 565: Green Highway Design for Water, Hydrology, Hydraulics and Water Quality Committee(AFB60), Washington, D.C., Jan. 15.

23. **Zech, W.C.**†, Logan, C.P.\* , and Fang, X. (2013). Transportation Research Board 92<sup>nd</sup> Annual Meeting, State of the Practice: Evaluation of Sediment Basin Design, Construction, Maintenance, and Inspection Procedures, Paper No: 13-1528, Poster Session 600 - Earthwork Construction Best Practices for Production and Environmental Control, Transportation Earthworks Committee (AFS10), Washington, D.C., Jan. 15.

<sup>2</sup> 2015 IECA Speaker of the Year Presentation

22. Donald, W.N.\*, **Zech, W.C.**, and Fang, X.† (2012). Evaluating Channelized Flow Sediment Control Practices Using Large-Scale Testing Techniques. Proceeding (CD-ROM) for 2012 World Environmental and Water Resources Congress, Albuquerque, NM, May 20-24.
21. Donald, W.N.†\*, **Zech, W.C.**, and Fang, X. (2012). 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Auburn University's Testing Facility for Evaluating Channelized Flow Sediment Control Practices, Erosion & Sediment Control (TS-6) Session, Las Vegas, NV. Feb. 27 & 28.
20. Todd, D.A.† and **Zech, W.C.**† (2012). 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Polymer-Enhanced Soft Armoring of Construction Slopes: From Research to Engineering, Erosion & Sediment Control (TS-6) Session, Las Vegas, NV. Feb. 27 & 28.
19. Wilson, W.T.\*, **Zech, W.C.**†, and Clement, T.P. (2012). 12<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Evaluation of Hydromulch as an Erosion Control Measure using Intermediate-Scale Experimental Procedures, Erosion & Sediment Control (TS-6) Session, Las Vegas, NV. Feb. 27 & 28.
18. Wilson, C.R.\*, Turochy, R.E.†, **Zech, W.C.**, and LaMondia, J.J.† (2012). Transportation Research Board 91<sup>st</sup> Annual Meeting, Bicycle Parking Demand Models Development and Evaluation in a University Setting, TRB Paper No: 12-1710, Session 539: Bicycle Planning and the Built Environment, Washington, D.C., Jan. 24.
17. Watts, M.Y.\*, **Zech, W.C.**†, Turochy, R.E., Holman, D.\*, and LaMondia, J.J. (2012). Transportation Research Board 91<sup>st</sup> Annual Meeting, Effects of Vehicle Volume and Lane Closure Length on Construction Road User Costs in Rural Areas, Paper No: 12-1217, Session 236: Construction Management: Selected Research Topics, Washington, D.C., Jan. 23.
16. Dougherty, M.†, Messer, C.\*, Guertal, B., Norton, E., and **Zech, W.C.** (2011). 11<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Establishing, Monitoring, and Maintaining Common Bermudagrass on Steep Slopes in Alabama, Erosion & Sediment Control (TS-6) Session, Orlando, FL. Feb. 21.
15. Wilson, W.T.\*, **Zech, W.C.**†, Clement, T.P. and Shoemaker, A.\* (2010). 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Polymer-Enhanced Soft Armoring: An Erosion and Sediment Control Measure for Construction Fill Slopes, Erosion & Sediment Control (TS-6) Session, Dallas, TX, Feb. 19.
14. Dougherty, M.†, Baharanyi, A.\*, Guertal, B., Grace III, J., **Zech, W.C.**, LeBleu, C., and Norton, E. (2010). 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Techniques for Establishing Vegetation for Long-term Erosion Control on Disturbed Slopes in Alabama, Erosion & Sediment Control (TS-6) Session, Dallas, TX, Feb. 19.
13. Donald, W.N.†\*, **Zech, W.C.**, Clement, T.P. (2010). 10<sup>th</sup> Annual International Erosion Control Association (IECA) Environmental Connection Conference, Development of a Large-Scale Erosion and Sediment Control Testing Facility, Erosion & Sediment Control (TS-6) Session, Dallas, TX, Feb. 18.
11. Flowers, J. N.†\*, **Zech, W.C.**, and Abbas, H.H. (2010). Transportation Research Board 89<sup>th</sup> Annual Meeting. State-of-the-Practice: Rapid Bridge Deck Replacement Construction Techniques, Paper No: 10-1398, Lectern Session 477: Innovative Developments in Bridge Construction Engineering, Construction of Bridges and Structures Committee (AFH40), Washington, D.C., Jan. 12.
10. Sharda, A.\*, Fulton, J.P.†, McDonald, T.P., Darr, M., **Zech, W.C.**, and Brodbeck, C. (2009). Real-Time Sprayer Boom Dynamics when Using Auto-Swath Technology. Agricultural Equipment Technology Conference, Technical Session, Louisville, KY. Feb. 8-11.
9. Mullenix, D.\*, Campbell, C.M.\*., Fulton, J.P.†, Wood, C.W., **Zech, W.C.**, McDonald, T.P., and Crowley, L. (2009). Evaluation of Spinner-Disc Speed Control for Variable-Rate Application. Agricultural Equipment Technology Conference, Technical Session, Louisville, KY. Feb. 8-11.
8. **Zech, W.C.**†, Walker, D.L.\*., Turochy, R.E., Shoemaker, A.\*., Hool, J. (2009). Transportation Research Board 88<sup>th</sup> Annual Meeting. Effectiveness of Speed Tables as a Traffic Calming Measure on a College Campus Street, Paper No: 09-2841, Poster Session 542: Traffic Control Devices, Traffic Control Devices Committee (AHB50), Washington, D.C., Jan. 13.

7. **Zech, W.C.**<sup>†</sup>, Stroup-Gardiner, M., and Rao, P.\* (2008). 10th International Conference on Applications of Advanced Technologies in Transportation (AATT 2008), Development of a Pavement Load Related Distress Prediction Model using Artificial Neural Networks, Poster Session: Interactive Session 2, Athens, Greece, May 28.
6. **Zech, W.C.**<sup>†</sup>, Bailey, C.\*, and Crowley, L.G. (2008). Transportation Research Board 87<sup>th</sup> Annual Meeting. Robust Determination of Liquidated Damage Rates for State Highway Agencies (SHAs), Paper No: 08-2332, Poster Session 238: Infrastructure Construction Management: New Research Results, Contract Law Committee (AL030), Washington, D.C., Jan. 14.
5. **Zech, W.C.**<sup>†</sup>, Halverson, J.L.\*, and Clement, T.P. (2007). Transportation Research Board 86<sup>th</sup> Annual Meeting. Development of a Silt Fence Tieback Design Methodology for Highway Construction Installations, TRB Paper No.: 07-1239, Poster Session 458: Environment and Energy, Environmental Analysis in Transportation Committee (ADC10), Washington, D.C., Jan. 23.
4. Stroup-Gardiner, M., **Zech, W.C.**<sup>†</sup>, and Rathod, J.\* (2007). Transportation Research Board 86<sup>th</sup> Annual Meeting. Changes in Key Flexible Pavement Condition Measurements over Typical Warranty Time Periods, Paper No: 07-0325, Poster Session 244: Current Issues and Challenges Facing Pavement Management Systems, Pavement Management Systems Committee (AFD10), Washington, D.C., Jan. 22.
3. Crowley, L.G., **Zech, W.C.**<sup>†</sup>, Bailey, C.\*, and Gujar, P.P.\* (2007). Transportation Research Board 86<sup>th</sup> Annual Meeting. Liquidated Damages: Review of Current State of the Practice, Paper No: 07-2407, Poster Session 241: Infrastructure Construction Management: New Research Results, Contract Law Committee (AL030), Washington, D.C., Jan. 22.
2. **Zech, W.C.**<sup>†</sup> and Mohan, S. (2005). ASCE Construction Research Congress. Priority Scheduling of Urban Rehabilitation Streets to Minimize Congestion, Delays, and Accidents, San Diego, CA, April 6.
1. Bowman, B.L.<sup>†</sup>, Pault, R.W.\* , and **Zech, W.C.**<sup>†</sup> (2005). Transportation Research Board 84<sup>th</sup> Annual Meeting. Analysis of Cross-Median Crashes on Non-Interstate Arterials with Divided Partial Control of Access in Alabama, Paper No: 05-1691, Poster Session 515: Safety Data, Analysis, and Evaluation, Safety Data, Analysis, and Evaluation Committee (ANB20), Washington, D.C., Jan. 11.

### **Grants and contracts.**

#### **Grants received:**

31. **Zech, W.C.** [PI], Donald, W.N., and Fang, X. Evaluation of ALDOT Erosion Control Practices using Rainfall Simulation [ALDOT 930-962], ALDOT, \$383,526.35, May 16, 2018 – May 15, 2020.
30. LaMondia, J.J., **Zech, W.C.** [co-PI], and Turochy, R.E.. Effects of Asphalt and Concrete Pavement Rehabilitation on Users and Businesses during Construction, National Asphalt Pavement Association (NAPA), \$80,000, Jan. 1, 2017 – Dec. 31, 2017.
29. **Zech, W.C.** [PI] and Donald, W.N. Means to Calculate Project Specific Liquidated Damages on ALDOT Projects Exceeding \$20 Million [ALDOT 930-932], ALDOT, \$142,446.06, Nov. 1, 2016 – Oct. 31, 2018.
28. **Zech, W.C.** [PI] and Donald, W.N. Catch Basin Inserts for Ohio Roadways. ODOT, \$320,568.84, Oct. 27, 2016 – Sept. 8, 2018.
27. Turochy, R.E. and **Zech, W.C.** [co-PI]. Analysis of Safety and Mobility Benefits of Queue Warning Systems In Alabama Work Zones [ALDOT 930-927], ALDOT, \$134,846.01, Jun. 17, 2016 – Mar. 16, 2018.
26. **Zech, W.C.** [PI], Montgomery, J. and Perez, M.A. Evaluation of Unmanned Aerial Vehicles (UAVs) for Use in Conducting Site Inspections and Tracking Project Progression, Auburn University Highway Research Center; \$39,000; Jan. 1, 2015 – Oct. 15, 2016.
25. **Zech, W.C.** [PI], Fang, X., and Donald, W.N. Design and Construction of Rainfall-Induced Large-Scale Erosion Control Plots at the Auburn University Erosion and Sediment Control Testing Facility, Auburn University Highway Research Center; \$35,000; Jan. 1, 2015 – Oct. 15, 2016.
24. **Zech, W.C.** [PI] and Donald, W.N. Evaluation of Sediment Barriers Using Large-Scale Techniques [ALDOT 930-869]. ALDOT, \$459,755.19, Sept. 25, 2014 – Mar. 30, 2018.
23. Vasconcelos, J.G., Fang, X. and **Zech, W.C.** [co-PI]. Evaluation of high-rate settling technology for sediment control in roadway construction sites [ALDOT 930-863], ALDOT, \$357,770.25, May 2, 2014 - June 1, 2016.

22. **Zech, W.C.** [PI] and Fang, X. Evaluation of Inlet Protection Practices using Large-Scale Testing Techniques [ALDOT Project 930-853R], ALDOT, \$336,550.04, May 1, 2013 - May 31, 2016.
21. Vasconcelos, J.G. and **Zech, W.C.** [co-PI]. Monitoring and Predicting the Effects of Post-construction Stormwater Runoff from Roadways in Watersheds [ALDOT 930-837R], ALDOT, \$228,561.81, Dec. 26, 2012 – Dec. 30, 2015.
20. Turochy, R.E. and **Zech, W.C.** [co-PI]. Characterization of Alabama Work Zone Crashes based on Work Zone Crash Records [ALDOT BELT SP07(906)], ALDOT, \$142,445.98, Jan. 13, 201313 - Dec. 31, 2014.
19. Fang, X. and **Zech, W.C.** [co-PI]. Testing and Improving Design Configurations of Sediment Basins, Highway Research Center, \$34,950, Nov. 7, 2013 - Aug. 31, 2014.
18. **Zech, W.C.** [PI] and Fang, X. Evaluation of ALDOT Ditch Check Sediment Control Practices using Large-Scale Testing Techniques [ALDOT 930-826R], ALDOT, \$336,101.63, May 17, 2012 - May 31, 2014.
17. Fang, X., **Zech, W.C.** [co-PI], and Clement, T.P. Assessing performance characteristics of sediment basins constructed in Franklin County [ALDOT 930-791], ALDOT, \$154,613, Aug. 10, 2010 - Aug. 30, 2012.
16. Dougherty, M., LeBleu, C., Guertal, E., and **Zech, W.C.** [co-PI]. Maintain Vegetation for Long-Term Erosion Control on Disturbed Slopes [ALDOT 930-784], \$42,050, May 20, 2010 – June 1, 2011.
15. Turochy, R.E. and **Zech, W.C.** [co-PI]. Analysis of Traffic Impacts for Rapid Bridge Deck Replacement Projects [ALDOT 930-749], ALDOT, \$116,038.56, July 9, 2009 - Jan. 31, 2011.
14. **Zech, W.C.** [PI] and Clement, T.P. Evaluating the Efficiency of Hydromulches used as Erosion Control Practices, Highway Research Center, \$40,000, Oct. 1, 2008 - Oct. 31, 2010.
13. **Zech, W.C.** [PI] and Bowman, B. Shrink and Swell Factors: A Review of the Current State-of-the-Practice in the Southeast, Highway Research Center, \$35,338, Oct. 1, 2008 - Oct. 31, 2010.
12. Zhao, D., Lee, M., and **Zech, W.C.** [co-PI]. A New Technology for Rapid and Enhanced Control of Erosion, Sediment, and Metal Leaching at Quarry Sites Using Nanoparticle-Modified Polymer Emulsions, Vulcan Materials Competitive Grants Program, \$30,000, Sept. 1, 2008 - Sept. 30, 2009.
11. Bowman, B.L. and **Zech, W.C.** [co-PI]. Plan Preparation Manual [ALDOT Contract ID #847], ALDOT, \$125,000, July 17, 2006 - June 14, 2010.
10. Abbas, H., **Zech, W.C.** [co-PI], Ramey, G.E., Schindler, A, and Barnes, R. Rapid Replacement of Bridge Decks – Phase III: Rapid Deck Replacement on I-59 Sister Test Bridge at Collinville, AL [ALDOT 930-725], ALDOT, \$396,000, Jan. 1, 2008 - Dec. 31, 2010.
9. Vecellio, R. and **Zech, W.C.** [co-PI]. Temporary Traffic Control for Inspectors, ALDOT, 20 training courses, \$44,500, Feb. 1, 2008 - Sept. 30, 2008.<sup>3</sup>
8. Dougherty, M., Guertal, B., Mitchell, C., Han, D., LeBleu, C., Grace, J., and **Zech, W.C.** [co-PI]. Techniques for Establishing Vegetation for Long-term Erosion Control on Disturbed Slopes (continued funding), Agriculture Initiative, Auburn University, \$60,658, Oct. 1, 2007 - Sept. 30, 2008.
7. Dougherty, M., Guertal, B., Mitchell, C., Han, D., LeBleu, C., Grace, J., and **Zech, W.C.** [co-PI]. Techniques for Establishing Vegetation for Long-term Erosion Control on Disturbed Slopes, Agriculture Initiative, Auburn University, \$81,581, Feb. 01, 2007 – Sept. 30, 2007.
6. **Zech, W.C.** [PI], and Turochy, R.E. Auburn University FTA Traffic and Parking Study, Federal Transit Administration, \$740,063 (\$320,581<sup>4</sup>), Nov. 1, 2002 - Oct. 30, 2011.
5. McDonald, T., **Zech, W.C.** [co-PI], and Gallagher, T. Revision of Biomass Harvest Cost Analyzer, USDA Forest Service, \$30,000, Oct. 1, 2006 - Dec. 31, 2007.
4. **Zech, W.C.** [PI] and Clement, T.P. Development of a Test Facility to Evaluate the Optimal Design of BMPs for Managing Environmental Problems at Construction Sites [ALDOT 930-655], ALDOT, \$500,498.23, Aug. 2, 2006 – Sept. 30, 2011.

<sup>3</sup> Also listed and explained under outreach activities. See section C.1.(a)–(d).

<sup>4</sup> Principal Investigator [PI] since January 2007. Total budgeted amount was \$750,000 with \$320,581 remaining in the contract when I assumed role as PI. Dr. Christine Curtis was PI on project prior to January 2007.

3. **Zech, W.C.** [PI] and Crowley, L.G. *A Review and Evaluation of ALDOT's Liquidated Damages Provision [ALDOT 930-646]*, ALDOT, \$108,071, April 1, 2006 - July 31, 2008.
2. Turochy, R.E. and **Zech, W.C.** [co-PI]. *Synthesis of Centerline Rumble Strip Practices and Policies*, Auburn University Highway Research Center; \$32,900; Jan. 1, 2005 – Dec. 31, 2005.
1. **Zech, W.C.** [PI]. *Optimizing Hauling Routes for Delivery of Construction Material in Urban Areas*, Contractor's License Fee Research Award, \$25,000, Oct.1, 2004 - May 31, 2007.

**Professional Service.**

Board Member, Education Vice President, International Erosion Control Assoc. (IECA) Board of Directors, [2016-present]

Panel Member, NCHRP Synthesis 20-05/Topic 46-16, [2014-2016].

Member, International Erosion Control Assoc. (IECA) Standards & Practices Committee, [2012-present].

Member, Subgroup of A10.47: Highway Construction Safety, American National Standards Institute [2008-present].

Committee Member, TRB Committee for Work Zone Traffic Control (AHB55), [2006-present].

Subcommittee Chair, TRB Committee AHB55's Best Paper Task Force, [2006, 2007, 2009-present].

Member, TRB Committee AHB55's Best Paper Task Force, [2005, 2008].

Reviewer, American Society of Agricultural and Biological Engineers (ASABE), [2008 – present]

Reviewer, TRB's Work Zone Traffic Control Committee (AHB55), [2005-present].

Reviewer, ASCE Journal of Construction Engineering and Management, [2005-present].

Reviewer, TRB's Safety Data, Analysis, and Evaluation Committee (ANB20), [2005-present].

Reviewed entire Wiley Higher Education Textbook entitled "*Construction Management*" by Halpin, D.W., 3<sup>rd</sup> ed., [2006].

Reviewed entire McGraw Hill Textbook entitled "*Construction Management Fundamentals*" by Schexnayder, C., and Mayo, R., 1<sup>st</sup> ed. for the development of the 2<sup>nd</sup> ed., [2006].

**Professional Society Memberships:**

International Erosion Control Association (IECA)

Transportation Research Board (TRB) Affiliate