William G. Buttlar, PhD, PE

Professor and Glen Barton Chair in Flexible Pavements
Department of Civil and Environmental Engineering

University of Missouri-Columbia

Abstract

Recently, Dr. Buttlar was named the Glen Barton Chair in Civil and Environmental Engineering at the University of Missouri-Columbia (MU), where he oversees the Missouri Asphalt Pavement and Innovation Lab (MAPIL) on the 'Mizzou' campus. For the past 20 years, Dr. Buttlar served as Professor of Civil and Environmental Engineering at the University of Illinois at Urbana-Champaign (UIUC) and held the title of Narbey Khachaturian Endowed Faculty Scholar and Associate Dean. He has over 200 publications in the area of asphalt materials and pavements and over 50 invited presentations and keynote lectures. Dr. Buttlar is the chair of RILEM TC-MCD, is an Editor-In-Chief of the International Journal of Road Materials and Pavement Design, and serves on the Board of Directors of the Association of Asphalt Paving Technologists (AAPT). He is a founding member of City Digital at U+ILabs in Chicago, Illinois, and provides leadership in smart infrastructure initiatives at the center.

1. Address, Professional Preparation, and Appointments

Address Work
Department of Civil and Environmental Engineering (CEE)
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Professional Preparation
Ph.D. (1996) Department of Civil Engineering, Penn State University
M.S. (1991) Department of Civil Engineering, Penn State University
B.S. (w/honors) (1989) Department of Civil Engineering, Penn State University

Appointments
(05/16 – Present) Glen Barton Chair in Flexible Pavements and Professor, University of Missouri-Columbia
(09/2016-Present) Adjunct Professor, UIUC CEE
(08/2015-Present) Honorary Professor, Chang'An University
(01/14-05/16) Associate Dean for Graduate, Professional and Online Programs, College of Engineering, UIUC (50% Appointment)
(08/11-12/13) Associate Dean, Science, Engineering and Online Programs, Graduate College, UIUC (50% Appointment)
(02/10-present) Founding Director, Online and Blended Programs, UIUC CEE Dept.
(08/08-present) Professor, UIUC CEE
(08/02-08/08) Associate Professor, UIUC CEE
(08/96-08/02) Assistant Professor, UIUC CEE
(01/96-6/96) Post-Doctoral Research Assistant, University of Florida

(05/93-12/95) Eisenhower Graduate Fellow, Penn State University
(01/91-5/93) Research Engineer, Pennsylvania Transportation Institute

2. Recent Administrative Experience

Director, Mizzou Asphalt Pavement and Innovation Laboratory, MAPIL (May 2016 - Present)
University of Missouri-Columbia

- Established largest asphalt advanced performance testing laboratory in Missouri
- Established Missouri Asphalt Materials Reference Laboratory in Research Discovery Park
- Oversees MoDOT Asphalt University Research Programs
- Maintains excellent relationship with Missouri Asphalt Pavement Association (MAPA)

Associate Dean, College of Engineering (Dec. 2013-May 2016)
University of Illinois at Urbana-Champaign

- Responsible for new and existing Ph.D., M.S., and M.Eng. programs (>3,000 graduate students across 12 highly-ranked departments)
    - Oversaw the Office of the Director of Graduate Programs
    - Oversaw Graduate Diversity Programs and Recruitment:
        - MERGE, SURGE, and GEM recruitment and fellowship
        - Coordinate Initiatives with Compact for Faculty Diversity, NSBE, and SHPE
        - Co-PI with UIUC Provost on successful $1M Sloan Foundation grant proposal
    - Oversaw the development of new proposals and financial MOU's between units
    - Lead the development of more than a dozen new M.Eng. programs over 5-year period
    - Lead development of grad/online programs for new international campus at ZJU, China
- Responsible for Professional and Online Programs in the College of Engineering
    - Oversaw the Office of Online and Professional Engineering Programs (O2PEP)
    - Oversaw the strategic integration of MOOCs into college and campus programs
    - Oversaw growth of prof. master's initiatives w/ College of Business

Associate Dean, Graduate College (Aug. 2011- Dec. 2013)
University of Illinois at Urbana-Champaign

- Responsible for Office of Graduate Admissions for UIUC campus (> 25,000 annual applications and 11,000 enrolled graduate students)
- Oversaw new and existing graduate programs for engineering and science
- Responsible for UIUC Professional Science Masters programs (5 programs, 2 colleges), including negotiation of new MOU's (campus-college) and founding chair of dean's PSM admin. council
- Chaired Campus Committee on Extended Education and External Degrees (incl. online programs)
- Represented Graduate College on Campus Senate Educational Policy Committee
- Administered campus Clean Energy Education Fellowship Program
- PI of 2 NSF grants at Graduate College: Workshop grant and EHR-ECR grant related to online education and strategic integration of MOOCs at 21st century research universities
- Assisted w/ Campus Diversity Initiatives: SROP, Pre-Doctoral Institute, Ill. Partners for Diversity

Founding Director, CEE Online (Feb. 2010-May, 2016)
University of Illinois at Urbana-Champaign

- Conducted feasibility study and market research to establish framework for new online program in #1 ranked CEE Department, garnered faculty support for launch of program in 2011
- Built staff, infrastructure, programs, certificates and 45 new online courses since inception
- Brought in over 500 enrollments and $4M in new revenue to campus in first 3.5 years

Leadership on Campus and in Chicago on Initiatives Related to Smart Cities/Healthy Communities
University of Illinois at Urbana-Champaign

- Faculty Lead and Member of Strategic Advisory Committee, Project City Smart at U+I Labs, co-authored vision document resulting in multi-million seed funding from Fortune-500 companies
- Co-lead, NTU-UIUC Annual Forum on Smart Cities, Healthy Cities (2014: NTU-Taipei, Taiwan)
- Co-chair, UIUC Leadership Team on Smart Cities, Healthy Communities (incl.all major colleges)

3. Honors, Recognition, and Outstanding Achievements

a. Teaching

Award Name	Citation	Date Awarded
Listed on Incomplete List of Teachers Rated as Excellent – 18 Times (#students): CEE405: 1996(23), 1998(31), 1999(25), 2000(23), 2001(32), 2002(31), 2003(30), 2004(21), 2006(18), 2009(17), 2010(40), 2012(40); 2014(43); CEE 310: 2002(61), 2003(56), 2008(53); CEE 598 ABM: 2002(10), 2007(5)	Provost's Office, UIUC	1996-2016
University of Illinois, College of Engineering, Teaching College	General Electric Scholar	1997
University of Illinois, College of Engineering, Academy for Excellence in Engineering Education	Collins Fellow	2000
American Society of Civil Engineers Student Chapter	Instructor of the Year, Department of Civil and Environmental Engineering	2003
University of Illinois, College of Engineering	Rose Award for Teaching Excellence	2004
UIUC Office of the Provost and Vice Chancellor for Academic Affairs	Honorable Mention, Campus Award for Excellence in Undergraduate Teaching	2005, 2012, 2013
Civil Engineering's Outstanding Professor Award, 2018	College of Engineering, Award Accepted During Commencement, Fall 2018	2018

b. Research

Award Name	Citation	Date Awarded
Emmons Award, Runner-up, Best Technical Paper	Association of Asphalt Paving Technologists	1996
Best Poster Award, International Society for Asphalt	Eighth International Conference on Asphalt Pavements	1997
George Crawford Faculty Scholar Award	Department of Civil and Environmental Engineering	2001-2005

Award Name	Citation	Date Awarded
Fred Burggraf Award	National Academies of Science, Transportation Research Board. In Recognition of a "Paper of Outstanding Merit," Entitled: "ILLISIM Program for End-Result Specification Development"	2000
Prix Earl Kee Award	Canadian Technical Asphalt Association, Best Technical Presentation by New Authors	2001
Emmons Award, Runner-up, Best Technical Paper Association of Asphalt Paving Technologists	Association of Asphalt Paving Technologists	2004
Narbey Khachaturian Faculty Scholar Award	Department of Civil and Environmental Engineering	2005-2010
Best Paper Award, Runner-up International Society of Asphalt Pavements	Tenth International Conference on Asphalt Pavements	2006
CTS Research Partnership Award	Center for Transportation Studies: The award recognizes research projects within the CTS program that have resulted in significant impacts on transportation, and rewards teams of individuals who have drawn on the strengths of their diverse partnerships to achieve those results. Project: “Investigation of Low Temperature Cracking in Asphalt Pavements National Pooled Fund Study - Phase II,” with the University of Minnesota	Feb, 2013
Honorary Professor, Visiting Professor	Chang'An University, Xi'An, China	July, 2014
Great Overseas Talent Award	Chang'An University, Xi'An, China	June 2015-June 2020
Outstanding Paper Award	American Society for Non-Destructive Testing (ASNT), Journal of Materials Evaluation, Best Paper in Calendar Year	Fall, 2016

c. Public Service

Award Name	Citation	Date Awarded
Advisors List	College of Engineering	1998

4. Research, Creative, and Other Scholarly Activities

Publications

(*) has undergone stringent editorial review by peers
(**) invited and carries with it prestige and recognition
(s) based on work as a student
(w) co-authored with students you supervise

(!) represents most important contribution of the past decade
(P) derived from PhD thesis
(D) co-authored with post-docs

a. Books and Book Chapters, Edited or Co-Edited

1. American Society of Civil Engineers, Advancing Airfield Pavements, Chicago IL, August 2001, Editors W.G. Buttlar and J.E. Naughton III.
2. Buttlar, W. G., Roque, R., and D. R. Hiltunen. Chapter 14: Prediction of Thermal Cracking with TCMODEL, in Modeling of Asphalt Concrete, ASCE Press, MrGraw Hill, Y.R. Kim, Ed., pp. 405-428, 2008.
3. Bashin, A., Masad, E., Kutay, M.E., Buttlar, W.G., Kim, Y., Marasteanu, M., Kim, Y.R., Schwartz, C.W., and L.R. Carvalho, "Applications of Advanced Models to Understand Behavior and Performance of Asphalt Mixtures," Transportation Research E-Circular, Transportation Research Board, Issue E-C161, 2012.
4. Buttlar, W. G., Chabot, A.C., and P. Hornich. Chapter 1: RILEM STAR Report on Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements, 2017.
5. Buttlar, W.G., and B.C. Hill, Fatigue Cracking: An Experimental and Numerical Synthesis from the Mid-1990s to 2016, AAPT Special Publication, October, 2016, Chapter on Indirect Tension Testing, 2017. Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements: RILEM State-of-the-Art Report (STAR), ed. W.Buttlar, A.Chabot, E.Dave, C.Petit, and G.Tebaldi, RILEM, 2018.
6. Alavi A.H., Buttlar W.G., “Advances of Smartphone Technology in Civil Engineering”, Data Analytics for Smart Cities, Chapter 1, CRC Press, Boca Raton, FL, In Press.

b. Articles in Journals

1. Roque, R. and W.G. Buttlar, "The Development of a Measurement and Analysis System to Accurately Determine Asphalt Concrete Properties Using the Indirect Tensile Mode," Journal of the Association of Asphalt Paving Technologists, Vol. 61, pp. 304-332, 1992
2. Buttlar, W.G. and R.R. Mozingo, "Behavior of a Bilayer Reinforced Stressed Timber Bridge Deck Under Static and Dynamic Loads," Transportation Research Record, No. 1426, National Research Council, National Academy Press, Washington, D. C., pp. 36-43, 1993.
3. Buttlar, W.G. and R. Roque, "Development and Evaluation of the New SHRP Measurement and Analysis System for Indirect Tensile Testing of Asphalt Mixtures at Low Temperatures," Transportation Research Record, No. 1454, National Research Council, National Academy Press, Washington, D. C., pp. 163-171, 1994
4. Roque, R., Hiltunen, D.R., and W. G. Buttlar, "Thermal Cracking Performance and Design of Mixtures Using SUPERPAVETM," Symposium for SUPERPAVETM Implementation, Portland Oregon, Journal of the Association of Asphalt Paving Technologists, Vol. 64, pp. 718-735, 1995
5. Buttlar, W. G. and R. Roque, "Evaluation of Empirical and Theoretical Models to Determine Asphalt Mixture Stiffnesses at Low Temperatures," Journal of the Association of Asphalt Paving Technologists, Vol. 65, pp. 99-141, 1996.
6. Buttlar, W.G., Roque, R., and B. Reid, "An Automated Procedure for Generation of the Creep Compliance Master Curve for Asphalt Mixtures," Journal of the Transportation Research Board, No. 1630, National Research Council, National Academy Press, Washington, D. C., pp. 28-36, 1998
7. Roque, R., Buttlar, W.G., Ruth, B.E., and S.W. Dickison, "Short-Loading-Time Stiffness from Creep, Resilient Modulus, and Strength Tests Using the Superpave Indirect Tension Test," Journal of the Transportation Research Board, No. 1630, National Research Council, National Academy Press, Washington, D. C., pp. 10-20, 1998
8. Buttlar, W.G., Bozkurt, D., Al-Khateeb, G.G., and A.S. Waldhoff, "Understanding Asphalt Mastic Behavior Through Micromechanics," Journal of the Transportation Research Board, No. 1681, National Research Council, National Academy Press, Washington, D. C., pp. 157-169, 1999

9. Buttlar, W.G., Al-Khateeb, G.G., and D. Bozkurt, "Development of a Hollow Cylinder Tensile Tester to Obtain Mechanical Properties of Bituminous Paving Mixtures," Journal of the Association of Asphalt Paving Technologists, Vol. 68, pp. 369-403, 1999
10. Buttlar, W.G., and J.J. Hausman, "ILLISIM Program for End-Result Specification Development," Journal of the Transportation Research Board, No. 1712, National Research Council, National Academy Press, Washington, D. C., pp. 125-138, 2000
11. Buttlar, W.G., and D. Bozkurt, "Cost-Effectiveness of Paving Fabrics for Reflective Crack Control," Journal of the Transportation Research Board, No. 1730, National Research Council, National Academy Press, Washington, D. C., pp. 139-149, 2000.
12. Buttlar, W.G., and Z. You, "Discrete Element Modeling of Asphalt Concrete: A Mirco-Fabric Approach," Journal of the Transportation Research Board, No. 1757, National Research Council, National Academy Press, Washington, D.C., pp. 111-118, 2001
13. Kim, J., and W.G. Buttlar, "Analysis of Reflective Crack Control System Involving Reinforcing Grid over Base-Isolating Interlayer Mixture," Journal of Transportation Engineering, American Society of Civil Engineers, Vol. 28, No. 4, pp. 375-384, 2002.
14. Buttlar, W.G., Bauer, J.M., and D.S. Sherman, "Dynamic Modulus of Asphalt Concrete Using a Hollow Cylinder Tensile Tester," Journal of the Transportation Research Board, No.1789, National Research Council, National Academy Press, Washington, D.C., pp. 183-190, 2002
15. Hausman, J.J. and W.G. Buttlar, " Laboratory and Field Analysis of the TransTech Model 300 Pavement Quality Indicator (PQI) for Determining Asphalt Pavement Density," Journal of the Transportation Research Board, No.1830, National Research Council, National Academy Press, Washington, D.C., pp. 191-200, 2002.
16. Lin, N., Bailey, B.A., He, X., and W.G. Buttlar, "Adjustment of Measuring Devices with Linear Models," Technometrics, Vol. 46, No. 2, pp. 127-134, May 2004.
17. You, Z., and W.G. Buttlar, "Discrete Element Modeling to Predict the Modulus of Asphalt Concrete," Journal of Materials in Civil Engineering, American Society of Civil Engineers, Volume 16, Issue 2, pp. 140-146, 2004.
18. Buttlar, W.G., M.P. Wagoner, Z. You, and S.T. Brovold, "Simplifying the Hollow Cylinder Tensile Test Procedure through Volume-Based Strain," Journal of the Association of Asphalt Paving Technologists, Vol. 73, pp 367-399, 2004.
19. Wagoner, M.P., Buttlar, W.G., and G.H. Paulino, "Disk-Shaped Compact Tension Fracture Test: A Practical Specimen Geometry for Obtaining Asphalt Concrete Fracture Properties," Experimental Mechanics, Vol. 52, No. 3, pp. 270-277, June 2005.
20. Buttlar, W.G. and E. Dave, "A Micromechanics-Based Approach for Determining Presence and Amount of Recycled Asphalt Pavement Material in Asphalt Concrete," Journal of the Association of Asphalt Paving Technologists, Vol. 74, pp 829-884, 2005.
21. Wagoner, M.H., Buttlar, W.G., and G.H. Paulino, "Development of a Single-Ended Notched Beam Test for Fracture Testing of Asphalt Concrete," ASTM Journal of Testing and Evaluation, Vol. 33, No. 6, pp. 452-460, Nov. 2005.
22. Wagoner, M.P., Buttlar, W.G., Paulino, G.H., and P.I. Blankenship, "Investigation of the Fracture Resistance of Hot-Mix Asphalt Concrete Using a Disk-Shaped Compact Tension Test," Journal of the Transportation Research Board, No. 1929, National Research Council, National Academy Press, Washington, D.C., pp. 183-192, 2005.
23. H.M. Yin, G.H. Paulino, W.G. Buttlar, L.Z. Sun, "Effective Thermal Conductivity of Functionally Graded Composites," Journal of Applied Physics, 98, p. 63704-1-9, 2005.
24. You, Z., and W.G. Buttlar, "Development of a Microfabric Discrete Element Modeling Technique to Predict Complex Modulus of Asphalt-Aggregate Hollow Cylinders Subjected to Internal Pressure," Accepted for Publication in the Journal of the Transportation Research Board, No. 1929, National Research Council, National Academy Press, Washington, D.C., pp. 218-226, 2005.
25. Buttlar, W.G., Song, S.H., and G. H. Paulino, "Application of Graded Finite Elements for Asphalt Pavement Analysis," Journal of Engineering Mechanics, American Society of Civil Engineers, v 132, n 3, p 240-249, March, 2006.
26. You, Z. and W.G. Buttlar, "Micromechanical Modeling Approach to Predict Compressive Dynamic Moduli of Asphalt Mixture Using the Distinct Element Method," Journal of the Transportation Research Board, No. 1970, National Research Council, Washington, D.C., pp. 73-83, 2006.

27. Wagoner, M.P., W.G. Buttlar, G.H. Paulino, and P.I. Blankenship, "Laboratory Testing Suite for Characterization of Asphalt Concrete Mixtures Obtained from Field Cores," Journal of the Association of Asphalt Paving Technologists, Vol. 75, pp. 815-852, 2006.
28. Song, S.H., Paulino, G.H., and W.G. Buttlar, "Simulation of Crack Propagation in Asphalt Pavements using an Intrinsic Cohesive Zone Model," Journal of Engineering Mechanics, American Society of Civil Engineering, Vol. 132, Issue 11, pp. 1215-1223, November, 2006.
29. Song, S.H., Paulino, G.H., and W.G. Buttlar, "A Bilinear Cohesive Zone Model Tailored for Fracture of Asphalt Concrete Considering Viscoelastic Bulk Material," Engineering Fracture Mechanics, v 73, n 18, pp. 2829-2848, December, 2006.
30. H.M. Yin, W.G. Buttlar, G.H. Paulino, Simplified Solution for Periodic Thermal Discontinuities in Asphalt Overlays Bonded to Rigid Pavements, Journal of Transportation Engineering, American Society of Civil Engineers, Vol. 133, No. 1, pp. 39-46, 2007.
31. H.M. Yin, G.H. Paulino, W.G. Buttlar, L.Z. Sun, "Micromechanics-based Thermoelastic Model for Functionally Graded Particulate Materials with Particle Interactions," Journal of the Mechanics and Physics of Solids, v 55, n 1, p 132-160, January, 2007.
32. Manik, A., Buttlar, W.G., and K. Gopalakrishnan, "Towards an Enhanced Stochastic Simulation Model for Risk Analysis in Highway Construction," International Journal of Applied Science, Engineering and Technology, Volume 4, Number 2, 2007.
33. Wagoner, M.W., and W.G. Buttlar, "Influence of Specimen Size on Fracture Energy of Asphalt Concrete," Journal of the Association of Asphalt Paving Technologists, Vol. 76, pp 391-426, 2007.
34. Braham, A.F., Buttlar, W.G., and M. Marasteanu, "Effect of Binder Type, Aggregate, and Mixture Composition on the Fracture Energy of Hot-mix Asphalt in Cold Climates," Journal of the Transportation Research Board, National Research Council, Washington, D.C., No. 2001, pp. 102-109, 2007
35. H.M. Yin, W.G. Buttlar, G.H. Paulino, H. Di Benedetto, Assessment of Existing Micromechanical Models for Asphalt Mastics Considering Viscoelastic Effects, International Journal of Road Materials and Pavement Design, Vol. 9, Issue 1, pp. 31-57, 2008.
36. Li, X., Braham, A.F. Marasteanu, M.O., Buttlar, W.G., and R.C. Williams, "Effect of Factors Affecting Fracture Energy of Asphalt Concrete at Low Temperature," International Journal of Road Materials and Pavement Design, Vol. 9, pp.397-416, 2008.
37. H.M. Yin, G.H. Paulino, W.G. Buttlar, and L. Z. Sun, "Heat Flux Field for One Inhomogeneity Embedded in a Functionally Graded Material," International Journal of Heat and Mass Transfer, v 51, n 11-12, p 3018-3024, June 2008.
38. Song, S.H., Wagoner, M.P., Paulino, G.H., and W.G. Buttlar, "δ25 Crack Opening Displacement Parameter in Cohesive Zone Models: Experiments and Simulations in Asphalt Concrete," Fatigue and Fracture of Engineering Materials and Structures, v 31, n 10, p 850-856, 2008.
39. Apeagyei, A.K., Dave, E.D., and W.G. Buttlar, "Effect of Cooling Rate on Thermal Cracking of Asphalt Concrete Pavements," Journal of the Association of Asphalt Paving Technologists, Vol. 77, 2008.
40. Apeagyei, A.K., Buttlar, W.G., and B.J. Dempsey, "Investigation of Cracking Behavior of Antioxidant-Modified Asphalt Mixtures," Journal of the Association of Asphalt Paving Technologists, Vol. 77, 2008.
41. Baek, J., Al-Qadi, I.L., Xie, W., and W.G. Buttlar, "In-Situ Assessment of Interlayer Systems to Abate Reflective Cracking in Hot-Mix Asphalt Overlays," Journal of the Transportation Research Board, National Research Council, Washington, D.C., No. 2084, pp. 104-113, 2008.
42. Yin, H., Paulino, G.H., and Buttlar, W.G., and L.Z. Sun "Effective Thermal Conductivity of Functionally Graded Particulate Nanocomposites with Interfacial Thermal Resistance," Journal of Applied Mechanics, Transactions ASME, v 75, n 5, p 0511131-0511136, September 2008.
43. Kim H., Wagoner M.P., and W.G. Buttlar, "Simulation of Fracture Behavior in Asphalt Concrete Using a Heterogeneous Cohesive Zone Discrete Element Model," Journal of Materials in Civil Engineering, v 20, n 8, p 552-563, August 2008.
44. Yin, H., Paulino, G.H., and Buttlar, W.G., and L.Z. Sun "Effective Thermal Conductivity of Functionally Graded Particulate Nanocomposites with Interfacial Thermal Resistance," Journal of Applied Mechanics, Vol. 75, Issue 5, p3:1-3:6, September 2008.
45. Yin, H. Paulino, G.H, and W.G. Buttlar, "An explicit elastic solution for a brittle film with periodic cracks." International Journal of Fracture Vol. 153:1, pp. 39-52, September, 2008.

46. Apeagyei, A., Buttlar, W. G., and H. Reis, “Assessment of low-temperature embrittlement of asphalt binders using an acoustic emission approach,” Insight, Vol. 51, No. 3, pp. 129-136, March, 2009.
47. Kim, M. K., Baek, J., Buttlar, W. G., and I. A. Al-Qadi, “Field and Laboratory Evaluation of Fracture Resistance of Illinois HMA Overlay Mixtures,” Journal of the Transportation Research Board, 2009.
48. Kim, H., and W.G. Buttlar, “Discrete fracture modeling of asphalt concrete,” International Journal of Solids and Structures, Volume 46, Issue 13, pp. 2593-2604, June 2009.
49. Kim, M., Buttlar, W.G., Baek, J., and I.A. Al-Qadi, "Field and Laboratory Evaluation of the Fracture Resistance of Illinois Hot-Mix Asphalt Overlay Systems," Journal of the Transportation Research Board, No. 2127, Vol. 2, pp. 146-154, 2009.
50. Braham, A.F., Buttlar, W.G., Clyne, T., Marasteanu, M., and M. Turos, "The Effect of Long-Term Laboratory Aging on Asphalt Concrete Fracture Energy," Journal of the Association of Asphalt Paving Technologists, pp. 417-454, 2009.
51. Kim, H., and W.G. Buttlar, “Finite element cohesive fracture modeling of airport pavements at low temperatures,” Cold Regions Science and Technology, Volume 57, Issue 2-3, pp. 123-130, July 2009.
52. Kim, H., and W.G. Buttlar, “Multi-scale fracture modeling of asphalt composite structures,” Composites Science and Technology, Vol. 69, pp. 2716–2723, 2009.
53. Braham, A., Buttlar, W.G. and Ni, F., "Laboratory Mixed-Mode Cracking of Asphalt Concrete Using the Single-Edge Notch Beam," Road Materials and Pavement Design, Volume 11, pp.947-968, Issue 4, 2010.
54. Garzon, J., Duarte, C.A., and W.G. Buttlar, “Analysis of Reflective Cracks in Air Field Pavements Using a 3-D Generalized Finite Element Method,” International Journal of Road Materials and Pavement Design, VOL 11/2, pp.459-477, July 2010.
55. Dave, E.V., and W.G. Buttlar, "Low Temperature Cracking Prediction with Consideration of Temperature Dependent Bulk and Fracture Properties," Road Materials and Pavement Design," VOL 11/SI, , pp.33-59, 2010.
56. Kim, H., Chou, K., and W.G. Buttlar, "Mesh-Independent Fracture Modeling for Overlay Pavement System under Heavy Aircraft Gear Loadings," ASCE Journal of Transportation Engineering, 136, 370, 2010.
57. Dave, E.V. and W.G. Buttlar, “Thermal Reflective Cracking of Asphalt Concrete Overlays,” International Journal of Pavement Engineering, Volume 11, Issue 6, pp. 477-488, December 2010.
58. Kim, H., and W.G. Buttlar, "Stiffening Mechanisms of Asphalt–Aggregate Mixtures: From Binder to Mixture," Journal of the Transportation Research Board, 10-3689, pp. 98-108, 2010.
59. Dave, E.V., Ahmed, S.A., Buttlar, W.G., Bausano, J., and T. Lynn, "Investigation of Strain Tolerant Mixture Reflective Crack Relief Systems: an Integrated Approach," Journal of the Association of Asphalt Paving Technologists," Vol. 79, pp. 119-156, 2010.
60. Ahmed, S.A., Dave, E.V., Buttlar, W.G., and M. Exline, "Fracture Properties of Gap & Dense Graded Thin Bonded Overlays," Journal of the Association of Asphalt Paving Technologists," Vol. 79, pp. 443-472, 2010.
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Asphalt Shingles and Fractionated Recycled Asphalt Pavement," Journal of the Association of Asphalt Pavement Technologists, 2011.

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56. Baek, J., I. L. Al-Qadi, and W. G. Buttlar, “Development of a Cost-Benefit Prediction Model for Hot-Mix Asphalt Overlays to Evaluate the Cost-Effectiveness of Interlayer Systems on Abating Reflective Cracking,” Paper No. 09-3777, the Transportation Research Board 88th Annual Meeting, Washington, DC, Jan 2009 (in CD).
57. Dave, E.V., Paulino, G.H., Hilton, H.H., and W.G. Buttlar, "Framework for Consideration of Aging and Thermal Gradients in Asphalt Concrete Pavements Simulations," Tenth US National Congress on Computational Mechanics, San Francisco, July 2009.
58. Garzon, J., Duarte, C.A., and W.G. Buttlar, "Analysis of Reflective Cracks in Air Field Pavements Using a 3-D Generalized Finite Element Method," Tenth US National Congress on Computational Mechanics, San Francisco, July 2009.
59. Yin, H., Buttlar, W.G., and G.H. Paulino, "Opening-Mode Cracking in Asphalt Pavements: Crack Initiation and Saturation," Tenth US National Congress on Computational Mechanics, San Francisco, July 2009.
60. Leon, S., Dave, E., Buttlar, W.G., and G.H. Paulino, "Investigation of Low Temperature Cracking through an Improved Thermal Cracking Model," Tenth US National Congress on Computational Mechanics, San Francisco, July 2009.
61. Ahmed, S.A., Buttlar, W.G., Dave, E.V., Behnia, B., and M. Exline, "Fracture Characterization of Open-Graded Ultra-Thin Bonded Wearing Course," Proceedings of the BCRA2 Conference, Urbana, IL, June 2009.
62. Behnia, B., Dave, E., and W.G. Buttlar, "Fracture Characterization of Open-Graded Ultra-Thin Bonded Wearing Course," EnvRoad Conference, Warsaw, Poland, 2009.
63. Ahmed, S.A., Buttlar, W.G., Dave, E.V., Behnia, B., and M. Exline, Fracture Characterization of Gap-Graded Thin Bonded Wearing Courses, EnvRoad Conference, Warsaw, Poland, 2009.
64. Dave, E.V., Wagoner, M.P., Buttlar, W.G., Lynn, T., and J. Bausano, "Design and Construction of Accelerated Pavement Testing Sections for Asphalt Overlay-Interlayer Systems over PCC," Proceedings of the Sixth Mexican Asphalt Conference, 2009.
65. Apeagyei, A.A., Reis, H., and W.G. Buttlar, "Estimation of low-temperature cracking threshold for asphalt binders using an acoustic emission approach," SPIE Smart Structures and Materials &

Nondestructive Evaluation and Structural Health Monitoring Conference, San Diego, CA, March, 2009.

66. Buttlar, W.G., Dave, E.V., and D.S. Sherman, "HYBRID REFLECTIVE-CRACK RELIEF SYSTEM AT GREATER PEORIA REGIONAL AIRPORT: A CASE STUDY," Proceedings of the 2010 FAA Worldwide Airport Technology Transfer Conference, April, 2010.
67. Garzon, J., Duarte, C.A., and W.G. Buttlar, "Computational Simulations of a Full-Scale Reflective Cracking Test," Proceedings of the 2010 FAA Worldwide Airport Technology Transfer Conference, April, 2010.
68. Dave, E.V., Park, K., Paulino, G.H., and W.G. Buttlar "Functionally graded viscoelastic pavement analysis with stress-dependent substrate, Part-I: Theory and Development," 11th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, Portugal, September, 2010.
69. Dave, E.V., Park, K., Buttlar, W.G., and G.H. Paulino, "Functionally graded viscoelastic pavement analysis with stress-dependent substrate, Part-II: Applications," 11th International Symposium on Multiscale, Multifunctional and Functionally Graded Materials, Portugal, September, 2010.
70. Kim, M.K., Buttlar, W.G., and H. Yin "Micromechanics Effective Medium Theories for Asphalt-Aggregate Mixtures," ISAP 11th International Conference on Asphalt Pavements, Nagoya, Japan, August 2010.
71. Dave, E.V., Buttlar, W.G., and G.H. Paulino, "Thermal Cracking Simulations of Aged Asphalt Pavements using Viscoelastic Functionally Graded Finite Elements," ISAP 11th International Conference on Asphalt Pavements, Nagoya, Japan, August 2010.
72. Behnia, B., Dave, E.V., Ahmed, S.A., and W.G. Buttlar, Investigation of Effects of Recycled Asphalt Pavement (RAP) Low Temperature Cracking Performance of Asphalt Mixtures," 1st ASCE T&DI Green Streets & Highways Conference, Denver, CO, November 2010.
73. Behnia, B., Buttlar, W.G., Reis, H.M., and A. Apeagyei, "Determining the Embrittlement Temperature of Asphalt Binders using an Acoustic Emission Approach, "Proceedings of the ASCE NDE/NDT for Highway Bridges: Structural Materials Technology (SMT)," New York, August, 2010.
74. Buttlar, W.G., Paulino, G.H., Dave, E.V., Leon, S., and K. Park, "Thermal Cracking Models for Asphalt Pavements: Past-to-Present," First ASCE T&DI Conference, March 2011.
75. Leon, S., Dave, E.V., Buttlar, W.G., and G.H. Paulino, "Thermal Cracking Prediction Model and Software for Asphalt Pavements," First ASCE T&DI Conference, March 2011.
76. Hill, B.C., Hakimzadeh, S., and Buttlar, W.G., "An Investigation of the Effects of Three Warm Mix Asphalt Additives on Asphalt Binder and Mixture Properties," NAPA 2nd International Warm-Mix Conference, St. Louis, MO, 2011.
77. Hakimzadeh, S., Kebede, N.A. W.G. Buttlar, “Comparison between Optimum Tack Coat Application Rates as Obtained from Tension- and Torsional Shear-type Tests,” Proceedings of the 7th RILEM International Conference on Cracking in Pavements, 2012.
78. Dave, E.V., Ahmed, S.A., and W.G. Buttlar, “Laboratory and Computational Evaluation of Compact Tension Fracture Test and Texas Overlay Tester for Asphalt Concrete,” Proceedings of the 7th RILEM International Conference on Cracking in Pavements, 2012.
79. Behzad Behnia, Brian Hill, Eshan Dave, William G. Buttlar, Nathan Kebede, “Developing New Mechanical Performance Test for Asphalt Mixtures”, 12th U.S. National Congress for Computational Mechanics, Raleigh, NC, July 2013 (Accepted)
80. Behzad Behnia, Eshan Dave, William G. Buttlar, Henrique Reis “Acoustic Emissions (AE) Technique for Evaluation of Embrittlement Temperature of Asphalt Binders”, ASCE T&DI Airfield & Highway Conference, Los Angeles, CA (Accepted), June 2013.
81. Hakimzadeh, S.K., Hill, B.C., Buttlar, W.G., and G.H. Paulino, "Modeling of Mixed-Mode Fracture at Pavement Interfaces," 12th U.S. National Congress for Computational Mechanics, Raleigh, NC, July 2013 (Accepted)
82. Hill, B.C., Ramos, V.C.L., Paulino, G.H., and W.G. Buttlar, "Discrete Element Modeling of Asphalt Concrete Fracture Using Digital Image Correlation Displacement Fields," 12th U.S. National Congress for Computational Mechanics, Raleigh, NC, July 2013 (Accepted)
83. Islam, M.S., Buttlar, W.G., Aldunate, R.G., and W.R. Vavrik, "Use of Cellphone Application to Measure Pavement Roughness," Second Transportation & Development Congress, Orlando, FL, pp. 553-563, 2014.

84. Behnia, B., Dave, E., Buttlar, W.G., and H. Reis “Acoustic Emissions (AE) Technique for Evaluation of Embrittlement Temperature of Asphalt Binders”, 5th European Asphalt Technology Association, Germany, June 2013.
85. Islam, M.S., Buttlar, W.G., Aldunate, R.G., and W.R. Vavrik, "Use of Cellphone Application to Measure Pavement Roughness," Second Transportation & Development Congress, Orlando, FL, pp. 553-563, 2014.
86. Hill, B.C., Londono, O.G., Buttlar, W.G., and G.H. Paulino, "Coupling Discrete Element Models with Digital Image Correlation Displacement Fields to Simulate Low Temperature Asphalt Concrete Fracture," USNCCM13, San Diego, CA, July 2015.
87. McGovern, M.E., B. Behnia, B.B. Hill, W.G. Buttlar, and H. Reis, (2014), “Characterization of oxidative aging in asphalt concrete pavements using its complex moduli,” SPIE Smart Structures/NDE / Health Monitoring of Structural and Biological Systems Conference, San Diego, CA, March 9-13, 2014. doi:10.1117/12.2044781, 2014.
88. Haser, A., McGovern, M.E., Behnia, B., Buttlar, W.G., and Reis, H., 2015, “Monitoring Viscosity in Asphalt Binders using an temperatures to Oxidized asphalt mixtures using acoustic emission,” SPIE Smart Structures and Materials, Nondestructive Evaluation and Health Monitoring, International Society for Optics and Photonics, March 8-12, 2015. (15 pages).
89. McGovern, M.E., and Reis, H., 2015, “Linear and nonlinear characterization of limestone,” SPIE Smart Structures and Materials, Nondestructive Evaluation and Health Monitoring, International Society for Optics and Photonics, March 8-12, 2015. (15 pages).
90. Sun, Z., Farace, N., Arnold, J.W., Buttlar, W.G., and Reis, H., 2015, “Quantitative evaluation of rejuvenators to restore embrittlement temperatures to oxidized asphalt mixtures using acoustic emission,” SPIE Smart Structures and Materials, Nondestructive Evaluation and Health Monitoring, International Society for Optics and Photonics, March 8-12, 2015. (14 pages).
91. Behnia, B., Buttlar, W.G., Reis, H., 2015, “Estimation of Low-Temperature Cracking in Asphalt Concrete Pavements using an Acoustic Emission Approach,” presented at the Society for the Advancement of Material and Process Engineering (SAMPE) Conference, Baltimore, USA, May 18-20, 2015. (13 pages).
92. McGovern, M.E., Buttlar, W.G., and Reis, H., (2015), Assessment of Oxidative aging in asphalt concrete pavements with unknown acoustic properties, presented at the Society for the Advancement of Material and Process Engineering (SAMPE) Conference, Baltimore, USA, May 18-20, 2015. (16 pages).
93. McGovern, M.E., Buttlar, W.G., and H. Reis, “Estimation of the aging level of rejuvenated hot mixed asphalt concrete pavements,” SPIE Smart Structures and Materials, Nondestructive Evaluation and Health Monitoring, 2016.
94. Hill, B.C., Giraldo-Londono, O., Buttlar, W.G., and G.H. Paulino, “Application of a Coupled Digital Image Correlation and Discrete Element Method Approach to Model Low Temperature Asphalt Concrete Fracture,” 8th RILEM International Conference on Mechanisms of Cracking and Debonding in Pavements, Nantes, France, Issue 13, 2016, pp. 713-718.
95. Sun, Z., Behnia, B., Buttlar, W.G., and H. Reis “Assessment of Low-Temperature Cracking in Asphalt Concrete Pavements Using an Acoustic Emission Approach,” 8th RILEM International Conference on Mechanisms of Cracking and Debonding in Pavements, Nantes, France, Issue 13, 2016, pp. 657-663.
96. Hill, B.C., Wang, H., and W.G. Buttlar, “Effects of Recycled Shingle and Virgin Asphalt Binder Mixing on Mixture Performance,” RILEM International Conference on Mechanisms of Cracking and Debonding in Pavements, 8th, Nantes, France, Issue 13, 2016.
97. Sun, Lihui, Behnia, B., Buttlar, W.G., and Reis, H., Acoustic Emission Low-Temperature Performance Grade Evaluation of Asphalt Pavements In Roadways,” to be presented at the ASME 2018 International Mechanical Engineering Congress and Exposition (IMECE2018), Pittsburgh, Pennsylvania, November 9-15, 2018. Paper No.: IMECE2018-86066.

d. Invited Lectures

Title	Conference	Location	Year	#
“Micromechanical Modeling of Hot-Mix Asphalt”	Invited Lecture, Discrete Modeling Conference, Army Corps of Engineers Invited Lecture	Vicksburg, MS,	1999	1
“Performance-Based System for the Prediction of Thermal Cracking in Asphalt Pavements: A Ten-Year Retrospective”	Invited Lecture	University of Minnesota	2000	2
“Potential Applications of the Hollow Cylinder Tensile Tester as a simple Performance Test as a Simple Performance Test”	TRB Special Session on Performance Tests Invited Lecture		2002	3
“NSF GOALI Reflective Crack Study” “Micromechanics and its Application in Asphalt Pavements”	Ecole National des Travaux Publics Invited Lecture	Lyon, France (2 Lectures)	2005	4
Simulation of Asphalt Concrete Modulus and Fracture using Discrete and Finite Element techniques	Invited Lecture	Louisana State university	2004	5
“Micromechanics (of Asphalt Concrete Materials)”	TRB Conference Session on Emerging Models in Asphalt Materials Invited Lecture Asphalt Materials,		2005	6
“NSF GOALI Reflective Crack Study”	Invited Lecture	University of Parma, Italy	2005	7
“DEM Modeling of Asphalt Materials” “Cohesive Zone Modeling and Associated HMA Fracture Tests”	Invited Lecture	University of Nottingham, England (2 Lectures)	2005	8
“Fracture Studies using Finite and Discrete Element Modeling”	Invited Lecture	Delft Technical University, The Netherlands	2005	9
“Recent Advances in Micromechanical Modeling of Asphalt Concrete” Mini-Symposium on Advances in Pavement Mechanics	Keynote Speaker, Eighth U.S. National Congress on Computational Mechanics (USNCCM8),		2005	10
“Discrete Element Modeling of Asphalt Concrete”	Invited Lecture	Tonji University, Shanghai China	2005	11
“Micromechanical Modeling of Asphalt Mastics and Mixtures”	Keynote Speaker, 15th U.S. National Congress of Theoretical and Applied Mechanics (15th USNCTAM), Mechanics of Flexible Pavements Symposium		2006	12

Title	Conference	Location	Year	#
“Fracture Modeling of Asphalt Concrete Using Discrete Element Method”	Invited Lecture,	University of California, Davis	2007	13
Invited Lectures at Symposia Workshops, National Laboratories, and Technical Conferences				14
“Experimental Validation of the PQI Inductive Density Gage”	Invited Lecture, IDOT Materials Conference		1998	15
“Field Validation of the PQI Inductive Density Gage”	Invited Lecture, IDOT Implementation Conference		1998	16
“End-Result Statistical Specifications”	Invited Lecture, IDOT QC/QA Conference		1998	17
“The Rantoul NAC Demonstration Project”	Invited Lecture, FAA Great Lakes Conference		2000	18
“The Hollow Cylinder Tensile Tester”	Invited Lecture, Nottingham Symposium on Pavements, NCPE Inauguration		2001	19
“Evaluation of Reflective Crack Control Policy”	Invited Lecture, Bituminous Paving Conference	Urbana, IL	2001	20
“The Greater Peoria Regional Airport Taxiway E Rehabilitation”	Invited Lecture, FAA Great Lakes Conference	Great Lakes, Michigan	2003	21
“Evaluation of Reflective Crack Control Policy in Illinois”	Invited Lecture, IDOT Materials Conference		2003	22
“Reflective Cracking Studies for Airfield Pavements: An Integrated Approach”	Invited Lecture, AAPT Symposium on Airfield Pavements		2004	23
“Micromechanical Modeling Applications in Asphalt Materials and Flexible Pavements”	Keynote Speaker, CPATT Inaugural Symposium	Waterloo, Canada	2004	24
“Detection of Recycled Asphalt Pavement (RAP) in Bituminous Mixtures”	Invited Lecture, Bituminous Paving Conference	Urbana, IL	2004	25
“NSF GOALI Reflective Crack Study” “Micromechanics and its Application in Asphalt Pavements” “Detection and Quantification of RAP in Asphalt Mixtures”	Invited Lecture, Laboratory Central des Ponts et Chausees (LCPC),	Nantes, France (3 Lectures)	2005	26
“NSF GOALI Study: Modeling Reflective Crack Mechanisms”	Invited Lecture, OTEC Transportation Conference		2005	27
“Reflective Crack Relief Interlayers”	Invited Lecture, Asphalt Conference	Univ. of Missouri-Rolla	2005	28

Title	Conference	Location	Year	#
“Advanced Fracture Tests and Models for Asphalt Concrete”	Invited Lecture, IJRMPD Editors Symposium,	Shanghai, China	2005	29
“Modeling Developments in FHWA Pooled Fund Study on Low-Temperature Cracking”	Keynote Speaker, ISAP Thermal Cracking Workshop	Quebec, Canada	2006	30
“Reflective Crack Relief Interlayers”	Invited Lecture, PAIKY 2007 Conference	Louisville, KY	2007	31
Symposium on Asphalt Pavement Design & Performance	Invited Lecture, The Nottingham Transportation Engineering Centre, International		2007	32
“Fracture Testing for Low-Temperature Asphalt Specifications”	Invited Lecture, Canadian Asphalt Paving Association	Toronto, Canada	2008	33
“Accelerated Pavement Testing of Reflective Cracking”	Invited Lecture, CSIR Seminar	Pretoria, South Africa	2009	34
"A Practical Fracture Test for Asphalt Concrete and its Application to Sustainable Transportation Infrastructure Systems"	Invited Departmental Lecture	Michigan Technological Institute	2010	35
"Verification and Validation in Pavement Engineering"	Invited Lecture, LNEC Seminar	Lisbon, Portugal	April, 2010	36
"New Tools for Achieving Durable, Well-Bonded Asphalt Overlays"	Upper Midwest Materials Conference	Houghton, MI	Nov, 2010	37
"Development of Online Gradation Course"	97th Annual Transportation and Highway Engineering Conference	Urbana, IL	Feb, 2011	38
"Asphalt Pavement Cracking Research: 20-Year Retrospective"	75th Annual IACE Conference	Springfield, IL	Mar, 2011	39
"Field Experience and Lab Testing of Fine-Graded Mixes"	Bituminous Paving Conference	Urbana, IL	Dec, 2011	40
"3D GFEM Modeling of Reflective Cracking in Airport Pavements and Full-Scale Testing"	Erasmus Mundus In Computational Mechanics: Ecole Centrale des Nantes	Nantes, France	2011	41
"Development of Fracture Energy Based Interface Bond Test for Layered Pavements"	Rocky Mountain Asphalt Conference	Denver, CO	Feb, 2012	42
"Design of Overlays in the USA"	National Reflective Cracking Seminar	Universidad Technica Federico Santa Maria, Valparaiso, Chile	May, 2012	43

Title	Conference	Location	Year	#
"Implementation of Fracture-Energy Based Interface Bond Tests"	Rocky Mountain Asphalt Conference	Denver, CO	February, 2013	44
"The Future of Online Engineering Education"	Invited College of Engineering Lecture, Purdue University	West Lafayette, IN	April, 2013	45
"Advances in Pavement Cracking Studies in the US"	Kangwang National University, RMPD Asphalt Symposium	South Korea	February, 2014	46
"Advances in Asphalt Pavement Cracking Studies in the US"	Invited lecture for Honorable Visiting Professor Investiture	Chang'An University, Xi'An, China	July, 2014	47
McGovern, M., and Buttlar, W.G., and Reis, H, "Characterization of oxidative aging in asphalt concrete using a non-collinear ultrasonic wave mixing approach"	Invited Presentation, Special Section No. 11 Titled: Precursor to Damage State Quantification in Materials, (organized by Professors Sourav Banerjee and Antonios Kontsos), 51st Society of Engineering Science Annual Technical Meeting	Purdue University	October, 2014	48
"Advances in Pavement Cracking Research in the US"	EMPA, RMPD Symposium on Pavements	Zurich, Switzerland	February, 2015	49
"Building Rut and Crack Resistance into Mixture Design"	ICAT Conference	Bradley University	April, 2015	50
"Low-Temperature Cracking and HPAC"	HPAC Workshop, ETS	Montreal, Canada	2016	51
Keynote: "Recent Advances in Low-Temperature Cracking Research in the US"	ICTIM Conference, China	Chang'An University, Xi'An	2016	52
"Illinois Tollway I-88 GTR 2016 Field Trials: Mixture Performance Testing"	7th RMAC Conference	Ann Arbor, MI	2016	53
"Illinois Tollway I-88 GTR 2016 Field Trials: Mixture Performance Testing"	Annual Meeting of the Association of Asphalt Paving Technologists	Newport Beach, CA	2016	54
"Advanced Testing, Modeling and Field Installation of Three Ground-Tire Rubber Modified Asphalt Mixture Systems"	The 111 Conference	Chang'An University, Xi'An, China	2017	55
"Recent Advances in Low-Temperature Cracking Research in the US"	Beijing University of Science and Technology	Beijing, China	2016	56
"Advanced Testing, Modeling and Field Installation of Three Ground-Tire Rubber Modified Asphalt Mixture Systems"	Hong Kong Polytechnic Univ.	Hong Kong, China	2017	57

Title	Conference	Location	Year	#
"Advanced Testing, Modeling and Field Installation of Three Ground-Tire Rubber Modified Asphalt Mixture Systems"	Beijing University of Civil Engineering and Architecture	Beijing, China	2017	58
"Illinois Tollway I-88 GTR 2016 Field Trials: Mixture Performance Testing"	ICAT Conference	Bradley University, Peoria, IL,	2017	59
"Development and Implementation of Disk-Shaped Compact Tension (DC(T)) Test to Control Various Cracking Modes in Asphalt Pavements"	2018 TRB Meeting, Workshop	Washington, D.C.	2018	60
Applications of Balanced Mix Design in Developing Countries	RMPD Symposium at University of Pretoria	Pretoria, South Africa	2018	61
From Rubbish to Roads	MU Engineering Research Day	Columbia, MO	2018	62
Round-Table Discussion on Smart City Pavement Applications	International Society for Asphalt Pavements	Fortaleza, Brazil	2018	63
Recent Advances in Balanced Mix Design for Modern, Heterogeneous Asphalt Mixes in the Context of Future Cities	Hong Kong Polytechnic Univ.	Hong Kong	2018	64
History of Asphalt	Chang'An University	Xi'An, China	2018	65
Recent Advances in Balanced Mix Design	Jinan University	Jinan, China	2018	66
Modernizing Infrastructure with Citizen Input and Transportation Innovation	University of Science and Technology	Beijing, China	2018	67
Design of Crumb-Rubber Modified Asphalt using Balanced Mix Design	Colorado Waste Tire Recycling Conference	Denver, CO	2018	68
Intelligent Infrastructure for Tomorrow's Smart Cities	Rhode Island Transportation Conference	Providence, RI	2018	69
Performance Testing, Validation of Modern, Heterogeneous Asphalt Mixes in Missouri	Missouri S&T Asphalt Conference	Rolla, MO	2018	70
Mizzou MAPIL Update	MAPA Annual Conference	Columbia, MO	2019	71
Recent Advances in Balanced Mix Design for Modern, Heterogeneous Asphalt Mixes	RMPD 20th Anniversary Symposium	Lisbon, Portugal	2019	72

e. Other Publication and Products

1. Patents

"Compact Hollow Cylinder Tensile Tester," Test Quip, Inc. /UIUC, US Patent # 6,595,068 B2 (2004), Co-Invented with Mr. Tom Brovold of Test Quip, Inc.

United States Patent: #US 9,605,104 B2 Apeagyei et al., “Antioxidant Treatment of Asphalt Binders,” Inventors: Alex K. Apeagyei, William G. Buttlar, Barry J. Dempsey Date of Patent: March 28, 2017

2. Magazine Articles

1. Buttlar, W.G., "Green and Good: Addressing Cracking in Recycled Asphalt Mixes," Roads and Bridges, February, 2015.
2. Asphalt Academic, Asphalt Institute, http://asphaltmagazine.com/billbuttlar/

5. Grants, contracts and gifts

a. For Research

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's
1996-2005	IDOT R23 End-Result Specifications	IDOT	$800,000	$800,000	1
1998-2002	Hollow-Cylinder Tensile Test	Test Quip, Inc.	$150,000	$150,000	1
1998-1999	Evaluate thermal Cracking at Mn/Road	IDOT	$27,000	$27,000	1
1999-2002	Rehabilitation Alternatives For Runway 18-36 at Rantoul	Illinois Division of Aeronautics (IDOA)	$120,000	$120,000	3
1999-2001	National Airport Pavement Test Facility: Materials Evaluation	FAA Center of Excellence for Airport Pavements	$310,000	$60,000	3
1999-2003	Reflective Crack Control Systems For Peoria Regional Airport	Crawford, Murphy, and Tilly, Inc./ IDOA	$200,000	$200,000	3
2002-2003	Detection of RAP in Bituminous Mixtures	ITRC	$120,000	$80,000	3
2001-2007	Analysis of Flexible Overlay Systems for Airport Pavements	FAA Center of Excellence for Airport Pavements	$365,000	$333,000	1
2002-2005	Mechanistic Development of Reflective Crack Control Procedures	NSF GOALI (with Koch Materials Company)	$595,000	$300,000	2
2002-2006	Strata Reflective Cracking Study	Koch Materials Company	$240,000	$120,000	2
2002	Hollow Cylinder Polymer Modification Study	Federal Highway Administration	$12,600	$12,600	1
2004-2006	Pooled Fund Study on Thermal Cracking of Asphalt Pavements-Phase I	Federal Highway Administration	$750,000	$94,000	2
2004	MTS Testing System Equipment Gift	Test Quip, Inc.	$15,000*	$15,000	1

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's
2005-2008	Reflective Cracking Study, Mechanisms and LCCA	IDOT - ICT	$330,000	$165,000	2
2006-2008	Reflective Cracking and Grooving of Airfield Asphalt Pavements	O'Hare Modernization Research Project	$150,000	$75,000	2
2006-2008	Optimized Material Property Targets, Thicknesses and Layer Positioning for STRATA® RCRS-based Overlay Systems	SemMaterials Co.	$749,000	$726,500	1
2006	Gyratory Compactor and Asphalt Lab Equipment Gift	SemMaterials Co.	$30,000*	$30,000	1
2008-2011	Pooled Fund Study on Thermal Cracking of Asphalt Pvts-Phase II	Federal Highway Administration	$550,000	$42,500	5
2008-2009	Development of a Finite Element Based Thermal Cracking Performance Prediction Model	Federal Highway Administration:NexTrans	$55,000	$27,500	2
2009-2010	Development of New Methodologies for Mechanistic Design of Asphalt Overlays	FAA Center of Excellence	$85,000	$15,000	2
2009-2012	Thermal Cracking Performance Prediction and Asset Management Integration	Federal Highway Administration: NexTrans	$160,000	$107,000	2
2009-2010	An Acoustic Emissions-Based Test to Determine Asphalt Binder and Mixture Embrittlement Temperature	NCHRP IDEA	$240,160	$120,080	2
2009-2010	Crack Resistance and Bonding Optimization Methods for Thin and Ultra-thin Bonded Wearing Courses	Road Science, LLC	$113,320	$113,320	1
2010-2011	Crack Propagation in Asphalt Pavement and Low Temperature Resistance	TOTAL	$85,322	$85,332	1
2010-2012	GOALI: Hybrid Failure Approach using Digital Image Correlation for Functionally Graded Thin-Bonded Overlays	NSF	$693,196	$693,196	1
2010-2011	Laboratory Support of Warm-Mix Project at ORD	OMP	$70,000	$70,000	1
2009-2012	R27-79A, Designing, Producing & Constructing Fine-Graded Hot Mix Asphalt on IL Roadways	IDOT-ICT	$644,578	$600,000	2

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's
2009-2010	Feasibility of Warm-Mix Asphalt	FAA	$67,000	$67,000	1
2009-2011	Dwight Eisenhower Graduate Fellowship Award	NHI/FHWA	$62,300	$62,300	1
2009-2012	R27-73, Distance Technology Transfer Course Content Development	IDOT-ICT	$300,000	$84,505	2, w/ Prof. James Hall, UIS
2011-2012	Crack Resistance and Bonding Optimization Methods for Thin and Ultra-thin Bonded Wearing Courses: Phase II.	Road Science, LLC	$137,146	$137,146	1
2011-2013	Laboratory and Field Support of Warm-Mix Project at ORD	OMP	$190,000	$190,000	1
2012-2013	Testing, Modeling, and Support for FAA Reflective Cracking Study	FAA	$127,000	$100,000	2
2013-2014	An Acoustic Emissions Based Test to Determine Asphalt Binder and Mixture Embrittlement Temperature	NCHRP: IDEA	$125,000	$62,500	2
2013-2015	ECR: Strategic Integration of MOOCs into Graduate and Professional STEM Programs in 21st Century Research Universities	NSF	$300,000	$270,000	3
2014-2017	Performance Characterization of Green Approaches in Airfield Asphalt Pavements: UIUC-OMP Research Collaboration	OMP	$300,000	$300,000	1
2014-2015	Testing, Modeling, and AE Crack Detection for FAA Reflective Cracking Study	FAA	$259,000	$259,000	3
2015-2018	Making Way for a New Generation in STEM: Proposal for the Illinois Sloan University Center of Exemplary Mentoring	Sloan Foundation	$1,000,000	N/A	4
2015-2016	Testing and Analysis to Support Green Initiatives at the Illinois State Toll Highway Authority	ISTHA	$168,000	$168,000	1

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's
2016-2017	Performance of Modern Recycled Asphalt Mixes in Missouri (Ground Tire Rubber, Recycled Roofing Shingles, and Rejuvenators)	USDOT MTC/MoDOT	$470,000	$330,000	1
2017-2020	Development of Performance-Related Specifications for Asphalt	Illinois Toll Highway Auth.	$425,000	$425,000	1
2016-2018	PCI Evaluations for GA Airports	MoDOT/ARA	$41,000	$41,000	1
2018-2020	Support for Balanced Asphalt Mixture Design Specification Development in Missouri	MoDOT	$283,609	$283,609	1
2018-2020	Understanding and Improving Heterogeneous, Modern Recycled Asphalt Mixes	MoDOT	$543,534	$307,051	2

b. For Instruction

Years (Inclusive)	Brief Title or Description	Source of Funds	Total Funding	Funds Allocated to this prof	#PI's
2007	Transportation Instructional Lab Renovation	College of Engineering	$50,000	$50,000	1
2010	Feasibility of Online MSCE Program in CEE at UIUC	CEE Dept.	$2000	$2000	1

6. Areas of Research

1. Pavements and Transportation Materials
2. Mechanical Testing and Characterization of Asphalt Binders and Mixtures
3. Intelligent Infrastructure
4. Smart Materials
5. Smart Cities
6. Sustainable Infrastructure Materials and Systems
7. Waste Recycling for Emerging Circular Economies
8. Pavement Fracture
9. Micromechanics
10. Pavement Instrumentation
11. Finite Element Analysis and Constitutive Model Development
12. Numerical Modeling
13. Pavement Management
14. Transportation Policy
15. Non-Destructive Testing and Evaluation
16. Online Education
17. Strategic Integration of MOOCs at Research Universities

7. Graduate Thesis Research Advising

a. M.S. Thesis Students

Student Name	Year Graduated	Thesis Title	Placement
Matthew Powers	1997		Consultant
Diyar Bozkurt	1997		MACTECH
Michael Harrell	1999		ARA, Inc.
Angela Waldhoff	2001	Investigation of Thermal Cracking at MN/Road Using the Superpave IDT	Applied Pavement Technologies, Inc.
Sean Smith	2001		CM&T Engineers
John Hausman	2001		ARA, Inc.
Jason Bauer	2002		Consultant
Anshu Manik	2002		Wolfram Research
Dan Sherman	2003		Consultant
Paul Dalbey	2003		ARA, Inc.
Eshan Dave	2004	Micromechanical method for forensic RAP amount determination	Asst. Prof, Univ of Minnesota-Duluth
Ajay Singh	2005		ARA, Inc.
Carmine Dwyer	2005		ARA, Inc.
James Robinson	2008		Consultant
Sarfraz Ahmed	2008	Development of Compact Tension Fracture Test for Asphalt Concrete	Asst. Prof, College of Civil Engineering, Risalpur Campus National University of Sciences and Technology, Pakistan
Nachian Chiawat	2010	Development of Fatigue-Fracture Relationships for Asphalt Concrete	PhD Student, UIUC

Student Name	Year Graduated	Thesis Title	Placement
Brian Hill	2011	PERFORMANCE EVALUATION OF WARM MIX ASPHALT MIXTURES INCORPORATING RECLAIMED ASPHALT PAVEMENT	PhD Student, UIUC
Stephanie Graves	2012	ELECTRO-OPTICAL SENSOR EVALUATION OF AIRFIELD PAVEMENT	Boeing, Inc., Seattle, WA
Dave Simpson	2012	BIKE TRAIL DESIGN GUIDE FOR ILLINOIS	Instructor, US Air Force, Dayton, OH
Nathan Keebede	2012	DEVELOPMENT OF AN ALTERNATIVE TEST TO OBTAIN ASPHALT MIXTURE CREEP COMPLIANCE AT LOW TEMPERATURES	Applied Paving Technologies, Urbana, IL
Adam Beach	2013	Warm-mix Mixture Performance Evaluation	Marathon Petroleum Co., Findlay, OH
John Stribling	2016	Improvements to Pavement Roughness Estimation using Smart Phones	US Air Force
Punyasloth Rath	2017	Performance Evaluation of RAS and GTR Mixtures for Illinois Tollway	PhD Program
Ms. Loreto Urra-Contreras	2018	Support for Development of Balanced Mix Design in Missouri	In Matriculation (2018-Present)
Ms. Shishi Chen	2019	Pavement for a Circular Economy	MS-PhD Program

b. Ph.D. Thesis Students

Student Name	Year Graduated	Thesis Title	Placement
Ghazi G. Al-Khateeb	1999	Development of a Hollow-Cylinder Tensile Tester to Obtain Fundamental Mechanical Properties of Asphalt Paving Mixtures	Professor, Jordan University of Science and Technology
Diyar Bozkurt	2002	Three Dimensional Finite Element Analysis to Evaluate Reflective Cracking Potential in Asphalt Concrete Overlays	Mactech Engineers
Zhanping You	2003	Development of Micromechanical Modeling Approach to Predict Asphalt Mixture Stiffness Using the Discrete Element Method	Professor, Michigan Tech University

Student Name	Year Graduated	Thesis Title	Placement
Fang-Ju Katie Chou	2004	Application of Fracture Mechanics to Assess Reflective Cracking Potential in Airfield Pavements	Hatchmodd-McDonald
Alex Apeagyei (Co-Advised with Prof. B. Dempsey)	2005	Development of Antioxidant Treatments for Asphalt Binders and Mixtures	Virginia Transportation Research Council, Research Scientist
Anshu Manik	2005	Comprehensive Simulation for End-Result Specification Development	Wolfram Research
Michael P. Wagoner	2006	Fracture Tests for Bituminous-Aggregate Mixtures: Laboratory and Field Investigations	ATK
Hyunwook Kim	2007	Investigation of Toughening Mechanisms in the Fracture of Asphalt Concrete Using the Clustered Discrete Element Method	POSCO Engineering Group, South Korea
Andrew Braham	2008	Fracture Characteristics of Asphalt Concrete in Mode I, Mode II, and Mixed Mode	Assistant Professor, University of Arkansas
Minkyum Kim	2009	Three-Dimensional Finite Element Analysis of Flexible Pavements Considering Nonlinear Pavement Foundation Behavior	Visiting Asst Prof., LSU
Eshan Dave (Co-Advised with Prof. G. Paulino)	2009	ASPHALT PAVEMENT AGING AND TEMPERATURE DEPENDENT PROPERTIES USING FUNCTIONALLY GRADED VISCOELASTIC MODEL	Assistant Professor, University of Rhode Island
Sarfraz Ahmed	2010	Fracture Characterization of Thin Bonded Asphalt Concrete Overlay Systems	Asst. Prof, College of Civil Engineering, Risalpur Campus National University of Sciences and Technology, Pakistan
Behzad Behnia	2013	Acoustic Emission Test and Analysis System for Fracture Characterization of Asphalt Pavements and Materials	Assistant Professor, Western New England University
Nachian Tor Chiawat	2014	Experimental evaluation of monotonic and cyclic fracture behavior using disk-shaped compact tension test and released energy approach	Thailand Government, Road Authority
Salman Hakimzadeh	2015	Development of Fracture-Energy Based Test to Characterize Bonding Between Pavement Layers	Research Director, Southwind RAS, LLC
Md Shahidul Islam	2015	Pavement Cracking Prediction and Asset Management System	Applied Research Associates
Brian Hill	2016	Fracture Measurement and Prediction in Rate-Dependent, Functionally-Graded Materials Systems	Illinois Department of Transportation

Student Name	Year Graduated	Thesis Title	Placement
He Wang	2018	Low-Temperature Cracking Evaluation for Eco-Friendly Asphalt Pavement Solutions	CalTrans
Punyasloth Rath	2021	Performance-Related Specifications for Asphalt	
Hamed Majidifard	2020	Modern, Heterogeneous Recycled Mixtures and Machine Learning	
Behnam Jahangiri	2020	Performance Specifications and Balanced Mix Design for the Illinois Tollway	
Ms. Shishi Chen	2019	Pavement for a Circular Economy	MS-PhD Program

8. Editorships of Journals or Other Learned Publications

1. Proceedings of the ASCE Airfield Pavements Conference, "Advancing Airfield Pavements," ed. W.G. Buttlar and J.E. Naughton, 2001
2. International Journal of Road Materials and Pavement Design, Associate Editor 2005-2014
3. International Journal of Road Materials and Pavement Design, Special Issue on Numerical Modeling and Simulation, ed. W.G. Buttlar and E.V. Dave, 2010
4. Journal of Traffic and Transportation Engineering, Editoral Board, 2013-Present
5. International Journal of Road Materials and Pavement Design, Editor-In-Chief, 2014-Present

9. Post-doctoral Associates and Visiting Scientists

Name	Title (percent time)	Country of Origin	Permanent Employer	Years
Dr. Jiwon Kim	Post-Doctoral Research Assistant			1999-2001
Dr. Jian S. Chen	Visiting Assistant Professor f Civil Engineering Professor	Taiwan	National Cheng Kung University, Taiwan	2002-2003
Dr. Diyar Bozkurt	Post-Doctoral Research Assistant	Turkey	MD DOT	2002-2003
Dr. Huiming Yin	Post-Doctoral Research Assistant	China	Columbia University	2004-2006
Dr. Alex Apeagyei	Post-Doctoral Research Assistant	Ghana	The University of Nottingham	2006-2008
Dr. Michael Wagoner	The University of Nottingham	West Virginia	ATK	2007
Dr. Eshan Dave	The University of Nottingham	India	Michigan Tech	2009-2010
Dr. Vivian Ramos	Visiting Scientist	Brazil	THE FEDERAL UNIVERSITY OF ALAGOAS	
Ms. Weisi Ma	Visiting Scholar	China	Chang'An University	2015-2017
Dr. Amir Alavi	Post-Doctoral Research Assistant	Iran, PhD at Michigan State	Mizzou	2016-2017

Name	Title (percent time)	Country of Origin	Permanent Employer	Years
Dr. Bo Li	Visiting Professor	China	Yangzhou University	2017-

10. Other Scholarly Activities

a. Conferences Organized or Chaired

1. Director, Transportation Highway and Engineering Conference, Urbana, IL 2002-Present (A Record 1200+ Participants Attended the 100th Annual THE Conference, March, 2014)
2. Organizer, RILEM Annual Combined Meeting of TC-CAP/TC-ATB, Urbana, IL, 2006
3. Session Chair, Federal Aviation Administration, The Worldwide Airport Technology Transfer Conference, Atlantic City, NJ 2007
4. Co-Organizer, Mini-Symposium on Pavement Mechanics and Simulation 9th United States National Congress on Computational Mechanics (USNCCM-9), San Francisco, CA (with Professor John Bolander, UC Davis) 2007
5. Overseas Corresponding Member, Transport (Journal), Institution of Civil Engineers (ICE), United Kingdom, 2007-2009
6. Contributing laboratory to the successful NSF MRI proposal entitled, "MRI: Acquisition of a Multi-Length Scale Ultra High-Resolution X-Ray Nanotomography Instrument." Budget: $1,998,500.00. Term: 6/1/07-5/31/08. PI: Paul Braun. Proposed use: Nano-scale characterization and simulation of deterioration mechanisms in asphalt concrete paving mixtures. 2007
7. Session Chair, Sixth RILEM International Conference on Cracking in Asphalt Pavements, Chicago, IL June 2008.
8. Scientific Committee, Sixth RILEM International Conference on Cracking in Asphalt Pavements, Chicago, IL June 2008.
9. Co-Organizer, Mini-Symposium on Pavement Mechanics and Simulation 10th United States National Congress on Computational Mechanics (USNCCM-10), Columbus, OH (with Professor John Bolander, UC Davis) 2009
10. Scientific Committee, 7th International RILEM Symposium on Advanced Testing and Characterization of Bituminous Materials, Rhodes, Greece, May 2009.
11. Scientific Committee, 3rd International Conference on Asphalt Materials August 6-7, 2009 Qingdao, Shandong Province. 2009
12. Co-Organizer, Mini-Symposium on Pavement Mechanics and Simulation 10th United States National Congress on Computational Mechanics (USNCCM-11), Columbus, OH (with Professor John Bolander, UC Davis), 2011
13. Scientific Committee, Seventh RILEM International Conference on Cracking in Asphalt Pavements, Delft, Netherlands, 2012
14. Co-Chair, 8th RILEM International Conference on the Mechanisms of Cracking and Debonding in Asphalt Pavements, Nantes, France, June 2016
15. Co-Organizer, Mini-Symposium on Pavement Mechanics and Simulation 12th United States National Congress on Computational Mechanics (USNCCM-12), Raleigh, NC, 2013
16. Organizer, RILEM Annual Combined Meeting of TC-MCD/TC-SIB, Chicago, IL, September 2013
17. Organizer, Graduate College Workshop on Online Graduate Education, April 2013
18. Chair, "NSF Workshop: Envisioning the Future of Online Graduate Education at the 21st-Century Research University," April 2013.
19. Chair, "NSF Symposium: Envisioning the Future of Online Graduate Education at the 21st-Century Research University," November 2013.
20. Campus co-lead, "NTU-UIUC Forum on Smart Cities/Healthy Communities," Taipei, Taiwan, November 2014
21. Co-chair, "8th International Conference on Mechanisms of Cracking and Debonding in Pavements," Nantes, France, June 2016.

22. Campus co-lead, "NTU-UIUC Forum on Smart Cities/Healthy Communities," Urbana, IL, October 2015
23. Co-Organizer, Mini-Symposium on Pavement Mechanics and Simulation 13th United States National Congress on Computational Mechanics (USNCCM-13), San Diego, CA, 2015

b. Other Scholarly Activities

1. Test and Specification Creator: ASTM D7313-07b Specification, "Standard Test Method for Determining Fracture Energy of Asphalt-Aggregate Mixtures Using the Disk-Shaped Compact Tension Geometry" Co-Authored with M. Wagoner, ASTM International (Formerly American Society for Testing and Materials) – Sets National and International Testing and Materials Standards. Test Developed at UIUC (Buttlar and Wagoner), as part of NSF GOALI study on reflective cracking. www.astm.org/DATABASE.CART/REDLINE_PAGES/D7313.htm
2. Test and Specification Creator: AASHTO T 322-03 Specification (TP09), Co-Author. "Determining the Creep Compliance and Strength of Hot-Mix Asphalt (HMA) Using the Indirect Tensile Test Device." American Association of State Highway and Transportation Officials – Sets National Standards related to Road Materials and Transportation Facilities.

c. Service

1. Professional Societies

1. Transportation Research Board, AFK-50 Committee Member 1997-2006 Secretary of Committee, 1998-2006
2. RILEM Committee TC-182 on Performance Testing and Evaluation of 2002-2004 Bituminous Materials, Member
3. Federal Aviation Administration, Airfield Technology Transfer Conference, 2002 Atlantic City, NJ. Technical Committee.
4. RILEM Performance Testing and Evaluation of Bituminous Materials 2002-2003 (Zurich, Switzerland, April 2003). Scientific Committee.
5. RILEM 5th International Conference on Cracking in Pavements 2003-2004 (Limoges, France, May 2004), Scientific Committee
6. RILEM Cracking in Pavements Conference (Chicago, IL, June 2008), 2006-Present Scientific Committee Member
7. International Society for Asphalt Pavements, Committee on Constitutive 2003-Present Modeling of Asphalt Materials, Committee Member
8. RILEM Committee CAP, Subcommittee Chair, Fracture Testing (TG2) 2004-Present
9. RILEM Committee CAP, Member, Subcommittee on Fracture Modeling (TG3) 2004-Present
10. RILEM Committee ATB, Advanced Testing and Characterization of 2004-Present Bituminous Materials, Member of 3 Subcommittees
11. Transportation Research Board, AFK-40 Committee Member 2011-2017
12. RILEM Committee MCD, Chair, 2011-2018
13. FHWA Expert Task Group, Pavement Modeling, Member, 2008-2013
14. Association of Asphalt Paving Technologists, Board of Directors, Member at Large (elected by members), 2013-2014
15. Association of Asphalt Paving Technologists, Board of Directors, Member at Large (elected by members), 2016-2017
16. National Asphalt Pavement Association, Technology Chair, Committee on Future of Asphalt
17. Trustee, ASCE Region 7, Council of Trustees, ASCE Foundation, 2017-Present

2. University

a. Department

1. Faculty Lead, Center of Excellence for Airport Technology 2005-Present
2. Ad-Hoc Committee for 3rd Year Review, Dr. Armando Duarte 2007 Ad-Hoc Promotion Committee, Dr. Eberhard Morgenroth 2006
3. Advisory Committee, Chair 2008-2009
4. Ad-Hoc Promotion Committee for Dr. Armando Duarte, Chair 2009
5. Ad-Hoc Promotion Committee for Dr. Yanfeng Ouyang, Member, 2010
6. Ad-Hoc Promotion Committee for Dr. Jeff Roesler, Member, 2010
7. CEE Advisory Committee, 2010-Present
8. CEE Online Committee, Chair, 2010-2011
9. ICT Search Committees, Member of numerous search committees between 2008-Present
10. Chair, Ad-Hoc Promotion Committee for Dr. Bassem Andrawes
11. Chair, Ad-hoc Promotion Committee for Professor Dan Kuchma, CEE
12. Chair, CEE Workload Policy Taskforce, MU, 2016-2018

b. College

1. CEE Head Search Committee, Member 2009
2. Member, College of Engineering Leadership Committee (on online Education), 2012-2016
3. UIUC College of Engineering Executive Committee, Member, 2013-2014 (elected position)
4. Chair, Space Committee, College of Engineering, 2018-Present
5. Member, Engineering Council for Research Excellence (Research Productivity in Top 10% in College of Engineering)

c. Campus

1. UIUC Faculty Senate 2005-2012
2. UIUC Faculty Senate Subcommittee on Operations 2008-2010
3. Workshop Chair, NSF National Workshop on Online Graduate Education, April 2013
4. Co-Chair, Grad College Committee on External Education and External Degrees (CEEED), 2011-2014
5. Ex-officio member, Grad College Executive Committee, 2011-Present
6. Member, Grad College Subcommittee (of Executive Committee), 2011-2014
7. Chair, Campus Working Group on Online Graduate Education, 2012-2016
8. Member, College of Engineering Committee on Expanding Presence in Chicago ("Chicago Labs"), 2012-2015
9. Panel Moderator and Panelist, Faculty Job Search Retreat, Sponsored by the Graduate College, July 19, 2012
10. Google and Intel Fellowship Panelist, Graduate College, Spring 2012
11. Campus IGERT Competition Panel Member, Graduate College, Spring 2012
12. Campus IGERT-CIF Competition Panel Member, Graduate College, Spring 2012
13. Ex-officio member, Faculty Senate Educational Policy Committee, 2012-2013
14. MOOC Course Review Committee, Commissioned by Provost Adessida, Member, 2012-2016
15. UI-Labs/Chicago Engagement Working Group, Commissioned by Vice Chancellor for Research Schiffer, Member, 2012-2016
16. UIUC-UIC-UIS Online Education Working Group, Member, 2011-2013
17. MOOC Strategy Advisory Committee, Commissioned by Chancellor Wise and Provost Adessida, 2013-2016
18. Member, UIUC Faculty Senate, 2013-Present (fourth term)
19. Coordinator, Clean Energy Education Fellowship Program, 2011-2013
20. Organizer and Panel Chair, Campus Workshop on Developing and Delivering Effective Online Instruction, April 2013
21. Co-chair, Campus Leadership Group on Smart Cities/Healthy Cities, 2014-2016
22. Member, Research Incentives Task Force, Commissioned by Chancellor A. Cartwright, 2018-2019

3. Federal and State

1. National Superpave Expert Task Group (Invited Position), Federal Highway Administration, Fundamental Properties and Advanced Modeling 2006-2010
2. Industrial and Professional Advisory Council (IPAC), Penn State College of Engineering and Department of Civil and Environmental Engineering, 2013 - Present
3. Board Member, Kingdom's Cause Community Home Repair NPO, 2013-Present

4. Other Outside Service

1. Reviewer of Technical Papers Submitted for Publications in:
2. Journal of Materials, ASCE
3. Journal of Transportation Engineering, ASCE
4. Journal of the Transportation Research Board
5. Journal of the Association of Asphalt Paving Technologists
6. International Journal of Road Materials and Pavement Design
7. International Journal of Solids and Structures
8. Materials Chemistry and Physics
9. International Journal of Pavement Engineering
10. Materials and Structures
11. Reviewer for Numerous Conferences Related to Asphalt Pavements, Materials, and Pavement Mechanics
12. Strategic Advisory Committee, Project City Smart at U+I Labs, Chicago IL, 2014-Present

d. Improvement Activities

1. General Electric's PE3 Program, "Project for Excellence in 1996-1997 Engineering Education," Offered by the UIUC Teaching College
2. Teaching Academy, Peer Teaching Evaluator, UIUC College of Engineering 1998-2001
3. The Leadership Summit, Willow Creek Association, South Barrington, IL 2003, 2004, 2007, 2008
4. Summit on Online Education, Office of Online and Continuing Education and Provost's Office, 2011
5. Distinguished Teacher Scholar Lunch and Discussion, "How 21st-century Learners Change College Teaching," 2012
6. Designing a Faculty Development Program for Online Education, Office of Online and Continuing Education, 2012
7. Carnegie Mellon University LearnLab Summer Workshop, July 2015

11. Other Instructional Activities

1. Committee Member for Dozens of Prelim and Final Exams 1996-Present CEE Department at UIUC
2. Short Course on "Superpave Technology for the Practitioner," 1999 Co-Developed and Presented with Prof. S. H. Carpenter
3. Guest Lecturer for CEE 210 for Laboratories Related to Asphalt Rheology. 1996-Present Organized and/or Led Approximately Four, Two-Hour Laboratory Sections over Each of the Past 20 Semesters.
4. Short Course on Advanced Models and Tests for Hot-mix Asphalt, Part I 2002 Koch Materials Company, Wichita, KS
5. Short Course Advanced Models and Tests for Hot-mix Asphalt, Part II 2004
6. External Ph.D. Viva Committee, Mr. H. York, University of Nottingham 2005-2006
7. External Ph.D. Examiner, Mr. S. Charmot, University of Utah 2006-Present
8. External Ph.D. Rapporteur, Mr. Brice Delaporte, Ecole National des Travaux Publics 2006-2007
9. External Ph.D. Examiner, Mr. Adam Zofka, University of Minnesota 2007
10. External Ph.D. Viva Committee, Mr. Min-Chih Liao, University of Nottingham 2007
11. Short Course on Reflective Cracking, In Conjunction with RILEM Conference on Cracking in Pavements, Chicago, IL, June 2008

12. External Ph.D. Viva Committee, Mr. Wu Junwei, University of Nottingham 2009
13. Webinar Organizer and Presenter, Transportation Research Board, Understanding Advanced Asphalt Models, 2009
14. Short Course on Reflective Cracking, In Conjunction with Bearing Capacity of Road and Airfield Pavements Conference, Urbana, IL, 2010
15. CEE Online MSCE Program, Grad College CEEED Proposal, April 2011
16. Lead Instructor, 2-Day Workshop on Reflective Cracking, UTFSM, Chile, May 2012
17. Webinar Organizer and Presenter, Transportation Research Board, Mitigating Reflective Cracking in Asphalt Pavements, 2013
18. Online Course Development, CEE 405, Asphalt Materials, w/ Lab, 2014
19. Webinar Presenter, NCHRP 9-57, The Disk-Shaped Compact Tension Test, 2015
20. Online Instructor Training, CEE Online and Engineering Online, Each Semester, 2011-Present
21. External Ph.D. Licentiate Thesis Discussion Leader, Mr. Ibrahim Onifade, KTH, Sweden, May 2015
22. External Ph.D. Licentiate Thesis Discussion Leader, Mr. Yared Dinegdale, KTH, Sweden, May 2015

12. Major Consulting Activities *(past five years)*

1. US RAS Association, Midwest, Chicago, IL, Forensic Investigation of Pavement Cracking
2. Marathon Petroleum Corp.
3. Applied Research Associates
4. STATE Testing, LLC
5. Asphalt Plus, LLC

13. Professional Registrations

Licensed Professional Engineer, State of Illinois 1998-Present License #062-052460

14. Web pages

Full website URL	Text for link
http://engineering.missouri.edu/person/buttlar-bill/ http://engineering.missouri.edu/2016/02/generosity-enables-hiring-of-renowned-pavement-materials-engineer/ www.MAPIL.Missouri.edu	Webpage for William G. Buttlar Glen Barton Chair MAPIL Research Group