Ashley Buss, Ph.D., P.E. (IA)	
Assistant Professor Department of Civil, Construction, and Environmental Engineering Iowa State University 490 Town Engineering Building 813 Bissell Rd. Ames, IA 50014-1006	(515) 294-4645 abuss@iastate.edu IOWA STATE UNIVERSITY **Institute for Transportation**

EDUCATION

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

PROFESSIONAL EXPERIENCE

- Assistant Professor, Department of Civil and Environmental Engineering, Iowa State University, Ames, Iowa, 2015–present
- Post-doctoral Research Associate, Department of Civil and Environmental Engineering, Iowa State University, Ames, Iowa, 2014–2015

SELECTED TECHNICAL REPORTS

- Gransberg, D., **A. Buss,** and I. Karaca. 2016. *Alternate Design/Alternate Bid Process for Pavement-Type Selection*, NCHRP Synthesis 47-02.
- **Buss., A.** and I. Pinto. 2019. *Scientific Innovation in Microsurfacing and Slurry Seal Mixture Design*, IHRB Project TR-755. Iowa Department of Transportation, Ames, IA.
- **Buss, A.** and I. Pinto. 2018. *Enhancing the Fundamental Knowledge and Use of Asphalt Emulsions Using Systematic Scientific and Engineering Approaches*, Iowa Highway Research Board Project TR-708C. Iowa Department of Transportation, Ames, IA.
- **Buss, A., B.** Claypool, A. Fathy-Abdelaty, and F. Bektas. 2019. *Effectiveness of Pavement Preservation Techniques*, IRHB Project TR-709. Iowa Department of Transportation. Ames, IA.
- **Buss, A.** and R. C. Williams. 2013. *Warm Mix Asphalt Phase II: Evaluation of WMA Quality Assurance Testing Protocols*, Iowa Highway Research Board, Project TR-635. Available at http://www.intrans.iastate.edu/research/projects/detail/?projectID=-529140120.

SELECTED PUBLICATIONS

- Pinto, I. and **A. Buss.** 2018. Layer coefficients of cold in-place recycled layers from performance data. *International Journal of Pavement Engineering*. pp. 1–7.
- 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. *Journal of Performance of Constructed Facilities*.
- Pinto, I. and **A. Buss.** 2020. Zeta Potential as a measure of Asphalt Emulsion Stability. *Energy and Fuels*, Vol. 34, No. 2, pp. 2143–2151.
- **Buss, A.,** J. Podolsky, R. C. Williams, and E. Cochran. 2015. Investigation of Isosorbide Distillation Bottoms as a Bio-Based Warm-Mix Additive. *ASCE Journal of Materials in Civil Engineering.*
- 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.*
- Podolsky, J., **Buss, A.**, Williams, R. C., Hernandez, N., and Cochran, E. W. 2016. Effects of Aging on Rejuvenated Vacuum Tower Bottom Rheology through use of Black Diagrams, and Master Curves. *Journal of Fuel.*
- **Buss, A.,** M. Elkashef, and 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 **A. Buss**. 2017. Performance Evaluation of Emulsion and Hot Asphalt Cement Chip Seal Pavements. *Journal of Materials in Civil Engineering*, Vol. 29, No. 11.
- Podolsky, J., **A. Buss**, R. C. Williams, E. Cochran. 2016. The Rutting and Stripping Resistance of Warm and Hot Mix Asphalt using Bio-additives. *Construction and Building Materials*, Vol. 102, pp. 358–366.
- **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.
- **Buss, A.**, A. Cascione, and R. C. Williams. 2014. Evaluation of Warm Mix Asphalt Containing Recycled Asphalt Shingles. *Construction and Building Materials*, Vol. 61, pp. 1–9.
- Yu, Jianhua, R. C. Williams, and **A. Buss**. 2012. Laboratory Evaluation of Warm Mix Asphalt Influence on Theoretical Maximum Specific Gravity. *ASTM Journal of Testing and Evaluation*, Technical Notes.
- Chen, C., R. C. Williams, M. G. Marasinghe, J. C. Ashlock, S. Schram, and **A.** Buss. 2015. Assessment of Composite Pavement Performance by Survival Analysis. *ASCE Journal of Transportation Engineering*.

SELECTED PRESENTATIONS

- **Buss, A.,** Hanz, A., Ryan, M., Hernandez, N., Williams, R. C., and Cochran, E. 2017. Use of Ion-Mobility Mass Spectrometry for Understanding Asphalt Aging and Composition. *Proc. 54th Annual Petersen Asphalt Research Conference*, Laramie, WY, July 17–19.
- Podolsky, J., **A. Buss,** R. C. Williams, E. Cochran. 20015. Rejuvenation of Vacuum Tower Bottoms through Bio-derived Materials for Use in Paving Flexible Roadways. *Proc. International Conference on Bio-based Building Materials (ICBBM)*, Clermont-Ferrand, France, June 21–24.
- Podolsky, J.H., **A. Buss,** N. Hernandez, R. C. Williams, E. W. Cochran. 2016. Low and Intermediate Temperature Properties of Asphalt Mixtures using Vacuum Tower Bottoms modified with Bio-derived Rejuvenators. Proc. International Society of Asphalt Pavements, Jackson, WY, July 18–21.