

Thomas Bennert

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Department of Civil and Environmental Engineering
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EDUCATION

Ph.D. Civil Engineering, Rutgers University, New Brunswick, NJ, October 2009

M.S. Civil Engineering, Rutgers University, New Brunswick, NJ, May 1998

B.S. Civil Engineering, Rutgers University, New Brunswick, NJ, May 1996

Ph.D. Dissertation: A Rational Approach to the Prediction of Reflective Cracking in Bituminous Overlays for Concrete Pavements

ACADEMIC EXPERIENCE

2014 to Present

Associate Research Professor - Pavement Materials Engineer of Rutgers Asphalt/Pavement Program, Rutgers University, Department of Civil and Environmental Engineering, Center for Advanced Infrastructure and Transportation, Piscataway, NJ

2011 to 2014

Assistant Research Professor - Pavement Materials Engineer of Rutgers Asphalt/Pavement Program, Rutgers University, Department of Civil and Environmental Engineering, Center for Advanced Infrastructure and Transportation, Piscataway, NJ

1998 to 2010

Senior Research Scientist/Lecturer - Pavement Materials Engineer of Rutgers Asphalt/Pavement Program, Rutgers University, Department of Civil and Environmental Engineering, Center for Advanced Infrastructure and Transportation, Piscataway, NJ

TEACHING EXPERIENCE

2006 – 2010

Mechanistic Pavement Design, 180:535 – Department of Civil and Environmental Engineering, Rutgers University

- Advanced pavement material characterization using laboratory and non-destructive testing
- Advanced analysis of stress and strains in pavements utilizing linear elastic theory and computer programs

- Conducting new and rehabilitation pavement designs using mechanistic principles and developing life-cycle cost analysis
- Overview of Pavement Preservation techniques
- Overview of Pavement Management techniques

2002 – 2007

Advanced Foundation Design, 180:577 – Department of Civil and Environmental Engineering, Rutgers University

- Soils property correlations to design parameters
- Advanced design methods utilizing In-Situ technologies (Cone Penetration Testing, Pressuremeter, Dilatometer)
- Design methodologies for pile design, sheet pile design, shallow foundations, retaining walls and deep foundations

RESEARCH INTERESTS

- Sustainable technologies (Warm Mix Asphalt, Recycled Materials) in Transportation Infrastructure design and construction
- Advanced material characterization (laboratory and in-situ) of HMA and aggregates/soil for pavement design
- Forensic evaluation of pavement failures
- Mechanistic pavement design and performance
- Advanced site characterization methods for geotechnical design
- Evaluation of recycled materials for geotechnical applications

RELEVANT AWARDS AND RECOGNITIONS

2014 *TRB K.B. Woods Award* for Outstanding Paper in Design and Construction of Transportation Facilities, “Strategies for Incorporating High RAP Percentages: Review of Northeast States Implementation Trials”, Transportation Research Board, Washington, D.C.

2011 *TRB K.B. Woods Award* for Outstanding Paper in Design and Construction of Transportation Facilities, “Influence of Production Temperature and Aggregate Moisture Content on Performance of Warm Mix Asphalt”, Transportation Research Board, Washington, D.C.

2008 *TRB K.B. Woods Award* for Outstanding Paper in Design and Construction of Transportation Facilities, “Field and Laboratory Evaluation of a Reflective Crack Relief Interlayer (RCRI) Mixture in New Jersey”, Transportation Research Board, Washington, D.C.

PROFESSIONAL SOCIETIES

Transportation Research Board (TRB)
New Jersey Society of Asphalt Technologists (NJSAT)

Association of Asphalt Paving Technologists (AAPT)
American Society for Testing and Materials (ASTM)
American Society of Civil Engineers (ASCE)

TECHNICAL COMMITTEES

Federal Highway Administration Expert Task Group (ETG) on Hot Mix Asphalt Mixtures – ETG Member
Association of Asphalt Pavement Technologists (AAPT) Editorial Board
National Cooperative Highway Research Program (NCHRP) Panel, NCHRP 9-57 and 9-57A
New Jersey Society of Asphalt Technologists (NJSAT) – certified Asphalt Plant and Paving Technologist (Instructor and Board Member)
Transportation Research Board (TRB)
Committee Member AFD60 – Committee on Design and Rehabilitation of Pavements (Previous - 3 year service)
Committee Member of AFK10 – Committee on General Issues in Hot Mix Asphalt (Previous – 9 year service)
Committee Member of AFK30 – Committee on Characteristics of Nonbituminous Components of Bituminous Paving Mixtures (Previous – 9 year service)
Committee Member of AFK50 – Committee on Structural Requirements of Asphalt Mixtures

SERVICE TO ACADEMIC PROFESSION – JOURNAL REVIEWER

- *Journal of Transportation Engineering, ASCE*
- *Journal of Materials, ASCE*
- *Journal of Geotechnical and Geoenvironmental Engineering, ASCE*
- *National Research Council – Transportation Research Record*
- *Association of Asphalt Paving Technologists, AAPT*
- *Geotechnical Testing Journal, ASTM*
- *International Journal of Pavement Engineering*
- *Journal of Construction and Building Materials*

RECENT AND SELECTED PUBLICATIONS

Journal (Refereed) Publications

Bennert, T., E. Haas, and E. Wass, Jr., 2018, “Indirect Tensile Test (IDT) to Determine Asphalt Mixture Performance Indicators during Quality Control Testing in New Jersey”, *Transportation Research Record: Journal of the Transportation Research Board*, Washington, D.C.,
<https://doi.org/10.1177/0361198118793276>

Wang, H., g. Xu, Z., Wang, and T. Bennert, 2018, “Flexible Pavement Interface Bonding: Theoretical Analysis and Shear-Strength Measurement”, *Journal of Testing and Evaluation*, Volume 46, Issue 1.

Bennert, T., C. Ericson, D. Pezeshki, R. Shamborovsky, and C. Bognacki, 2017, “Moving Towards Asphalt Binder and Mixture Protocols to Minimize Fatigue Cracking on Asphalt Airfields”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2633, Washington, D.C., pp. 117 - 126.

Prowell, B., T. James, T. Bennert, and J. Jordan, 2017, “Evaluation of Moduli and Structural Coefficient South Carolina’s Asphalt Base Mixtures (Black Base)”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2641, Washington, D.C., pp. 21 – 28.

Ali, Ayman, Y. Mehta, A. Nolan, C. Purdy, and T. Bennert, 2016, “Investigation of the Impacts of Aging and RAP Percentages on Effectiveness of Asphalt Binder Rejuvenators”, *Construction and Building Materials*, Vol. 110, p. 211 – 217.

Bennert, T., C. Ericson, D. Pezeshki, E. Haas, R. Shamborovsky, and R. Corun, 2016, “Laboratory Performance of Re-refined Engine Oil Bottoms (REOB) Modified Asphalt”, *Journal of the Association of Asphalt Paving Technologists (AAPT)*, Volume 85, pp. 163 – 209.

Bennert, T., C. Ericson, D. Pezeshki, and R. Corun, 2016, “Fatigue Performance of Re-refined Engine Oil Bottoms (REOB) Modified Asphalt – A Laboratory Study”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2574, Washington, D.C., pp. 1 - 16.

Bennert, T., D. Pezeshki, N. Shaarbafan, and C. Euler, 2016, “Warm Mix Asphalt Trials in New York State – Laboratory and Field Performance”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2575, Washington, D.C., pp. 103 - 112.

Wang, H., Z. Wang, T. Bennert, and R. Weed, 2016, “Specification Limits and Pay Adjustment for Longitudinal Joint Density of Asphalt Pavements: Case Study in New Jersey”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2573, Washington, D.C., pp. 98 - 106.

Jacques, C., J.S. Daniel, T. Bennert, G. Reinke, A. Norouzi, C. Ericson, W. Mogawer, and Y.R. Kim, 2016, “Effect of Silo Storage Time on the Characteristics of Virgin and RAP Asphalt Mixtures”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2573, Washington, D.C., pp. 76 - 85.

Mogawer, W., T. Bennert, A. Austerman, and C. Ericson, 2015, “Investigating the Aging Mitigation Capabilities of Rejuvenators in High RAP Mixtures Using

Black Space Diagrams, Binder Rheology and Mixture Tests”, *Journal of the Association of Asphalt Paving Technologists (AAPT)*, Volume 84, p. 705 - 738.

Sabouri, M., T. Bennert, J.S. Daniel, and Y.R. Kim, 2015, “A Comprehensive Evaluation of the Fatigue Behavior of Plant-Produced RAP Mixtures”, *Journal of the Association of Asphalt Paving Technologists (AAPT)*, Volume 84, p. 43 – 78.

Sabouri, M., T. Bennert, J.S. Daniel, and Y.R. Kim, 2015, “Fatigue and Rutting Evaluation of Laboratory-Produced Asphalt Mixtures Containing Reclaimed Asphalt Pavement”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2506, Washington, D.C., pp. 32 - 44.

Mensching, D., G. Rowe, J.S. Daniel, and T. Bennert, 2015, “Exploring Low Temperature Performance in Black Space”, *Journal of the Association of Asphalt Paving Technologists (AAPT)*, Volume 84, p. 459 - 496.

Bennert, T., J. Sias Daniel, and W. Mogawer, 2014, “Strategies for Incorporating High RAP Percentages: Review of Northeast States Implementation Trials”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2445, Transportation Research Board of the National Academies, Washington, D.C., pp. 83 – 93. **(K.B. Woods Award for Best Paper)**

Bennert, T., A. Maher, and R. Sauber, 2011, “Influence of Production Temperature and Aggregate Moisture Content on Performance of Warm Mix Asphalt”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2208, Transportation Research Board of the National Academies, Washington, D.C., pp. 97 - 107. **(K.B. Woods Award for Best Paper)**

Bennert, T., and Maher, A., 2008, “Field and Laboratory Evaluation of a Reflective Crack Relief Interlayer (RCRI) Mixture in New Jersey”, *Transportation Research Record: Journal of the Transportation Research Board*, No. 2084, National Research Council, Washington, D.C., pp. 114 - 123. **(K.B. Woods Award for Best Paper)**