Ashley Buss, PhD, PE

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IOWA STATE UNIVERSITY Institute for Transportation

EDUCATION

- PhD, Civil Engineering, Iowa State University, Ames, IA, 2014
- MS, Civil Engineering, Iowa State University, Ames, IA, 2010
- BS, Civil Engineering, Iowa State University, Ames, IA, 2008

PROFESSIONAL EXPERIENCE

- Assistant Professor of Civil Engineering, Department of Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2015–present
- Postdoctoral Research Associate, Department of Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2014–2015
- Research Assistant/Teaching Assistant, Department of Civil, Construction, and Environmental Engineering, Iowa State University, Ames, IA, 2009–2014

SELECTED RESEARCH PROJECTS

- *Effectiveness of Pavement Preservation Techniques*, sponsored by Iowa Highway Research Board, (2016–present), PI
- Enhancing the Fundamental Knowledge and Use of Asphalt Emulsions Using Systematic Scientific and Engineering Approaches, sponsored by Iowa Highway Research Board and Midwest Transportation Center, (2017–2018), PI
- Scientific Innovations in Microsurfacing and Slurry Seal Mixture Design, sponsored by the Iowa Highway Research Board, (2018–present), PI
- *Quantifying Benefits of Improved Compaction,* sponsored by Minnesota Department of Transportation/Local Roads Research Board, (2018–present), Co-PI
- Validation of Gyratory Mix Design in Iowa Phase II, sponsored by Iowa Highway Research Board, (2018–present), Co-PI
- *Chip Seal Design and Specifications*, sponsored by Oregon Department of Transportation, (2014–2016), PI
- *Chip Seal Design and Specifications Phase II*, sponsored by Oregon Department of Transportation, FHWA STIC Grant, (2017–present), PI

SELECTED PUBLICATIONS

• Gransberg, D. Ilker Karaca, and A. Buss. 2018. Life Cycle Cost Adjustment Factors In Alternate Design/Alternative Bid Pavement Bids: Added Value or Added Controversy? Accepted for publication

in the *Transportation Research Record: Journal of the Transportation Research Board* and for presentation at the 97th Annual TRB Meeting.

- Pinto, I., A. Buss. 2018. Layer coefficients of cold in-place recycled layers from performance data. *International Journal of Pavement Engineering*, pp. 1–7.
- Buss, A., M. Guirguis, and D. Gransberg. 2018. Chip seal aggregate evaluation and successful roads preservation. *Journal of Construction and Building Materials*, Vol. 180, pp. 396–404.
- Buss, A., M. Elkashef, W.R. Stephenson. 2018. Extracting more from Dynamic Modulus Data using Split-Plot Repeated Measures Analysis. *ASTM Journal of Testing and Evaluation*, Vol. 46, No. 1, pp. 351–364.
- Guirguis, M. and Buss, A. 2017. Performance Evaluation of Emulsion and Hot Asphalt Cement Chip Seal Pavements. *Journal of Materials in Civil Engineering*, Vol. 29, No. 11.
- Podolsky, J. H., Buss, A., Williams, R. C., Hernández, N., and Cochran, E. W. 2017. Rejuvenation of vacuum tower bottoms through bio-derived materials for use in paving flexible roadways. *Journal of Cleaner Production*, Vol. 143, pp. 1081–1093.
- Podolsky, J. H., Buss, A., Williams, R. C., and Cochran, E. W. 2017. Effect of bio-derived/chemical additives on warm mix asphalt compaction and mix performance at low temperature. *Cold Regions Science and Technology*, Vol. 136, pp. 52–61.
- Buss, A., Mercado, M., and Schram, S. 2016. Long-Term Evaluation of Cold-in-Place Recycling and Factors Influencing Performance. *ASCE Journal of Performance of Constructed Facilities*, DOI: 10.1061/(ASCE)CF.1943-5509.0000985, 04016111.
- Podolsky, J. H., A. Buss, R. C. Williams, and E. Cochran. 2016. Mechanistic empirical performance of warm-mix asphalt with select bio-derived additives in the Midwestern United States using AASHTOWare pavement ME design. *Road Materials and Pavement Design*, DOI: 10.1080/14680629.2016.1194880.
- Buss, A., R. C. Williams, and S. Schram. 2016. Evaluation of Moisture Susceptibility Tests for Warm Mix Asphalt. *Construction and Building Materials*, Vol. 102, pp. 358–366.
- Bektas F, O. Smadi, and I. Nlenanya. 2015. Pavement Condition: A New Approach for the Iowa DOT. *Transportation Research Record: Journal of the Transportation Research Board,* No. 2523, pp. 40–46.
- Buss, A., R. C. Williams, and S. Schram. 2015. The influence of warm mix asphalt on binders in mixes that contain recycled asphalt materials. *Construction and Building Materials*, Vol. 77, pp. 50–58.
- Schram, S., R. C. Williams, and A. Buss. 2014. Reporting Results from the Hamburg Wheel Tracking Device. *Transportation Research Record: Journal of the Transportation Research Board*, No. 2446, pp. 89–98.

PROFESSIONAL AFFILIATIONS, HONORS, AND SERVICE

- Member, National Academies Transportation Research Board AFH20- Standing Committee on Quality Assurance Management
- Member, National Academies Transportation Research Board AFK30- Standing Committee: Non-Binder Components of Asphalt Mixtures
- Member, National Academies Transportation Research Board AFD60- Standing Committee on Design and Rehabilitation of Asphalt Pavements