Curriculum Vitae

Eshan V. Dave
Associate Professor
Department of Civil and Environmental Engineering
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1. PERSONAL INFORMATION

A. Educational Background

Doctor of Philosophy in Civil Engineering (2009)
University of Illinois, Urbana, IL
Thesis: Asphalt Pavement Aging and Temperature Dependent Property Gradients using Functionally Graded Viscoelastic Model
Co-Advisors: William G. Buttlar and Glaucio H. Paulino (University of Illinois)
Committee Members: Hervé DiBenedetto (University of Lyon, France), Phillip B. Blankenship (Asphalt Institute), and Harry H. Hilton (University of Illinois).

Master of Science in Civil Engineering (2003)
University of Illinois, Urbana, IL
Thesis: Determination of Presence and Amount of Recycled Asphalt Pavement in Asphalt Mixtures.
Advisor: William G. Buttlar (University of Illinois)

Bachelor of Engineering in Civil Engineering (2001)
BVM Engineering College, S P University, Vidhyanagar, India

B. Employment History

Associate Professor (July 2018 – present)
Assistant Professor (January 2015 – June 2018)
Department of Civil and Environmental Engineering, University of New Hampshire

I-SITE FUTURE Visiting Professor (May 2021 – present)
Materials and Structures Department (MAST), Université Gustave Eiffel (France)

Associate Professor (August 2014 – December 2014)
Assistant Professor (August 2010 – July 2014)
Department of Civil Engineering, University of Minnesota Duluth (UMD)

Post-Doctoral Research Associate (August 2009 – July 2010)
Department of Civil and Environmental Engineering, University of Illinois, Urbana, IL

Graduate Assistant (January 2002 – July 2009)
Department of Civil and Environmental Engineering, University of Illinois, Urbana, IL

C. Professional Registration

Engineer in Trainee (EIT) New Hampshire (May 2018)

2. RESEARCH, SCHOLARSHIP AND CREATIVE ACTIVITIES

A. Articles in Refereed Journals (UNH student co-authors underlined; UMD student co-authors *underlined and italicized*)

i. Refereed Journal Articles

1. Hugener, M., D. Wang, A.C. Falchetto, L. Porot, P.K. De Maeijer, M. Oreskovic, S. Margarida, H. Tabatabaee, E. Bocci, A. Kawakami, B. Hofko, A. Grilli, E. Pasquini, M. Pasetto, H. Zhai, H. Soenen, W. Van den bergh, F. Cardone, A. Carter, K. Vasconcelos, X. Carbonneau, A. Lorserie, G. Mladenovic, T. Koudelka, P., Coufalik, R. Zhang, E.V. Dave, G. Tebaldi, "Recommendation of RILEM TC 264 RAP on the Evaluation of Asphalt Recycling Agents for Hot Mix Asphalt," Materials and Structures, 55(2), 31, 2022. https://doi.org/10.1617/s11527-021-01837-0
2. Preti, F., E.V. Dave, E. Romeo, G. Tebaldi, and J.E. Sias, "Plasticity-Based Method for the Design and Analysis of Cold Recycled Pavement Layers," ASTM Journal of Testing and Evaluation, 50(2), 2022 (published online). http://doi.org/10.1520/jte20210198
3. Airey, G. D., G.M. Rowe, J.E. Sias, H. Di Benedetto, C. Sauzeat, and E.V. Dave, "Black Space Rheological Assessment of Asphalt Material Behavior," ASTM Journal of Testing and Evaluation, 50(2), 2022 (published online). http://doi.org/10.1520/jte20210205
4. Mirzaiyanrajeh, D., E.V. Dave, J.E. Sias and P. Ramsey, "Developing a Prediction Model for Low-temperature Fracture Energy of Asphalt Mixtures using Machine Learning Approach," International Journal of Pavement Engineering, 2022 (published online). http://doi.org/10.1080/10298436.2021.2024185
5. Zhang, R., J.E. Sias, and E.V. Dave, "Development of New Performance Indices to Evaluate the Fatigue Properties of Asphalt Binders with Aging," Road Materials and Pavement Design, 23(2), pp. 377-396, 2022. https://doi.org/10.1080/14680629.2020.1826349
6. Diouri, K., A. De, E.V. Dave, J.E. Sias, R.B. Mallick, "Effect of Aging and Temperature on Milling-induced Stresses and Cracks in Hot Mix Asphalt (HMA) Pavements," Construction and Building Materials, 313, 2021. https://doi.org/10.1016/j.conbuildmat.2021.125493
7. Nemati, R., E.V. Dave, and J.E. Sias, "A Generalized Methodology to Develop Mechanistically Informed Asphalt Mixture Layer Coefficients for AASHTO 1993 Pavement Design Approach," Transportation Research Record, 2676(2), pp. 312-324, 2021. https://doi.org/10.1177/03611981211041597
8. Kuchiishi, A.K., K. Vasconcelos, C.C. dos Santos Antão, G. de Souza, E.V. Dave, and L.B. Bernucci, "Impact of Non-Linear Elastic Behavior of Foamed Asphalt Stabilized Mixes on Pavement Structural Performance," ASCE Journal of Materials in Civil Engineering, 33(10), 2021. https://doi.org/10.1061/(ASCE)MT.1943-5533.0003919
9. Haslett, K.E., E.V. Dave, and J.E. Sias, "Assessment of Asphalt Mixture Disk-Shaped Compact Tension Test Indexes for Reflective Cracking Performance," ASTM Journal of Testing and Evaluation, 50(2), 2021 (published online).

http://doi.org/10.1520/jte20210196

10. Zhang, R., J.E. Sias, and E.V. Dave, "Comparison and Correlation of Asphalt Binder and Mixture Cracking Parameters Incorporating the Aging Effect," Construction and Building Materials, 301, 2021. https://doi.org/10.1016/j.conbuildmat.2021.124075
11. Mousavi, S., M. Ghayoomi, E.V. Dave, "A Systems Dynamics Framework for Mechanistic Analysis of Flexible Pavement Systems under Moisture Variations," Transportation Geotechnics, 30, 2021. https://doi.org/10.1016/j.trgeo.2021.100619
12. Zhang, R., J.E. Sias, and E.V. Dave, "Development of a Rheology-based Mixture Aging Model for Asphalt Material Cracking Performance Evaluation," Materials and Structures, 54, Article Number 150, 2021. https://doi.org/10.1617/s11527-021-01743-5
13. Mirzaiyanrajeh, D., E.V. Dave, and J.E. Sias, "Effects of Laboratory Compacted Asphalt Mixtures Air-Void Variations on Fracture Properties at Low Temperatures," Advances in Civil Engineering Materials, 10(1), pp. 262-275, 2021. http://doi.org/10.1520/ACEM20200141
14. Preti, F., E.V. Dave, J.E. Sias, E. Romero, G. Tebaldi, "Influence of Temperature on Global and Local Elastoplastic Properties of Bituminous Stabilized Material," Road Materials and Pavement Design, 2021 (Status: First round of review).
15. Haslett, K.E., J.F. Knott, A.M.K. Stoner, J.E. Sias, E.V. Dave, J.M. Jacobs, W. Mo, and K. Hayhoe, "Climate Change Impacts on Flexible Pavement Design and Rehabilitation Practices," Road Materials and Pavement Design, 22(9), pp. 2098-2112, 2021. https://doi.org/10.1080/14680629.2021.1880468
16. Nemati, R., E.V. Dave, and J.E. Sias, "Development of a Complex Modulus Based Rutting Index Parameter for Asphalt Mixtures," ASCE Journal of Transportation: Part B, Pavements, 146(2), 2020. https://doi.org/10.1061/JPEODX.0000171
17. Zhang, R., J.E. Sias, and E.V. Dave, "Evaluation of the cracking and aging susceptibility of asphalt mixtures using viscoelastic properties and master curve parameters," Journal of Traffic and Transportation Engineering, 2020. (available online). https://doi.org/10.1016/j.jtte.2020.09.002
18. Zhang, R., J.E. Sias, E.V. Dave, "Correlating Laboratory Conditioning with Field Aging for Asphalt using Rheological Parameters, Transportation Research Record, 2674(5), pp. 393-404, 2020. https://doi.org/10.1177/0361198120915894
19. DeCarlo, C., E.V. Dave, J.E. Sias, G. Airey, and R. Mallick, "Comparative Evaluation of Moisture Susceptibility Test Methods for Routine Usage in Asphalt Mixture Design, Journal of Testing and Evaluation, 48(1), pp. 88-106, 2020. https://doi.org/10.1520/JTE20180908
20. Nemati, R., E.V. Dave, and J.E. Sias, "Statistical Evaluation of the Effects of Mix Design Properties on Performance Indices of Asphalt Mixtures," Journal of Testing and Evaluation, 48(1), pp. 72-87, 2020. https://doi.org/10.1520/JTE20180903
21. Oshone, M., E.V. Dave, J.E. Sias, J.M. Voels, D. Ghosh, and S. Dai, "Increasing Precision and Confidence Level in Fracture Energy Measurement by Optimizing the Number of Test Replicates for Disk-shaped Compact Tension Fracture Test (ASTM D7313)," Journal of Testing and Evaluation, 47(5), pp. 3309-3321, 2019 https://doi.org/10.1520/JTE20180624
22. Tebaldi, G.; E.V. Dave, A.C. Falchetto, D. Perraton, M. Hugener, A. Grilli, D. Lo

Presti, M. Pasetto, A. Loizos, Andreas; K. Jenkins, A. Apeagyei, Alex; J. Grenfell, James, and M. Bocci, "Recommendation of RILEM TC237-SIB on fragmentation test of recycled asphalt," Materials and Structures, 52(4), pp. 82-88. 2019. https://doi.org/10.1617/s11527-019-1365-6

23. Mallick, R.B., M.K. Nivedya, R.K. Veeraragavan, E.V. Dave, C. DeCarlo, J.E. Sias, "A Study on Determination of a Suitable Set of Tests and a Machine Learning Approach to Predict the Moisture Susceptibility of Hot Mix Asphalt (HMA)," ASCE Journal of Transportation, Part B: Pavements, 145(3), 2019. https://doi.org/10.1061/JPEODX.0000132
24. Oshone, M., J.E. Sias, E.V. Dave, A.E. Martin, F. Kaseer, R. Rahbar-Rastegar, "Exploring Master Curve Parameters to Distinguish between Mixture Variables," Road Materials and Pavement Design, 20(Sup2), pp. S812-S826, 2019. https://doi.org/10.1080/14680629.2019.1633784
25. Rahbar-Rastegar, R., R. Zhang, J.E. Sias, and E.V. Dave, "Evaluation of Laboratory Aging Procedures on Cracking Performance of Asphalt Mixtures," Road Materials and Pavement Design, 20(Sup2), pp. S647-S662, 2019. https://doi.org/10.1080/14680629.2019.1633782
26. Kraatz, S., H.J. Miller, J.M. Jacobs, E.V. Dave, and J.E. Sias, "Accuracy Assessment of Satellite-Based Freeze-Thaw Retrievals on Low-Volume Roads in the United States," Transportation Research Record, 2673(12), pp. 756-766, 2019. https://doi.org/10.1177/0361198119854093
27. Qiao, Y., E.V. Dave, T. Parry, O. Valle, L. Mi, G. Ni, Z. Yuan, and Y. Zhu, "Life Cycle Costs Analysis of Reclaimed Asphalt Pavement (RAP) Under Future Climate," Sustainability, 11(19), p. 5414, 2019. https://doi.org/10.3390/su11195414
28. Oshone, M., J.E. Sias, L. McCarthy, D.J. Mensching, E.V. Dave, "Developing a Performance-Related Specification Program for Asphalt Pavements," Journal of Asphalt Paving Technologists, Volume 88, p.30, 2019.
29. Nemati, R., E.V. Dave, J.E. Sias, and A.D. Perkins, "Regionalizing the Quality Assurance Processes in New England Area for Pre-stressed and Precast Concrete Elements used in Highway Construction," Transportation Research Record, 2673(8), pp. 544-553, 2019. https://doi.org/10.1177/0361198119844748
30. Knott, J.F., J.M. Jacobs, J.E. Sias, P. Kirshen, and E.V. Dave, "A Framework for Introducing Climate-Change Adaptation for Pavement Management," Sustainability, 11(16), p. 4382, 2019. https://doi.org/10.3390/su11164382
31. Zhang, R., J.E. Sias, E.V. Dave, and R. Rahbar-Rastegar, "Impact of Aging on the Viscoelastic Properties and Cracking Behavior of Asphalt Mixtures," Transportation Research Record, 2673(6), pp. 406-415, 2019 https://doi.org/10.1177/0361198119846473.
32. Knott, J.F., J.E. Sias, E.V. Dave, and J.M. Jacobs, "Seasonal and Long-Term Changes to Pavement Life Caused by Rising Temperatures from Climate Change, Transportation Research Record, 2673(6), pp. 267-278, 2019 https://doi.org/10.1177/0361198119844249 [1]
33. Nemati, R., E.V. Dave, J.E. Sias, E.S. Thibodeau, and R.K. Worsman, "Evaluation of Laboratory Performance and Structural Contribution of Cold Recycled Versus Hot

[1] Altmetric top 5% paper: https://www.altmetric.com/details/63382686

Mixed Intermediate and Base Course Asphalt Layers in New Hampshire," Transportation Research Record, 2673(6), pp. 467-476, 2019. https://doi.org/10.1177/0361198119844761.[2]

34. Haslett, K.E., E.V. Dave, and W. Mo, "Realistic Traffic Condition Informed Life Cycle Assessment: Interstate 495 Maintenance and Rehabilitation Case Study," Sustainability, 11(12), p. 3245, 2019. https://doi.org/10.3390/su11123245
35. Nemati, R., K. Haslett, E.V. Dave, and J.E. Sias, "Development of a Rate-Dependent Cumulative Work and Instantaneous Power-Based Asphalt Cracking Performance Index," Road Materials and Pavement Design, 20(sup1), pp. S315-S331, 2019. https://doi.org/10.1080/14680629.2019.1586753
36. Daniel, J.S., M. Corrigan, C. Jacques, R. Nemati, E.V. Dave, A. Congalton, "Comparison of Mixture Specimen Fabrication Methods and Binder Tests for Cracking Evaluation of Field Mixtures," Road Materials and Pavement Design, 20(5), pp. 1059-1075, 2019. https://doi.org/10.1080/14680629.2018.1431148
37. Oshone, M., E.V. Dave, and J.E. Sias, "Asphalt Mix Fracture Energy Based Reflective Cracking Performance Criteria for Overlay Mix Selection and Design for Pavements in Cold Climates," Construction and Building Materials, 211, pp. 1025-1033, 2019. https://doi.org/10.1016/j.conbuildmat.2019.03.278
38. Tebaldi, G.; E.V. Dave, A.C. Falchetto, M. Hugener, D. Perraton, A. Grilli, D. Lo Presti, M. Pasetto, A. Loizos, Andreas; K. Jenkins, A. Apeagyei, Alex; J. Grenfell, James, and M. Bocci, "Recommendation of RILEM TC237-SIB: protocol for characterization of recycled asphalt (RA) materials for pavement applications," Materials and Structures, 51(6), p. 142, 2018. https://doi.org/10.1617/s11527-018-1253-5
39. Tebaldi, G.; E.V. Dave, A.C. Falchetto, M. Hugener, D. Perraton, A. Grilli, D. Lo Presti, M. Pasetto, A. Loizos, Andreas; K. Jenkins, A. Apeagyei, Alex; J. Grenfell, James, and M. Bocci, "Recommendation of RILEM TC237-SIB on cohesion test of recycled asphalt," Materials and Structures, 51(5), p. 117, 2018. https://doi.org/10.1617/s11527-018-1238-4
40. M. Oshone, E.V. Dave, J.S. Daniel, and G.M. Rowe, "Assessment of Various Approaches to Determining Binder Bending Beam Rheometer Low Temperature Specification Parameters from Dynamic Shear Rheometer Test," Journal of Association of Asphalt Paving Technologists, 87, pp. 345-374, 2018.
41. Rahbar-Rastegar, R., E.V. Dave, and J.S. Daniel, "Fatigue and Thermal Cracking Analysis of Asphalt Mixtures Using Continuum Damage and Cohesive Zone Models," ASCE Journal of Transportation Engineering Part-B Pavement, 144(4), 2018. https://doi.org/10.1061/JPEODX.0000066
42. Oshone, M., D. Ghosh, E.V. Dave, J.S. Daniel, J.M. Voels, and S. Dai, "Effect of Mix Design Variables on Thermal Cracking Performance Parameters of Asphalt Mixtures," Transportation Research Record, 2672(28), pp. 471-480, 2018. https://doi.org/10.1177/0361198118797826
43. Rahbar-Rastegar, R., J.S. Daniel, and E.V. Dave, "Evaluation of Viscoelastic and Fracture Properties of Asphalt Mixtures with Long-Term Laboratory Conditioning," Transportation Research Record, 2672(28), pp. 503-513, 2018.

[2] Altmetric top 5% paper: https://www.altmetric.com/details/63382692

https://doi.org/10.1177/0361198118795012

44. Nemati, R., and E.V. Dave, "Nominal Property Based Predictive Models for Asphalt Mixture Complex Modulus (Dynamic Modulus and Phase Angle)," Construction and Building Materials, 158(Sup. C), pp. 308-319, 2018. https://doi.org/10.1016/j.conbuildmat.2017.09.144
45. Dave, E.V., and B. Behnia, "Cohesive Zone Fracture Modeling of Asphalt Pavements with Applications to Design of High Performance Asphalt Overlays," International Journal of Pavement Engineering, 19(3), 319-338, 2018. http://dx.doi.org/10.1080/10298436.2017.1353393
46. Zhu, Y[3], E.V. Dave, R. Rahbar-Rastegar, J.S. Daniel, and A. Zofka, "Comprehensive Evaluation of Low Temperature Cracking Fracture Indices for Asphalt Mixtures," Road Materials and Pavement Design, 18(Sup4), pp. 467-490, 2017. https://doi.org/10.1080/14680629.2017.1389085
47. Oshone, M., E.V. Dave, J.S. Daniel and G.M. Rowe, "Prediction of Phase Angles from Dynamic Modulus Data and Implications on Cracking Performance Evaluation," Road Materials and Pavement Design, 18(Sup4), pp. 491-513, 2017. https://doi.org/10.1080/14680629.2017.1389086
48. Dave, E.V., *R.D. Kostick*, and *J. Dailey*, "Performance of High Friction Bridge Deck Overlays in Crash Reduction," ASCE Journal of Performance of Constructed Facilities, 31(2), 2017. http://dx.doi.org/10.1061/(ASCE)CF.1943-5509.0000945.
49. Dave, E.V., *C. Hoplin*, *B. Helmer*, *J. Dailey*, D. Van Deusen, J. Geib, S. Dai, and L. Johanneck, "Effects of Mix Design and Fracture Energy On Transverse Cracking Performance of Asphalt Pavements in Minnesota," Transportation Research Record, 2576, pp. 40-50, 2016. http://dx.doi.org/10.3141/2576-05
50. Behnia, B., E.V. Dave, W.G. Buttlar, and H. Reis, "Characterization of Embrittlement Temperature of Asphalt Materials through Implementation of Acoustic Emissions Technique," Construction and Building Materials, 111, pp. 147-152, 2016. https://doi.org/10.1016/j.conbuildmat.2016.02.105
51. Dave, E.V., and *C. Hoplin*, "Flexible Pavement Thermal Cracking Performance Sensitivity to Fracture Energy Variation of Asphalt Mixtures," Road Materials and Pavement Design, 16(Sup1), pp. 423-441, 2015. http://dx.doi.org/10.1080/14680629.2015.1029697
52. *Dailey, J.*, E.V. Dave, E. Musselman, *R. Kostick*, "Laboratory Evaluation of Partial Depth Patching Materials for Use in Winter Climates," Transportation Research Record, 2481, pp. 56-64, 2015. http://dx.doi.org/10.3141/2481-08
53. *DeDene, C.D.*, V.R. Voller, E.V. Dave, and M.O. Marasteanu, "Calculation of Particle Heating Times of Reclaimed Asphalt Pavement Material," Road Materials and Pavement Design, 15(3), pp. 721-732, 2014. http://dx.doi.org/10.1080/14680629.2014.909324
54. Tebaldi, G., E.V. Dave, P. Marsac, P. Muraya, M. Hugner et al., "Synthesis of Standards and Procedures for Specimen Preparation and In-field Evaluation of Cold Recycled Asphalt Mixtures", Road Materials and Pavement Design, 15(2), pp. 272-299, 2014. http://dx.doi.org/10.1080/14680629.2013.866707
55. Dave, E.V., and *J.J. Baker*, "Moisture Damage Evaluation of Asphalt Mixes

[3] Visiting Ph.D. student at UNH from Chang'an University in China (2015-16).

Containing Mining By-Products: Results from Traditional and Fracture Energy Tests," Transportation Research Record, 2371, pp. 113-120, 2013. http://dx.doi.org/10.3141/2371-13

56. Dave, E.V., W.G. Buttlar, S.E. Leon, B. Behnia and G.H. Paulino, "IlliTC – Low Temperature Cracking Model for Asphalt Pavements," Road Materials and Pavement Design, 14(Sup2), pp. 57-78, 2013. http://dx.doi.org/10.1080/14680629.2013.812838
57. Ahmed, S., E.V. Dave, W.G. Buttlar, and M.K. Exline, "Cracking Resistance of Thin-bonded Overlays using Fracture Tests, Numerical Simulations and Early Field Performance," International Journal of Pavement Engineering, 16(6), pp. 540-552, 2013. http://dx.doi.org/10.1080/10298436.2012.711474
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59. Dave, E.V., G.H. Paulino and W.G. Buttlar, "Viscoelastic Functionally Graded Finite Element Method for Flexible Pavements – A Recursive Time Integration Approach," International Journal for Numerical and Analytical Methods in Geomechanics, 36(9), pp. 1194-1219, 2012. https://dx.doi.org/10.1002/nag.1046
60. Behnia, B., E.V. Dave, S. Ahmed, W.G. Buttlar, and H. Reis, "Effects of Recycled Asphalt Pavement Amounts on Low-Temperature Cracking Performance of Asphalt Mixtures Using Acoustic Emissions," Transportation Research Record, 2208, pp. 64-71, 2011. http://dx.doi.org/10.3141/2208-09
61. Dave, E.V., B. Behnia, S. Ahmed, W.G. Buttlar, and H. Reis, "Low Temperature Fracture Evaluation of Asphalt Mixtures using Mechanical Testing and Acoustic Emissions Techniques," Journal of the Association of Asphalt Paving Technology, 80, pp. 193-226, 2011.
62. Dave E.V., A.F. Braham, W.G. Buttlar, and G.H. Paulino, "Development of Flattened Indirect Tension Test for Asphalt Concrete," Journal of Testing and Evaluation, 39(3), p. 8, 2011. https://doi.org/10.1520/JTE103084
63. Dave, E.V., G.H. Paulino and W.G. Buttlar, "Viscoelastic Functionally Graded Finite Element Method using Correspondence Principle," ASCE Journal of Materials in Civil Engineering, 23(1), pp. 39-48, 2011. http://dx.doi.org/10.1061/(ASCE)MT.1943-5533.0000006
64. Dave, E.V. and W.G. Buttlar, "Thermal Reflective Cracking of Asphalt Concrete Overlays," International Journal of Pavement Engineering, 11(6), pp. 477-488, 2010. http://dx.doi.org/10.1080/10298430903578911
65. Dave E.V., S. Ahmed, W.G. Buttlar, J. Bausano, and T. Lynn, "Investigation of Strain Tolerant Mixture Reflective Crack Relief Systems: An Integrated Approach," Journal of the Association of Asphalt Paving Technologists, 79, pp. 119-156, 2010.
66. Ahmed S., E.V. Dave, W.G. Buttlar, and M.K. Exline, "Fracture Properties of Gap & Dense Graded Thin Bonded Overlays," Journal of the Association of Asphalt Paving Technologists, 79, pp. 443-472, 2010.
67. 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, 2010, 11(SI), pp. 33-59, 2010. http://dx.doi.org/10.1080/14680629.2010.9690326

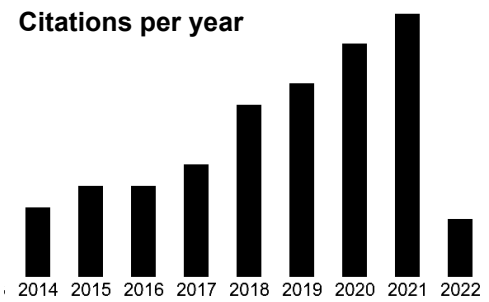
68. Behnia, B., S. Ahmed, E.V. Dave, and W.G. Buttlar, "Fracture Characterization of Asphalt Concrete Mixtures with Reclaimed Asphalt Pavement (RAP)," International Journal of Pavement Research and Technology, 3(2), pp. 72-78, 2010.
69. Apeagyei, A., E.V. Dave, and W.G. Buttlar, "Effect of Cooling Rate on Thermal Cracking of Asphalt Concrete Pavements," Journal of Association of the Asphalt Paving Technologists, 77, pp.709-738, 2008.
70. Buttlar, W.G. and E.V. 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, 74, pp 829-883, 2005.

ii. Refereed Journal Articles Accepted or In Press or Review (selected)

1. Haslett, K.E., E.V. Dave, J.E. Sias and E. Linder, "A Statistical Analysis Framework to Evaluate Asphalt Concrete Overlay Reflective Cracking Performance," Transportation Research Record, 2022 (Status: Accepted, in-press).
2. Mirzaiyanrajeh, D., C.J. DeCarlo, M. Elshaer, R. Zhang, E.V. Dave, and J.E. Sias, "Performance Evaluation of Pelletized Solid Polymer Modified Asphalt Mixtures," Transportation Research Record, 2022 (Status: Accepted, in-press).
3. Mirzaiyanrajeh, D., E.V. Dave, J.E. Sias, Z.D. McKay, and P.B. Blankenship, "Comprehensive Evaluation of Properties and Performance of Asphalt Mixtures Modified with Isocyanate-based and SBS Modifiers," Transportation Research Record, 2022 (Status: Accepted, in-press).
4. Ogbo, C., E.V. Dave, and J.E. Sias, "Laboratory Investigation of Factors Affecting the Evolution of Curing in Cold In-place Recycled (CIR) Materials," Transportation Research Record, 2022 (Status: Accepted, in-press).
5. Zhang, R., J.E. Sias, E.V. Dave, A. Hanz, G. Reinke, Z. Wang, "Comprehensive Laboratory Evaluation of Recycling Agent (RA) Treated Plant-Produced Asphalt Mixtures, Transportation Research Record, 2022 (Status: Second round of review).
6. Reinke, G, A. Hanz, R. Zhang, J.E. Sias, E.V. Dave, "Laboratory Evaluation of Rheological, Chemical and Compositional Properties of Bitumen Recovered from RAP Mixtures Treated with Seven Different Recycling Additives (RA) with Aging," Transportation Research Record, 2022 (Status: Second round of review).
7. Mirzaiyanrajeh, D., E.V. Dave, J.E. Sias, and N. Garg, "Exploration of Cracking-related Performance-based Specification (PBS) Indices for Airfield Asphalt Mixtures," ASCE Journal of Transportation Engineering, Part B, 2022 (Status: Second round of review).
8. Dave, E.V., and A. Hunsaker, "Impact of Pavement Surface Black Ice on Hyper-Spectral Observations," Journal of Cold Regions Engineering, 2021 (Status: Second round of review).

iii. Measure of Publication Effectiveness

Google Scholar Summary *(Accessed on 02/20/2022)*
https://scholar.google.com/citations?user=2BMgtFIAAAAJ&hl=en



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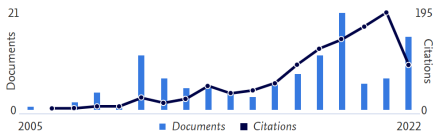
Document & citation trends



Most contributed Topics 2016–2020

Asphalt Mixtures; Superpave; Low Temperature Properties
18 documents

Asphalt Mixtures; Bituminous Materials; Self-Healing
7 documents

Asphalt Mixtures; Rutting; Superpave
6 documents

View all Topics

B. Conference Proceedings (UNH student co-authors underlined; UMD student co-authors *underlined and italicized*)

i. Refereed Conference Proceedings

1. Gouveia, B. C. S., F. Preti, E. Romeo, E.V. Dave, G. Tebaldi, J.E. Sias, "Rutting Performance Analysis for Pavements with Bituminous Stabilized Mixtures as Base Layers," In RILEM Bookseries (pp. 1649-1655). Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_209 (3W)
2. C. Ogbo, E.V. Dave, J.E. Sias, "Laboratory Performance of Stabilized Base with 100% Reclaimed Asphalt Pavement (RAP) Using Portland Cement, Bitumen Emulsion and Foamed-Bitumen," In RILEM Bookseries (pp. 1257-1263). Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_160 (3W)
3. Grilli, A., S. Raschia, D. Perraton, A. Carter, A. Rahmanbeiki, P. Kara De Maeijer,. . .E.V. Dave, G. Tebaldi, "Experimental Investigation on Water Loss and Stiffness of CBTM Using Different RA Sources," In RILEM Bookseries (pp. 11-17), Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_2 (3W)
4. Zhang, R., J.E. Sias, and E.V. Dave, "Evolution of the Thermo-rheological Indices of Asphalt Binders with Aging," In RILEM Bookseries (pp. 849-855). Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_108 (3W)
5. Haslett, K. E., E.V. Dave, and J.E. Sias, "Evaluation of Cracking Performance Indices from Disk-Shaped Compact Tension Testing," In RILEM Bookseries (pp. 771-778), Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_98 (3W)
6. Preti, F., B.C.S. Gouveia, E. Romeo, G. Tebaldi, E.V. Dave and J.E. Sias, "Elasto-Plastic Model for Bitumen Stabilized Materials Using Triaxial Testing and Finite Element Modelling, In RILEM Bookseries (pp. 687-693), Springer International Publishing, 2022. http://doi.org/10.1007/978-3-030-46455-4_87 (3W)
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8. Haslett, K., E.V. Dave, and W. Mo, "Impacts of climate-change and realistic traffic conditions on asphalt pavement and rehabilitation decisions using life cycle assessment, Harvey, J. (Ed.), Al-Qadi, I. (Ed.), Ozer, H. (Ed.), Flintsch, G. (Ed.), Pavement, Roadway, and Bridge Life Cycle Assessment 2020. CRC Press, London, 2020. https://doi.org/10.1201/9781003092278-16 (3W)
9. Pasetto, M., E. Pasquini, A. Baliello, S. Raschia, A. Rahmanbeiki, A. Carter, D. Perraton, F. Preti, B. Gouveia, G. Tebaldi, A. Grilli, and E.V. Dave, "Influence of Curing on the Mechanical Properties of Cement-Bitumen Treated Materials Using Foamed Bitumen: An Interlaboratory Test Program," Proceedings of the 9th International Conference on Maintenance and Rehabilitation of Pavements—

Mairepav9, C. Raab (Ed.), Lecture Notes in Civil Engineering, Vol. 76, Springer Nature, 2019. https://doi.org/10.1007/978-3-030-48679-2_6 (3W)

10. Nemati, R., E.V. Dave, and J.E. Sias, "Development of a Damage Growth Rate-based Fatigue Criterion," Proceedings of the 2020 Advances in Materials and Pavement Performance Prediction (AM3P) Conference, San Antonio, Texas, 2020 (3W)
11. Zhang, R., K.E. Haslett, C. Ogbo, R. Nemati, M. Oshone, J.E. Sias, and E.V. Dave, "Overview of Rheological, Fatigue, and Fracture Properties to Evaluate Fatigue and Thermal Cracking of Asphalt Mixtures in Northern United States," Proceedings of the 12th Conference on Asphalt Pavements for Southern Africa (CAPSA), Sun City, South Africa, 2019 (2W)
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13. R. Zhang, J.S. Daniel, and E.V. Dave, "Evaluation of Viscoelastic Properties and Cracking Behaviour of Asphalt Mixtures with Laboratory Aging," Poulikakos L., Cannone Falchetto A., Wistuba M., Hofko B., Porot L., Di Benedetto H. (eds) RILEM 252-CMB Symposium. RILEM 252-CMB 2018. RILEM Bookseries, Vol 20, pp. 33-38, Springer, 2019 https://doi.org/10.1007/978-3-030-00476-7_6 (3W)
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15. Y. Qiao, E.V. Dave, and T. Parry, "Life-Cycle Cost Analysis of Reclaimed Asphalt Pavement (RAP) under Future Climate: A New Hampshire Interstate-95 Case Study," Proceedings of the International Seminar on Resilient Roads and Climate Change Adaptation, Beijing, China, 2018 (2W)
16. R. Nemati, E.V. Dave, and J.S. Daniel, "Comparative Evaluation of New Hampshire Mixtures on Basis of Laboratory Performance Tests," Proceedings of the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil, 2018 (3W)
17. C. DeCarlo, E.V. Dave, J.S. Daniel, G. Airey, and R.B. Mallick, "Comparative Evaluation of Laboratory Moisture Susceptibility Tests for Asphalt Mixtures," Proceedings of the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil, 2018 (3W)
18. R. Rahbar-Rastegar, J.S. Daniel, and E.V. Dave, "Impact of Aging on Cracking Behavior of Asphalt Mixtures," Proceedings of the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil, 2018 (3W)
19. M. Oshone, J.S. Daniel, E.V. Dave, A.E. Martin, F. Kaseer, and R. Rahbar-Rastegar, "Exploring Master Curve Parameters to Distinguish between Mix Variables," Proceedings of the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil, 2018 (3W)

20. K. Haslett, E.V. Dave, J.S. Daniel, "Exploration of Temperature and Loading Rate Interdependency for Fracture Properties of Asphalt Mixtures," Proceedings of the 71st RILEM Annual Week & ICACMS 2017, Vol. 4, pp. 521-530, Chennai, India, September 2017 (2W)
21. M. Oshone, M. Elshaer, E.V. Dave, and J.S. Daniel, "Evolution of Asphalt Modulus from Falling Weight Deflectometer Tests and Challenges Associated with its Interpretation and Applications: A Case Study using LTPP Data," Proceedings of the Tenth International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2017) (Loizos et al. Eds.), Taylor and Francis Group, London, pp. 735-742, 2017 (3W)
22. C. DeCarlo, W. Mo, E.V. Dave, and J. Locore, "Sustainable Pavement Rehabilitation Strategy using Consequential Life Cycle Assessment: An Example of Interstate 95," Proceedings of the Tenth International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2017) (Loizos et al. Eds.), Taylor and Francis Group, London, pp. 2193-2200, 2017 (3W)
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25. O. Valle[4], Y. Qiao, E. Dave, and W. Mo, "Life Cycle Assessment of Pavements Under a Changing Climate," Pavement Life-Cycle Assessment (Eds. Al-Qadi, Ozer and Harvey), ISBN: 978-1-138-06605-2, CRC Press, pp. 241-250, 2017. http://dx.doi.org/10.1201/9781315159324-25 (3W)
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30. D. Perraton, G. Tebaldi, E. Dave, F. Bilodeau, G. Giacomello, A. Grilli, A. Graziani, M. Bocci, J. Grenfell, P. Muraya, M. Pasetto, K. Kuna, A. Apeagyei, D. Lo Presti, G. Airey, K. Jenkins, E. Hajj, M. Hugener, P. Marsac, "Tests Campaign Analysis to Evaluate the Capability of Fragmentation Test to Characterize Recycled Asphalt Pavement (RAP) Material," 8th RILEM International Symposium on Testing and Characterization of Sustainable and Innovative Bituminous Materials, Volume 11 RILEM Bookseries, pp 965-976, Springer, 2015. https://doi.org/10.1007/978-94-017-7342-3_77 (3W)
31. E.V. Dave, *C. Hanson*, *B. Helmer* and L. Johanneck, "Effect of Asphalt Binder Content and Grade on Transverse Field Cracking Performance of Minnesota's Roadways," Proceedings of the International Conference On Asphalt Pavements, Raleigh, North Carolina, USA, 1–5 JUNE 2014, pp. 1209-1217, Taylor and Francis Group, London, 2014. (3W)
32. *A. Carlson*, *T. Jensen*, *A. Lund*, E.V. Dave, and D.A. Saftner, "MS Projects from Partnership with City Government," Proceedings of the 2014 ASEE Annual Conference, Paper ID 9997, Indianapolis, Indiana, 2014, pp. 24.918.1-11. (3W)
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34. D.A. Saftner, S.D. Ojard, E.V. Dave, N.W. Johnson, E. Kwon and R. Teasley, "Development of a Civil Engineering Capstone Design Course for a New Program," Proceedings of the 2013 ASEE Annual Conference, Paper ID 6966, Atlanta, Georgia, 2013. (3W)
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40. E.V. Dave, S.E. Leon, and K. Park, “Thermal Cracking Prediction Model and Software for Asphalt Pavements,” T&DI Congress 2011: Integrated Transportation and Development for a Better Tomorrow, Proceedings of the First T&DI Congress 2011, ASCE Conference Proceedings, Vol. 398(41167), pp. 64-72, 2011. (3W)
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45. E.V. Dave, G.H. Paulino, and W.G. Buttlar, “Asphalt Pavement Aging and Temperature Dependent Properties through a Functionally Graded Viscoelastic Model, Part-I: Development, Implementation, and Verification,” Proceedings of the Multiscale, Multifunctional, and Functionally Graded Materials Conference (FGM2008), Materials Science Forum, Vols. 631-632, pp. 47-52, 2010. (3W)
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ii. Non-Refereed Conference Proceedings

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2. K.E. Haslett, E.V. Dave, W. Mo, "Use of Climate-change Informed Life Cycle Assessment in Pavement Rehabilitation and Maintenance Decision Process," Proceedings of the International Society of Asphalt Pavements' Symposium on Asphalt Pavement and Environment, Sun City, South Africa, 2019.

C. Monographs, Books, Book Chapters and Reports (UNH student co-authors underlined; UMD student co-authors *underlined and italicized*) (selected)

1. M. Ghayoomi, E.V. Dave, S.M. Mousavi, F. Preti, "Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations," Report No. NRRA202110, Minnesota Department of Transportation, St. Paul, MN, 2021. https://www.mndot.gov/research/reports/2021/NRRA202110.pdf
2. E.V. Dave, J.E. Sias, K.E. Haslett, "Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt (HMA) Overlays related to Density and Reflective Cracking," Report No. NRRA202109, Minnesota Department of Transportation, St. Paul, MN, 2021. https://www.mndot.gov/research/reports/2021/NRRA202109.pdf
3. E.V. Dave, A. Hunsaker, J. Charabati, "Pavement Black Ice Detection using Hyperspectral Sensing," Technical Report for Task-3 (Infrastructure) of Project W913E5-18-C-0005, Cold Regions Operations and Assessment Research, Cold Regions Research and Engineering Laboratory, U.S. Army Engineer Research and Development Center, Hanover NH, 2021.
4. J.E. Sias, E.V. Dave, L. Mayers McCarthy, "Practices for Fabricating Asphalt Specimens for Performance Testing in Laboratories," NCHRP Synthesis 552, National Cooperative Highway Research Program; Transportation Research Board; National Academies of Sciences, Engineering, and Medicine, Washington DC, 2020. https://doi.org/10.17226/25843
5. G. Tebaldi, E.V. Dave, J. Soares, F.T. Aragão (Guest Editors), Special Section on 13th Conference of the International Society for Asphalt Pavements (ISAP), Journal of Testing and Evaluation, 48(1), 2020. https://www.astm.org/DIGITAL_LIBRARY/JOURNALS/TESTEVAL/TOC/4812020.htm
6. J.B. Soares, G.Tebaldi, F.T. Aragão, K. Vasconcelos, E. Romeo, and E.V. Dave (Guest Editors), Special Issue on 13th Conference of the International Society for Asphalt Pavements (ISAP), Road Materials and Pavement Design, 20(Sup2), 2019. https://doi.org/10.1080/14680629.2019.1641963
7. E.V. Dave, D. Mirzaiyanrajeh, J.E. Sias, "Effects of Air-Void on DCT Fracture Energy Measurements," Report No. MN/UNH 2019-1003326-04, Final Report, Minnesota Department of Transportation, Research Services Section, 395 John Ireland Boulevard, MS 330, St. Paul, Minnesota 55155, 2019.
8. E.V. Dave, E. Caron, "Reducing Cracking in New Bridge Curbs," Report No. FHWA-NH-RD-26962P, Final Report, New Hampshire Department of Transportation, Concord NH 03302, 2019. https://www.nh.gov/dot/org/projectdevelopment/materials/research/projects/documents/26962p-report.pdf
9. E.V. Dave, J.E. Sias, R. Namati, "Layer Coefficients for New Hampshire Department of Transportation Pavement Design," Report No. FHWA-NH-RD-26962N, Final Report, New Hampshire Department of Transportation, Concord NH 03302, 2019. https://www.nh.gov/dot/org/projectdevelopment/materials/research/projects/documents/26962n_report.pdf

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11. J.E. Sias, E.V. Dave, R. Zhang, R. Rahbar-Rastegar, "Incorporating Impact of Aging on Cracking Performance of Mixtures during Design," Report No. FHWA-NH-RD-26962O, Final Report, New Hampshire Department of Transportation, Concord, NH 3302, 2019. https://www.nh.gov/dot/org/projectdevelopment/materials/research/projects/documents/26962o_report.pdf
12. E.V. Dave, J.E. Sias, J. Charabati, A. Perkins, "Development of Implementation Plan for Unified Quality Assurance (QA) Processes of Precast and Prestressed Concrete Elements [PCE/PSE] for New England," New England Transportation Consortium, Report NETCR118 Project 13-3 (Phase-II), Burlington, VT, 2019.
13. J.S. Daniel, E.V. Dave, C. Ogbo, A. Perkins, "Quick Response: Optimizing Quality Assurance (QA) Processes for Asphalt Pavement Construction in the Northeast," New England Transportation Consortium, Report NETCR112 Project 15-4, Burlington, VT, 2018.
14. E.V. Dave, J.S. Daniel, R. Medina, M. Kotowski, A. Perkins, "Improved Regionalization of Quality Assurance (QA) Functions," New England Transportation Consortium, Report NETCR110 Project 13-3, Burlington, VT, 2018.
15. E.V. Dave, J.S. Daniel, R.B. Mallick, C. DeCarlo, R.K. Veeraragavan, M.K. Kottayi, "Moisture Susceptibility Testing for Hot Mix Asphalt pavements in New England," New England Transportation Consortium, Report NETCR109 Project 15-3, Burlington, VT, 2018.
16. W.G. Buttlar, A. Chabot, E.V. Dave, C. Petit, G. Tebaldi (Editors), "Mechanisms of Cracking and Debonding in Asphalt and Composite Pavement," State-of-the-Art of the RILEM TC 241-MCD, Series Volume 28, Springer, Netherlands, ISBN: 978-3-319-76849-6, ISSN: 2213-204X, 2018. https://doi.org/10.1007/978-3-319-76849-6
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20. E.V. Dave, C. DeCarlo, *C.M. Hoplin, B. Helmer*, J. Dailey and R.C. Williams,

"Impact of Low Asphalt Binder for Coarse HMA Mixes," Report Number MN/RC 2017-27, Minnesota Department of Transportation, Research Services Section, 395 John Ireland Boulevard, MS 330, St. Paul, Minnesota 55155, 2017. http://mndot.gov/research/reports/2017/201727.pdf

21. J. Dailey, E.V. Dave, M. Burman, and *R.D. Kostick*, "Comprehensive Field Evaluation of Asphalt Patching Methods and Development of Simple Decision Trees and a Best Practices Manual," Report Number MN/RC 2017-25, Minnesota Department of Transportation, Research Services Section, 395 John Ireland Boulevard, MS 330, St. Paul, Minnesota 55155, 2017. http://mndot.gov/research/reports/2017/201725.pdf
22. A. Chabot, W.G. Buttlar, E.V. Dave, C. Petit, and G. Tebaldi (Editors), "Proceedings of the 8th International RILEM Conference on Mechanisms of Cracking and Debonding in Pavements," Springer, Netherlands, ISBN: 978-94-024-0866-9, ISSN 2211-0844, 2016. http://dx.doi.org/10.1007/978-94-024-0867-6
23. E.V. Dave, *C.E. Hanson*, *B. Helmer*, *J. Dailey*, *C.M. Hoplin*, "Laboratory Performance Test for Asphalt Concrete," Final Report for Work Order 40, Minnesota Department of Transportation, Research Services Section, 395 John Ireland Boulevard, MS 330, St. Paul, Minnesota 55155, 2015.
24. E.V. Dave, "Design of Asphalt Overlays using Mechanistic Fracture Simulations," Final Report for MnDOT Agreement No. 02247, Minnesota Department of Transportation, June 2013.
25. E.V. Dave, "Sustainable Pavement Rehabilitation using Thin Bonded Overlay Constructed with High Taconite Mix," Project Number 2010-13, Local Operational Research Assistance Program, Local Road Research Board, St. Paul, MN, April 2013.
26. M. Marasteanu, K. Moon, E. Tashale, A. Falchetto, M. Turos, W. Buttlar, E. Dave, G. Paulino, S. Ahmed, S. Leon, A. Braham et al., "Investigation of Low Temperature Cracking in Asphalt Pavements," National Pooled Fund Study - Phase II, Report No. MN/RC 2012-23, Minnesota Department of Transportation, August 2012.
27. E.V. Dave, *P. Koktan*, "Testing in progress: Research tries to find way to check asphalt performance," Roads & Bridges Magazine, March 2012.
28. E.V. Dave, *P. Koktan*, "Synthesis of Performance Testing of Asphalt Concrete," Report No. MnDOT 2011-22. Minnesota Department of Transportation, Research Services Section, 395 John Ireland Boulevard, St. Paul, Minnesota 55155, 2011.
29. W.G. Buttlar and E.V. Dave (Guest Editors), Thematic Issue on Recent Advances in Numerical Simulation of Pavements, Road Materials and Pavement Design, Volume 11(2), 2010. http://www.tandfonline.com/toc/trmp20/11/2
30. G.H. Paulino, M.-J. Pindera, R.H. Dodds, Jr., F.A. Rochinha, E.V. Dave, and L. Chen (Editors), "Multiscale and Functionally Graded Materials, FGM IX," AIP Conference Proceedings 973, American Institute of Physics, Melville, NY, ISBN: 978-0-7354-0492-2, ISSN 0094-243X, 2008. http://aip.scitation.org/toc/apc/973/1?expanded=973

D. Other Publications

Casillas, S., A.F. Braham, E.V. Dave, J.E. Sias, "Asphalt Emulsion Cold In-Place Recycling Mix Design Practices: Designing a Semi-Bound Pavement Material – White Paper," Posted free for download on ResearchGate, 2020. http://doi.org/10.13140/RG.2.2.28672.46083

E. Professional Presentations

i. Invited Seminar Presentations

1. Fracture in Asphalt Mixtures and Perspectives on Testing and Modelling of Multi-material Pavement Interfaces, Invited seminar to GeM – Institut de Recherche en Génie Civil et Mécanique at Nantes Université, Nantes, France (February 10th, 2021)
2. Understanding and Improving Pavement Milling Operations, National Road Research Alliance Research Pays Off Webinar Series (November 16th, 2021) (https://youtu.be/nMQeA_XXzII)
3. Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt (HMA) Overlays Related to Density and Reflective Cracking, National Road Research Alliance Research Pays Off Webinar Series (November 16th, 2021) (https://youtu.be/aLYuWWWOjqk)
4. SMARTPAVE: A Smart Sensing and Resilient Pavement Design and Management Framework for Roadways in Cities of Tomorrow, Campus-wide Presentation, Université Gustave Eiffel, Nantes Campus (November 17th, 2021)
5. Impacts of Flooding on Pavement Foundation, TRB Webinar: Progress Toward More Resilient Pavements (November 9th, 2021)
6. Impacts of Climate-Change and Realistic Traffic Conditions on Asphalt Pavement and Rehabilitation Decisions using Life Cycle Assessment, Invited presentation to the Analyse Cycle de Vie (Life Cycle Assessment) Group of the Université Gustave Eiffel and École des Pont ParisTech (October 13th, 2021)
7. Recycling of Asphalt Pavements, Invited Speaker for the RILEM ROK&TOK Webinar (October 7th, 2021)
8. Asphalt Mixture Performance-based Specifications and Balanced Mix Design: Development and Implementation, 2021 Transportation Association of Canada (TAC) Conference and Exhibition (September 28th, 2021)
9. LCA based Pavement Maintenance and Rehabilitation Strategy: Interstate-95 Case Study, Keynote Lecture at the II International Symposium in Transportation Engineering, University of São Paulo (October 30, 2020) (https://www.youtube.com/watch?v=AIlDdxI1GUc)
10. Unmanned Aerial System (UAS) Sensing of Pavements for Detection of Black Ice, Invited Seminar for the University of Illinois' Kent Lecture Series (September 21, 2020) (https://www.youtube.com/watch?v=tMUQ843pUUg)
11. Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt

Overlays Related to Density and Reflective Cracking, invited presentation for the National Road Research Alliance Pavement Workshop, Web-based workshop (June 3, 2020)

12. Pavement Preservation, Invited seminar at AECOM, Chelmsford MA (February, 26th 2020)
13. Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt Overlays Related to Density and Reflective Cracking, Invited Presentation at National Road Research Alliance (NRRA) 2019 Pavement Workshop, Maple Grove MN (May 22, 2019)
14. Impacts of Climate-Change on Asphalt Pavement Maintenance and Rehabilitation using Life Cycle Assessment, Invited Presentation at the Global Forum of the Association of Asphalt Paving Technologists, Ft. Worth, TX (March 3, 2019)
15. The Role of Moisture and Pore Pressure Measurements in Performance Assessment of Pavement Sections with Excessive Moisture: A System Dynamics Approach, Invited technical presentation in Session 1029 of the 98th Annual Meeting of the Transportation Research Board, Washington DC (January 13, 2019).
16. Viscoelastic Functionally Graded Finite Elements: Introduction and Applications to Asphalt Pavements, Graduate Seminar for University of New Hampshire Civil and Environmental Engineering, Durham NH (December 3, 2018)
17. Performance Engineered Mix Designs (PEMD), Invited Presentations at the 2018 International Society for Asphalt Pavements Conference (ISAP 2018) for a Round-table Session, Fortaleza, Brazil (June 21, 2018)
18. Economic and Environmental Benefits of Cold In-place Recycling, Invited Presentation at the 2nd RILEM TC 264-RAP Industry Workshop at the University of São Paulo, São Paulo, Brazil (June 18, 2018)
19. New Hampshire Asphalt Mix Performance Results, Invited Presentation at the 2018 New England Material and Research Engineers' Meeting, Concord NH (June 12, 2018)
20. Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt Overlays Related to Density and Reflective Cracking, Invited Presentation at National Road Research Alliance (NRRA) 2018 Pavement Workshop, St. Paul MN (May 24, 2018)
21. Performance Testing for Balanced Mix Design: New Hampshire Asphalt Mix Performance Results, Invited Presentation at the New York Asphalt Technical Conference, Troy NY (March 28, 2018)
22. Lab Testing-Based Product Acceptance Process for Partial-Depth Concrete Patching Materials, Invited Presentation at the Workshop Session 158 of the 98th Annual Meeting of the Transportation Research Board, Washington DC (January 7, 2018).
23. Improved Regionalization of Quality Assurance (QA) Functions (a.k.a. Sharing Inspection Resources), Invited Presentation at the North East State Materials

Engineers' Association (NESMEA) Meeting, Springfield CT (October, 17 2017)

24. How to Incorporate Climate Change in Pavement Life Cycle Assessment?, Seminar to M.Sc. students at University of Nottingham, United Kingdom (October 5, 2017)
25. Performance Testing and Modeling of Sustainable Pavement Infrastructure, Invited Presentation at Asphalt Research Symposium and Grand Opening of the Mizzou Asphalt Pavement and Innovation Laboratory (MAPIL) University of Missouri, Columbia, MO (March 27, 2017).
26. How do low binder content (coarse gradation) asphalt mixtures perform?, Invited Presentation at the Minnesota Research and innovation Council of Minnesota Department of Transportation and Local Road Research Board, Maplewood, MN (March 13, 2017)
27. How to incorporate Reclaimed Asphalt Pavement in High Performance Asphalt Concrete? Invited Presentation at the Ecole Technique Supérieure (ETS) Montreal, Canada (September 30, 2016)
28. Intelligent Transportation Systems in Enhancing Transportation Infrastructure Resiliency, Invited presentation and discussion at the Roundtable Super Panel of 2016 New England ITS Annual Interchange, Boston MA (May 13, 2016).
29. Pavement Life Cycle Enhancement Through Performance Based Design, Invited Seminar at the Ecole Centrale de Nantes and IFSTTAR (The French Institute of Science and Technology for Transport, Development and Networks), Nantes, France (February 18, 2016).
30. Performance Based Design of Resilient Pavement Infrastructure, Invited Seminar at Civil and Environmental Engineering, The University of Vermont, Burlington VT (October 23, 2015)
31. Performance Based Design and Maintenance of Pavement Infrastructure, Seminar at the Minnesota Department of Transportation, Maplewood MN (December 22, 2014)
32. Performance Based Design of Resilient Pavement Infrastructure, Seminar at the American Society of Civil Engineers (ASCE) Duluth Section, Duluth MN (December 9, 2014)
33. Performance Based Evaluation of Roadway Materials: Bituminous Concrete, Invited seminar at L.D. College of Engineering, Ahmedabad, India (January 6, 2012)
34. Thin Asphalt Overlays, Invited Conference Presentation, 58th Annual Asphalt Conference, Minnesota Association of Asphalt Paving Technologists, St. Louis Park MN (December 2011).
35. Testing and Computer Modeling of Fracture in Viscoelastic Composites, Invited Seminar for the Mechanical and Industrial Engineering Department, University of Minnesota Duluth, Duluth MN (November 2011).
36. Cracking in Asphalt Concrete: Model Qualification, Verification, Calibration and Validation, Invited Technical Presentation at the RILEM Technical Committee on Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements,

École des Ponts ParisTech, Paris, France (June 2011).

37. Thermal Cracking Evaluation of Asphalt Mixtures using Mechanical Testing and Acoustic Emissions Techniques, Invited Seminar at Michigan Technological University, Civil Engineering Graduate Seminar, Houghton MI (March 2011).
38. Cracking Evaluation of Thin Bonded Asphalt Overlays, Invited Seminar at the Center for Transportation Studies' (CTS) Infrastructure Research Council Meeting, University of Minnesota at Twin Cities, Minneapolis MN (February 2011).
39. Low Temperature Cracking Prediction with Consideration of Temperature Dependent Bulk and Fracture properties, Invited Seminar, Illinois Center for Transportation, University of Illinois, Rantoul IL (August 2009).
40. Flattened Indirect Tension Test for Asphalt Concrete, Invited Seminar, Illinois Center for Transportation, University of Illinois, Rantoul IL (March 2009).
41. Reflective Cracking in Flexible Pavements – Mechanisms, Modeling, and Mitigation, invited lecture by BVM Engineering College Alumni Association, Vidyanagar, Gujarat, INDIA (January 2006).

ii. Other Presentations (underlined if based on an accepted abstract)

1. Life Cycle Assessment Based Framework for Design and Maintenance of Roadways in the Cities of Tomorrow, Technical Presentation at the 2021 FUTURE Days Event (Theme: Decarbonation of cities and territories), Marne la Vallée (December 1, 2021)
2. Unmanned Aerial Vehicle Based Pavement Black Ice Detection System Using Spectral Measurements, 23rd Int. Conf. on Advances in Pavement Engineering and Technologies, World Academy of Science, Engineering and Technology Conference Series (Online, January 25, 2021)
3. Impacts of Pavement Ice Thickness on its Spectral Signature: Automation in Pavement Black Ice Detection, Technical Presentation at the 2020 CTS Transportation Research Conference (November 5, 2020)
4. How Do Milling Operations Affect the Pavement Layers that Remain after Milling?, Technical presentation at the North East Asphalt User Producer Group Meeting (NEAUPG) (28 October 2020).
5. Reducing Cracks in New Bridge Curbs, Technical Presentation at the North East State Materials Engineers Association (NESMEA) Meeting, Portland Maine (October 22, 2019).
6. Climate-change Informed Life Cycle Assessment for Pavement Rehabilitation and Maintenance Decision Process, 6th International Symposium on Asphalt Pavements & Environment, Sun City, South Africa (October 13, 2019)
7. Development of a Rate-Dependent Cumulative Work and Instantaneous Power based Asphalt Cracking Performance Index (RDCI), Podium Presentation at the 8th European Asphalt Technology Association Conference, Granada, Spain (June 5, 2019)

8. Regionalizing the QA Processes in New England Area for Pre-stressed and Precast Concrete Elements used in Highway Construction, Poster presentation in Session 1223 of the 98th Annual Meeting of the Transportation Research Board, Washington DC (January 14, 2019).
9. Asphalt Mix Fracture Energy Based Reflective Cracking Performance Criteria for Overlay Mix Selection and Design, Technical presentation in Session 1328 of the 98th Annual Meeting of the Transportation Research Board, Washington DC (January 14, 2019).
10. Evaluation of Laboratory Performance and Structural Contribution of Cold Recycled Versus Hot Mixed Intermediate and Base Course Asphalt Layers in New Hampshire, Poster presentation in Session 1561 of the 98th Annual Meeting of the Transportation Research Board, Washington DC (January 15, 2019).
11. Impact of Aging on Cracking Behavior of Asphalt Mixtures, Podium Presentation at the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil (June 21, 2018)
12. Comparative Evaluation of New Hampshire Mixtures on Basis of Laboratory Performance Tests, Poster Presentation at the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil (June 20, 2018)
13. Exploring Master Curve Parameters to Distinguish Between Mixture Variables, Poster Presentation at the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil (June 20, 2018)
14. Comparative Evaluation of Laboratory Moisture Susceptibility Tests for Asphalt Mixtures, Poster Presentation at the 2018 International Society of Asphalt Pavements (ISAP 2018) Conference, Fortaleza, Brazil (June 19, 2018)
15. Real Time Traffic Data Informed Life Cycle Assessment: Interstate 495 Maintenance and Rehabilitation Case Study, Poster Presentation at the Infrastructure and Climate Network (ICNet) Workshop, Portsmouth, NH (April 9, 2018)
16. Fatigue and Thermal Cracking Analysis of Asphalt Mixtures Using Viscoelastic Continuum Damage and Cohesive Zone Fracture Models, Poster Presentation at the 7th European Asphalt Technology Association Conference, Zurich, Switzerland (June 12-14, 2017)
17. Life Cycle Assessment of Pavements Under a Changing Climate, Podium Presentation at the 2017 Pavement Life-Cycle Assessment Symposium, Champaign, IL (April 13, 2017).
18. Comprehensive Evaluation of Low Temperature Cracking Fracture Indices for Asphalt Mixtures, Podium Presentation at the 92nd Annual Meeting of the Association of Asphalt Paving Technologists, Newport Beach CA (March 22, 2017).
19. Asphalt Performance Testing and Specification Development, Podium Presentation at the 57th Annual Pennsylvania Asphalt Paving Association Conference, Hershey PA (January 18, 2017).

20. A Simple Semi Circular Bending (SCB) Test for Cold In-place Recycling (CIR) Performance Evaluation, Poster presentation in Session 722 of the 97th Annual Meeting of the Transportation Research Board, Washington DC (January 10, 2017).
21. Generalized Regression Approach to Develop Predictive Models for Dynamic Modulus (|E*|) and Phase Angle (δ) of Asphalt Mixtures, Poster presentation in Session 639 of the 97th Annual Meeting of the Transportation Research Board, Washington DC (January 10, 2017).
22. Recent Advancements and Outlook from RILEM RAP Technical Committee: Asphalt Binder for Recycled Asphalt Mixtures, Invited technical presentation in Session 227 of the 97th Annual Meeting of the Transportation Research Board, Washington DC (January 9, 2017).
23. Evaluation of Temperature and Laboratory Aging on Pavement Cracking Performance Fracture Tests, Technical presentation at the North East Asphalt User Producer Group Meeting (NEAUPG), Newark, DE (20 October 2016).
24. Case Study on Sustainable Pavement Designs using LCA: Adapting Pavement Designs for Climate Impacts, Technical presentation at the Annual Rilem Cluster F Joint Meetings at ETS Montreal (September 29, 2016).
25. Cracking Performance of Lower Asphalt Binder Coarse Hot Mix Asphalt Mixes, Poster Presentation at the 8th International RILEM Conference on Mechanisms of Cracking and Debonding in Pavements, Nantes, France (June, 7 2016).
26. IlliTC – Thermal Cracking Prediction System for Asphalt Pavements, Invited workshop presentation at the 96th Annual Meeting of the Transportation Research Board (Session 878), Washington DC (January 14, 2016).
27. Effects of Mix Design and Fracture Energy on Transverse Cracking Performance of Asphalt Pavements in Minnesota, Podium presentation at Session 760 of the 96th Annual Meeting of the Transportation Research Board, Washington DC (January 13, 2016).
28. Development of Patching Material and Method Selection Criteria, Invited Technical Presentation during the AHD20 Committee meeting at the 96th Annual Meeting of the Transportation Research Board, Washington DC (January 11, 2016).
29. An International Survey of Cold Recycled Asphalt Mix Designs, Invited workshop presentation at the 96th Annual Meeting of the Transportation Research Board (Session 120), Washington DC (January 10, 2016).
30. Cracking Mechanisms: State of the Art Review Summary and Scientific Lack and Future Research Direction, Presentation at the Annual RILEM Meeting for TC241-MCD at Universitat Politecnica de Catalunya Barcelonatech, Spain (November 4, 2015)
31. Implementation of Laboratory Testing to Predict Low Temperature Cracking Performance of Asphalt Pavements, Podium Presentation at the 8th RILEM SIB Symposium, Ancona Italy (October 10, 2015)

32. How Does Silo Storage Time Impact Asphalt Pavement Performance and Durability? FHWA Asphalt Mixture Expert Task Group Meeting (ETG), Oklahoma City, OK (September 16, 2015)
33. RAP Classification: An Experimental Protocol, Invited presentation at the 90th Annual Meeting of the Association of Asphalt Paving Technologists, Portland OR (March 9, 2015)
34. DCT – How it Affects Pavement Mix Design, Invited workshop presentation at the 59th Annual Asphalt Contractors' Workshop, Brooklyn Center MN (February 19, 2015)
35. Laboratory and Field Performance of Asphalt and Concrete Pavement Patching Materials and Techniques, Invited presentation at the 19th Annual TERRA Conference, St. Paul MN (February 12, 2015)
36. Implementation of Disk-shaped Compact Tension (DCT) Fracture Energy Performance Test for Asphalt Mixtures, Invited presentation at the 19th Annual TERRA Conference, St. Paul, MN (February 12, 2015)
37. Laboratory Evaluation of Partial Depth Patching Materials for Use in Winter Climates, Paper 15-0720, Podium Presentation at the 95rd Annual Meeting of the Transportation Research Board (TRB), Washington DC (January 2015)
38. Preliminary Findings from the Pothole Performance Study in Cold Climate, Invited Technical Presentation during the AHD20 Committee meeting at the 95rd Annual Meeting of the Transportation Research Board (TRB), Washington DC (January 2015)
39. Use of Computational Modeling to Determine Thermal Cracking Performance Sensitivity of Flexible Pavements to Fracture Energy Variations in Asphalt Mixtures, Invited Technical Presentation during the AFK50-1 Committee meeting at the 95rd Annual Meeting of the Transportation Research Board (TRB), Washington DC (January 2015)
40. Why performance testing is important?, Invited presentation at the MAAPT 61th Annual Asphalt Conference, St. Louis Park MN (December 10, 2014)
41. Development and Implementation of Low Temperature Cracking Performance Specification, Podium presentation at the Annual Northeast Asphalt User Producer Group Meeting (NEAUPG), Framingham MA (October 22, 2014)
42. Effect of Asphalt Binder Content and Grade on Transverse Field Cracking Performance of Minnesota's Roadways, ISAP 2014 Conference, Raleigh NC (June 4, 2014)
43. Fracture Energy Testing (DCT) and Design of HMA Overlays using Integrated Testing and Modeling, Invited Presentation at the Minnesota Department of Transportation Material Engineers' Meeting, St. Cloud MN (October 16, 2013)
44. Sustainability Evaluation of Asphalt Pavements Constructed using Recycled Materials and Mining By-Product, Poster and Podium Presentation, 5th European Asphalt Technology Association (EATA) Conference, Braunschweig, Germany (June 3-5, 2013)

45. Evaluation of Rapid-Hardening Cementitious Mixes for Partial Depth Repair of Rigid Pavements, Podium Presentation, 24th Annual Transportation Research Conference, St. Paul MN (May 22, 2013)
46. IlliTC – Low Temperature Cracking Prediction System for Asphalt Pavements, Podium Presentation, 88th Annual Meeting of the Association of Asphalt Paving Technologists (AAPT), Denver CO (April 8, 2013)
47. Sustainable Pavement Rehabilitation: Thin Bonded Wear Course with High Taconite and Recycled Asphalt Shingles Mix, 17th Annual TERRA (Transportation Engineering and Road Research Alliance) Pavement Conference, St. Paul MN (February 14, 2013)
48. Specifying Low Temperature Cracking Performance for Asphalt Mixtures, North Central Asphalt User Producer Group (NCAUPG) Technical Conference, St. Louis MO (January, 24th 2013)
49. Moisture Damage Evaluation of Asphalt Mixes containing Mining By-products (Taconite Tailings) using Traditional and Fracture Energy Tests, Technical Session 597, Paper 13-4613, Poster Presentation at the 93rd Annual Meeting of the Transportation Research Board (TRB), Washington DC. (January 2013)
50. IlliTC – User-Friendly Thermal Cracking Prediction Model, Invited Technical Presentation during the AFK50(1) Committee meeting at the 93rd Annual Meeting of the Transportation Research Board (TRB), Washington DC. (January 2013)
51. Beyond QC/QA Specifications, Invited Conference Presentation, 2012 Annual Conference of the Minnesota Asphalt Pavement Association, St. Louis Park MN. (December 2012)
52. Laboratory and Computational evaluation of Compact Tension Fracture Test and Texas Overlay Tester, 7th RILEM International Conference on Cracking in Pavements, Delft, the Netherlands. (June 2012)
53. Reflective Cracking Mitigation, Invited Workshop Presentation, 56th Annual Asphalt Contractors' Workshop, Brooklyn Center MN. (March 6th 2012)
54. Effects of Interface Bonding on Performance of Asphalt Pavements and Overlays, Invited Conference Presentation, 16th Annual TERRA Pavement Conference, St. Paul MN. (February 2012)
55. Viscoelastic Functionally Graded Finite Element Method using Recursive Time Integration with Applications to Thin Bonded Asphalt Overlays, Technical Presentation at the 11th U.S. National Congress on Computational Mechanics (USNCCM), Minneapolis MN (July 2011).
56. Low Temperature Fracture Evaluation of Asphalt Mixtures using Mechanical Testing and Acoustic Emissions Techniques, Technical Presentation at the 86th Annual Meeting of the Association of Asphalt Pavement Technologists (AAPT), Tampa FL (March 2011).
57. Thermal Cracking Prediction Model and Software for Asphalt Pavements, Technical Presentation at the 1st ASCE T&DI Congress, Chicago IL (March 2011).

58. Assessment of Cracking Resistance in Thin Bonded Bituminous Overlay Systems Using Compact Tension Fracture Test: Numerical Simulations and Early Field Performance, Technical Presentation at the Annual Meeting of the Transportation Research Board (TRB), Washington DC (January 2011).
59. Discrete Fracture Modeling of Pavement Cracking Phenomena, Joint Meeting for RILEM TC on Cracking in Asphalt Pavements and Federal Highway Administration's Expert Task Group on Modeling, Madison WI (September 2010).
60. Investigation of Strain Tolerant Mixture Reflective Crack Relief Systems: An Integrated Approach, Technical Presentation at the 85th Annual Meeting of the Association of Asphalt Pavement Technologists (AAPT), Sacramento CA (March 2010).
61. Reflective Crack Modeling Activities at the University of Illinois and Illinois Center for Transportation, Presentation for TRB Committee Meeting (AFD70(1)), Transportation Research Board Annual Meeting, Washington DC (January 2010).
62. Framework for Consideration of Aging and Thermal Gradients in Asphalt Concrete Pavements Simulation, Technical Presentation at the 10th U.S. National Congress of Computational Mechanics (USNCCM), Session: 2.4.7, Columbus OH (July 2009).
63. Analysis of Creep Properties using a Flattened Indirect Tension Test for Asphalt Concrete, Technical Presentation at the 8th International Conference on Creep, Shrinkage and Durability of Concrete and Concrete Structures (Concreep8), Ise-Shima, Japan (October 2008).
64. Asphalt Pavement Aging and Temperature Dependent Properties through a Functionally Graded Viscoelastic Model, Part-I: Development, Implementation, and Verification, Technical Presentation at the Multiscale, Multifunctional, and Functionally Graded Materials Conference, Sendai, Japan (September 2008).
65. Asphalt Pavement Aging and Temperature Dependent Properties through a Functionally Graded Viscoelastic Model, Part-II: Applications, Technical Presentation at the Multiscale, Multifunctional, and Functionally Graded Materials Conference, Sendai, Japan (September 2008).
66. Integration of Laboratory Testing, Field Performance Data, and Numerical Simulations for the Study of Low-Temperature Cracking, Technical Presentation at the 6th RILEM International Conference on Cracking in Pavements, Chicago IL (June 2008).
67. Development of Cohesive Zone Based Thermal Cracking Prediction Model (Poster Presentation), USDOT NexTrans Center Inaugural Summit, Purdue University, West Lafayette IN (May 2008).
68. Effect of Cooling Rate on Thermal Cracking of Asphalt Concrete Pavements, Technical Presentation at the 82nd Annual Meeting of the Association of Asphalt Paving Technologists (AAPT), Philadelphia, PA (April 2008)
69. Thermal Reflective Cracking of Asphalt Concrete Overlays (Poster Presentation), Annual Meeting of the Transportation Research Board, Session:528 (AFK-50),

Washington DC (January 2008).

70. Framework for Consideration of Aging and Thermal Gradients in Asphalt Concrete Pavements Simulation, Technical Presentation at the Ninth U.S. National Congress of Computational Mechanics (USNCCM9), Session: 063, San Francisco CA (July 2007).
71. Graded Viscoelastic Approach for Modeling Asphalt Concrete Pavements, Technical Presentation at the Multiscale and Functionally Graded Materials Conference, Ko-Olina HI (October 2006).
72. A Micromechanics-Based Approach for Determining Presence and Amount of Recycled Asphalt Pavement Material in Asphalt Concrete, Technical Presentation at the 79th Annual Meeting of the Association of Asphalt Paving Technologists (AAPT), Long Beach CA (March 2005).

F. Grants and Contracts

i. Current Grants and Contracts

Sponsor	Title	Grant Total	Personnel (Role)	Duration
U.S. DOT Pooled Fund Study (subcontract to Minnesota Department of Transportation)	Dielectric Profiling System (DPS) Pooled Fund Study Data Analysis	$121,038	J. Sias (PI), E. Dave (Co-PI)	12/21 – 02/23
National Road Research Alliance (Pooled Fund admin. MnDOT)	Flooded Pavement Assessment App – Phase II	$200,234	M. Ghayoomi (PI), E. Dave (Co-PI)	12/21 – 08/24
Minnesota Department of Transportation (MnDOT)	Simplified Wedge Splitting Test (SWST) for Asphalt Mixtures	$119,799	E. Dave (PI), J. Sias (Co-PI)	09/21 – 08/23
National Oceanic & Atmospheric Administration (NOAA)	Coastal Communities' Pavement Resilience to Sea Level Rise using Natural and Nature-Based Solutions	$1,821,547	J. Sias (PI), J. Jacobs (Co-PI), E. Dave (Co-PI), B. Webb (Co-PI, USA)	09/21 – 08/23
Vermont Agency for Transportation (Vtrans)	Development of Cost-Effective Rapid-Setting Concrete for Improved Bridge Joint Performance	$142,999	E. Dave (PI), J. Sias (Co-PI), Y. Azam (Co-PI)	07/21 – 06/23
Minnesota Local Road Research Board (LRRB)	Evaluation of Curing Effects on Cold In-Place Recycled (CIR) Materials	$175,852	E. Dave (PI), J. Sias (Co-PI).	12/19 – 04/22
National Road Research Alliance (Pooled Fund admin. MnDOT)	An Innovative Practical Approach to Assessing Bitumen Compatibility as a Means of Material Specification	$260,159	E. Dave (PI), J. Sias (Co-PI), H. Tabatabaee (Co-PI, Cargill)	05/20 – 04/22
National Road Research Alliance (Pooled Fund admin. MnDOT)	Long-Term Testing and Analysis on Asphalt Mix Rejuvenator Field Sections	$148,981	J. Sias (PI), E. Dave (Co-PI), A. Hanz (Co-PI, MTE), G. Reinke (Co-PI, MTE)	08/20 – 08/24
National Cooperative Highway Research Program (IDEA Program)	Laboratory Dielectric Measurement System (LDMS) for Asphalt Concrete	$208,352	J. Sias (PI), E. Dave (Co-PI)	01/21 – 12/22
National Road Research Alliance (Pooled Fund admin. MnDOT)	Impacts of Asphalt Pavement Milling on Integrity of Existing Pavement	$100,000	E. Dave (PI), J. Sias (Co PI), Rajib Mallick (Co PI)	1/21 – 12/22
Department of Defense / Broad Agency Announcement	Cold Regions Operations and Assessment Research	$4,505,876	J. Jacobs (PI); M. Palace (Co PI); E. Dave (Co PI)	1/21 – 01/24

ii. Pending Grants and Contracts

Sponsor	Title	Grant Total	Personnel (Role)	Status
Federal Aviation Administration (FAA) and National Asphalt Paving Association (NAPA)	Feasibility of Cold Central Plant Recycling (CCPR) Asphalt Mixtures for Airports (Subcontract to University of Arkansas)	$187,488	E. Dave (PI); J. Sias (Co-PI)	In-review (Submitted 02/22)
National Cooperative Highway Research Program (NCHRP)	NCHRP 9-68: Recycled Asphalt Materials: Binder Availability and Its Impact on Mix Performance	$499,994	J. Sias (PI); E. Dave (Co-PI)	In-review (Submitted 11/21)
National Road Research Alliance (Pooled Fund admin. MnDOT)	Validation of Loose Mix Aging Procedures for Cracking Resistance Evaluation in Balanced Mix Design (Subcontract to Auburn Univ.)	$20,000	J. Sias (PI), E. Dave (Co-PI)	Accepted, Contracting underway
National Road Research Alliance (Pooled Fund admin. MnDOT)	MnROAD Reflective Cracking Challenge	$225,000	E. Dave (PI); J. Sias (Co-PI), Benjamin Bowers (Co-PI, Auburn Univ.)	Accepted, Contracting underway
National Road Research Alliance (Pooled Fund admin. MnDOT)	Reclamation and Recycling Techniques to Achieve Perpetual Pavements (subcontract to Braun Intertec)	$29,999	E. Dave (PI); J. Sias (Co-PI),	Accepted, Contracting underway
Minnesota Department of Transportation and Minnesota Local Road Research Board	Improving and Developing Pavement Design Inputs and Performance Functions for Cold Recycled Pavement Layers in Minnesota	$163,913	E. Dave (PI); J. Sias (Co-PI)	Accepted, Contracting underway
Minnesota Department of Transportation and Minnesota Local Road Research Board	Asphalt Pavement Cracking Performance Data Analysis	$130,993	E. Dave (PI); J. Sias (Co-PI)	Accepted, Contacting underway

iii. Completed Grants and Contracts

Sponsor	Title	Grant Total	Personnel (Role)	Duration
Minnesota Department of Transportation	Synthesis of Asphalt Concrete Performance Tests	$20,000	E. Dave (PI)	04/11 – 09/11
Minnesota Local Road Research Board	Sustainable Pavement Rehabilitation using Thin Bonded Overlay with High Taconite Mix	$10,000	E. Dave (PI)	07/11 – 09/11
Minnesota Department of Transportation	Evaluation of Bridge Wearing Courses	$90,872	E. Dave (PI)	05/12 – 06/15
Grancrete Inc.	Testing of Durability of Concrete Materials in Low pH Environment	$6,529	E. Dave (PI)	06/12 – 05/13
Minnesota Department of Transportation	Disk-shaped Compact Tension Testing of Asphalt Concrete	$25,000	E. Dave (PI)	09/12 – 05/14
Minnesota Department of Transportation	Evaluation of Concrete and Mortar for Partial Depth Repair	$74,000	E. Dave (PI); E. Musselman (Co PI, Villanova Univ.)	09/12 – 07/14
Minnesota Department of Transportation	Overlay Design Recommendations	$25,000	E. Dave (PI)	02/13 – 07/13
Minnesota Department of Transportation	Impact of Lower Asphalt Binder Content for Coarse Hot-Mix Asphalt	$89,910	E. Dave (PI), R. Williams (Co PI, Iowa State Univ.)	07/14 – 06/17
Minnesota Department of Transportation	Comprehensive Field Evaluation of Asphalt Patching Techniques and Development of Best Practices Manual and Simple Decision Tree	$87,106	J. Dailey (PI), E. Dave (Co PI)	03/14 – 05/16
Minnesota Department of Transportation	Asphalt Mixture Performance Testing for Thermal Cracking	$40,000	C. Hanson (PI), E. Dave (Co PI)	03/14 – 05/16
Minnesota Department of Transportation (MnDOT)	Implementation of DCT Performance Specifications	$186,982	A. Schokker (PI, Univ. of MN Duluth), E. Dave (Co PI)	07/14 – 07/19

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Completed Grants (continued)

Sponsor	Title	Grant Total	Personnel (Role)	Duration
New England Transportation Consortium (NETC)	Improved Regionalization of Quality Assurance (QA) Functions: Phase-I and II	$125,000	E. Dave (PI), J. Sias (Co PI), R. Medina (Co PI), A. Perkins (Consult.)	04/15 – 02/19
New Hampshire Department of Transportation (NHDOT)	Incorporating Impact of Aging on Cracking Performance of Mixtures during Design	$155,000	J. Sias (PI), E. Dave (Co PI)	12/16 – 06/19
New Hampshire Department of Transportation (NHDOT)	Layer Coefficients for NHDOT Pavement Design	$150,000	E. Dave (PI), J. Sias (Co PI)	12/16 – 07/19
New Hampshire Department of Transportation (NHDOT)	Early Age Cracking in Concrete Bridges	$56,080	E. Dave (PI)	12/16 – 11/19
New England Transportation Consortium (NETC)	Moisture Susceptibility Testing for Hot Mix Asphalt Pavements in New England	$150,000	E. Dave (PI), J. Sias (Co PI), R. Mallick (Co PI, WPI), M. Tao (Co PI, WPI)	01/17 – 07/19
New England Transportation Consortium	NETC QR15-4: Quality Assurance (QA) Processes for Asphalt Pavement Construction in the Northeast	$49,999	J. Sias (PI), E. Dave (Co PI)	07/18 – 02/19
Minnesota Department of Transportation	Effects of Air Voids on DCT Fracture Energy Measurement	$9,698	E. Dave (PI)	05/19 – 07/19
Department of Defense, CRREL	Evaluation of Solid Palletized Polymer for Asphalt Mixtures	$50,305	E. Dave (PI), J. Sias (Co-PI)	06/19 – 08/20
Surface Tech	Value of Aramid (Polymer) Fiber in RAP Mixtures	$30,000	J. Sias (PI); E. Dave (Co-PI)	07/19 – 02/20
Department of Defense / Broad Agency Announcement	Cold Regions Operations and Assessment Research	$1,119,363	J. Jacobs (PI); M. Palace (Co PI); E. Dave (Co PI)	02/18 – 02/21
BASF Chemicals (agreement through BATT)	Performance Testing of Asphalt Mixtures with New Modifier	$26,700	J. Sias (PI), E. Dave (Co-PI)	08/20 – 12/20
National Road Research Alliance (Pooled Fund admin. MnDOT)	Developing Best Practices for Rehabilitation of Concrete with Hot Mix Asphalt (HMA) Overlays related to Density and Reflective Cracking	$169,999	E. Dave (PI), J. Sias (Co PI).	03/18 – 07/21

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Completed Grants (continued)

Sponsor	Title	Grant Total	Personnel (Role)	Duration
National Road Research Alliance (Pooled Fund admin. MnDOT)	Mechanistic Load Restriction Decision Platform for Pavement Systems Prone to Moisture Variations	$90,231	M. Ghayoomi (PI), E. Dave (Co-PI)	08/19 – 07/21
EUROVIA	Reflective and Thermal Cracking Performance Testing	$18,992	E. Dave (PI), J. Sias (Co-PI)	10/20 – 09/21
National Cooperative Highway Research Program (Synthesis Program)	Use of Rejuvenators in Asphalt Concrete Mixtures Containing High RAP	$44,999	J. Sias (PI); E. Dave (Co-PI)	11/20 – 10/21

iv. Miscellaneous Grants (Institutional Grants, Internal Grants and Other Research Activities)

Title	Grant Total	Personnel (Role and Share)	Status
I-Site FUTURE: Cities of Tomorrow Visiting Professorship	15-25% Appointment	E. Dave	06/21 – 05/24
Visiting professorship at the Université Gustave Eiffel (Nantes France) from French Government. Between 15 – 25% paid appointment (8 – 13 weeks/year) for next three years.			
Airport Cooperative Research Program (ACRP) Graduate Research Award	$12,000	E. Dave (faculty mentor)	09/19 – 08/20
Contribution and Share: Development of fellowship application with Ph.D. student Danial Mirzaiyanrajeh. Supervising research for duration of fellowship.			
Minnesota Department of Transportation Master Research Agreement	N.A.	E. Dave; E. Bell; J. Sias; M. Ghayoomi; J. Jacobs, K. Kwiatkowski	2020 – present
Contributions and Share: Developed and submitted a proposal to establish Master Agreement for Academic Research. Agreement allows UNH researchers to participate in Minnesota Department of Transportation's research program for 5 years.			
Vermont Agency of Transportation Master Research Agreement	N.A.	E. Dave; Y. Azam, E. Bell; J. Sias; M. Ghayoomi; J. Jacobs, K. Kwiatkowski	2021 – present
Contributions and Share: Developed and submitted a proposal to establish Master Agreement for Academic Research. Agreement allows UNH researchers to participate in Vermont Agency of Transportation's research program for 3 years.			
Global Engagement Faculty International Development Grant	$1,500	E. Dave	Granted for travel to Spain in June 2019
Systems Dynamics-Based Decision System for Roadway Mechanistic Load Capacity Prediction Protocol (internal grant through UNH CIRC)	$10,000	E. Dave (PI); M. Ghayoomi (co-PI)	05/19 – 08/19
Global Engagement Faculty International Development Grant	$1,500	E. Dave	Granted for travel to U.K. in October 2017
Minnesota Department of Transportation Master Research Agreement	N.A.	E. Dave; E. Bell; J. Sias; M. Ghayoomi; J. Jacobs	2016 – 2020
Contributions and Share: Developed and submitted a proposal to establish Master Agreement for Academic Research. Agreement allows UNH researchers to participate in Minnesota Department of Transportation's research program for 5 years.			

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Miscellaneous (Internal Grants and Other Research Activities) (continued)

Title	Grant Total	Personnel (Role and Share)	Status
UNH Center for Infrastructure Resiliency to Climate (UCIRC)	$200,000	J. Sias and J. Jacobs (Co-Directors)	Active since 2015
Contributions and Share: Participated in development of proposal. Active faculty member of the Center. UCIRC has provided funding support for 3 undergraduate researchers and 1 summer fellowship. Contributed to mentoring and working with UCIRC Post-Doc Researcher on developing research proposals.			
UNH Sustainability Institute Summer Fellowship Program	$12,000; $12,000	E. Dave and W. Mo (Co-Mentors)	05/16 – 08/16 and 05/18 – 08/18
UNH Faculty Development Grant	$1,000	E. Dave	01/17 – 06/17
Univ. of Minnesota Duluth Chancellor's Small Grant	$750; $1,000	E. Dave	03/2011; 03/2012
Univ. of Minnesota Duluth Faculty Development Fund	$400; $400	E. Dave	11/2010; 01/2011
Univ. of Minnesota Grant in Aid Program	$26,045	E. Dave	05/2011 – 12/2012
Univ. of Minnesota International Travel Fund	$1,500	E. Dave	04/2011

G. Honors and Awards

1. Visiting Professorship, I-SITE FUTURE Program, Université Gustave Eiffel, France (2021 – 2024)
2. Two co-authored papers in the *Transportation Research Record* have obtained Altmetrics ranking of top 5% (2019)
3. Faculty Member for the Doctorate School in Engineering and Architecture, University of Parma (2019 – present)
4. Excellent Paper Award, International Seminar on Resilient Roads and Climate Change Adaptation, Beijing China (2018)
5. UNH Outstanding Assistant Professor Award (2018)
6. Nominated for Best Poster Award at the 7th European Asphalt Technology Association (June 2017)
7. "Best Supporting Moderator" Award by CEE Students for 2016 UNH Civil and Environmental Alumni Conference (April 2016)
8. IFSTTAR Researcher Travel Award: €1,500 (February 2016)
   Travel award from IFSTTAR: The French Institute of Science and Technology for Transport, Development and Networks for travel to Nantes France for exchange of research findings and delivering a research seminar.
9. Runner-up for the Best Poster Award at the 12th ISAP Conference on Asphalt Pavements, Raleigh, NC (June 2014) (With Graduate Student Benjamin Helmer)
10. Center for Transportation Studies Faculty Scholar (FY 14-15)
11. University of Minnesota Grant-in-Aid Program: $ 26,045
    Project: Increasing Sustainability and Renewability of Highway Infrastructure through Study of Moisture Damage in Asphalt Concrete Mixtures Containing Taconite Tailings (May 2011 – December 2012)
12. List of Teachers Ranked as Excellent by their Students (University of Illinois):
    (a) CEE310, "Introduction to Transportation Engineering" (Spring 2008)
    (b) CEE405, "Asphalt Materials–I" (Fall 2007)
13. Association of Asphalt Paving Technologists Scholarship Award (2006)
14. Runner-up for Walter J. Emmons Award for Best Paper of the Association of Asphalt Paving Technologists (2005)
15. Sardar Patel University:
    a. Modern Construction Company Gold Medal (2001)
    b. Shri Manilal Jesangbhai Prize (2001)
    c. Shri Mukesh Patel Gold Medal (2001)
    d. Prof. S. N. Patel Gold Medal (2001)
    e. Prof. H. J. Shroff Cash Prize (2000)
    f. Late Prof. V. K. Padmanabhan Cash Prize (2000)

3. TEACHING AND MENTORING

A. Courses Taught and Overall Evaluation Score

I. University of New Hampshire

Course Number and Title	Level	Year	Term	Credits	Enrollment		Overall Instructor Rating (Scale: 1 – 5)
					U	G	
INCO 590: Student Research Exp.	N.A.	2017	Spring	1.0	1	-	N.A.
		2017	Fall	1.0	2	-	N.A.
CEE 635: Engineering Materials	Junior	2015	Fall	4.0	76	-	4.08
		2016	Fall	4.0	88	-	4.62
		2017	Fall	4.0	83	-	4.57
		2018	Fall	4.0	67	-	4.43
		2020	Fall	4.0	54	-	4.36
CEE 665 Soil Mechanics	Junior	2019	Spring	4.0	65	-	3.94
CEE 735/835: Production and Properties of Concrete	Senior/Grad.	2015	Spring	3.0	14	4	5.00
		2017	Spring	3.0	19	8	4.86
		2019	Spring	3.0	35	3	4.50
		2021	Spring	3.0	12	4	see footnote [5]
CEE 736/836: Asphalt Materials	Senior/Grad.	2016	Spring	3.0	15	7	4.53
CEE 737/837: Pavement Rehabilitation, Maint. And Management	Senior/Grad.	2018	Spring	3.0	28	3	4.54
		2020	Spring	3.0	23	3	4.73
CEE 795: Independent Study	Senior	2017	Spring	1.0	2	-	N.A.
		2018	Fall	3.0	1	-	N.A.
CEE 895: Independent Study	Grad	2016	Spring	1.0	-	1	N.A.
		2017	Spring	1.0	-	1	N.A.
		2018	Fall	3.0	-	1	N.A.
CEE 936: Advance Asphalt Materials	Grad	2017	Spring	3.0	-	2	N.A.
		2019	Spring	3.0	-	4	N.A.
		2021	Spring	3.0	-	3	N.A.
CEE 949: Advance Pavement Design	Grad	2018	Spring	3.0	-	6	4.75
		2020	Spring	3.0	-	3	N.A.

[5] New non numerical evaluation system used by UNH. 90% respondents Strongly Agree to “Course helped me expand my knowledge on a topic.”

II. Other Institutions

University of Minnesota Duluth

Course Number and Title	Level	Year	Term	Credits	Enrollment		Average Evaluation Score (Scale: 1 – 6)
					U	G	
CE3027: Infrastructure Materials	Junior	2010	Fall	4.0	34	-	4.83
		2011	Spring	4.0	12	-	5.43
		2011	Fall	4.0	34	-	5.07
		2012	Spring	4.0	35	-	5.14
		2012	Fall	4.0	36	-	4.88
		2013	Spring	4.0	25	-	5.13
		2013	Fall	4.0	34	-	5.43
		2014	Spring	4.0	25	-	5.17
		2014	Fall	4.0	24	-	5.08
CE4316/5316: Pavement Design	Senior /Grad.	2011	Fall	3.0	18	4	U: 4.81 / G:4.51
		2013	Fall	3.0	26	5	U:5.31 / G:5.43
CE4318/5318 : Pavement Maint. Rehab. & Mgmt.	Senior /Grad.	2012	Fall	3.0	19	8	U:5.25 / G:5.15
		2014	Fall	3.0	26	1	U: 5.20
CE5027: Adv. Infra. Materials	Grad	2012	Fall	3.0	-	8	5.12
		2014	Fall	3.0	-	9	5.38

CE5027: Co-taught with another instructor. Responsible for 1.5 Credits; U: Undergrad section of course, G: Graduate section of course.

University of Illinois

Course Number and Title	Level	Year	Term	Credits	Enrollment		Instructor's Overall Teaching Effectiveness (Scale: 1 – 5)
					U	G	
CEE201: Systems Engineering	Fresh.	2010	Spring	3.0	128	-	4.30
CEE415: Highway Geometric Design	Senior	2009	Spring	4.0	16	-	4.40

B. Development of New Courses or Curriculum Revision

At University of New Hampshire

Course Number & Title	Type	Level	Year	Credits	Course Description
CIE 722/822: Production and Properties of Concrete	Course had not been taught for multiple years. New course for E. Dave	Senor/Grad.	2015	3.0	Basic properties of hydraulic cements and mineral aggregates, and their interactions in the properties of plastic and hardened concrete; modifications through admixtures; production handling and placement problems; specifications; quality control and acceptance testing; lightweight, heavyweight, and other special concretes.
CIE 923: Advance Asphalt Materials	New Course	Grad	2017	3.0	Examination of chemical composition of asphalt cements, current technologies for modification, and inclusion of recycled materials to meet desired physical properties. Advanced characterization of asphalt materials, modelling, advanced mixture design tools.
CEE 949: Advance Pavement Design	New Course	Grad	2018	3.0	Advanced flexible pavement design and analysis including rehabilitation/overlay design. Includes development of mechanistic-empirical methods, advanced pavement structural analysis, and advanced material characterization.
CEE 737/837 : Pavement Rehabilitation, Maintenance and Management	New Course	Senior/Grad	2018	3.0	Technical and financial strategies to extend the life of highway and airfield pavements. The course topics will include: Assessment of pavement functional and structural condition, suitability of pavement maintenance and repair techniques, use of pavement preservation processes, and application of asset management to extend the life of pavement infrastructure.

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New course development / curriculum revision (continued)

Course Number & Title	Type	Level	Year	Credits	Course Description
CEE 735/835: Production and Properties of Concrete	Course curriculum and student work was thoroughly revised to offer course simultaneously as “in-class”, “synchronous online” and “asynchronous online” formats.	Senor/Grad.	2015	3.0	Basic properties of hydraulic cements and mineral aggregates, and their interactions in the properties of plastic and hardened concrete; modifications through admixtures; production handling and placement problems; specifications; quality control and acceptance testing; lightweight, heavyweight, and other special concretes.
CEE 665	New Course for E. Dave	Junior	2019	4.0	Introduction to geological principles, soil-phase relationships, clay structure and mineralogy, physical properties, and soil classification. These principles are applied to compatibility, permeability, seepage, groundwater flow, and compressibility of soils. Strength and behavior of soils are evaluated under various loading conditions.

At University of Minnesota Duluth

Course Number and Title	Type	Level	Year	Credits	Course Description
CE3027: Infrastructure Materials	New Course	Junior	2010	4.0	Introduction to the behavior and structure of civil engineering materials, including laboratory investigation of physical and mechanical properties. Materials examined include aggregates, concrete, steel, wood, asphalt and polymers.
CE4316/5316: Pavement Design	New Course	Senior /Grad.	2011	3.0	Analysis, behavior, performance, and structural design of pavements for highways and airfields will be discussed. Prominent pavement distress mechanisms, their causes and remedial measures will be presented. Other topics include: climate factors, rehabilitation, sustainability and renewability in pavement engineering, life cycle design economics, and traffic loadings.
CE4318/5318: Pavement Maint. Rehab. & Mgmt.	New Course	Senior	2012	3.0	This course covers the technical and financial strategies to extend the life of highway and airfield pavements. The course topics will include: Assessment of pavement functional and structural condition, suitability of pavement maintenance and repair techniques, use of pavement preservation processes, and application of asset management to extend the life of pavement infrastructure.
CE5027: Adv. Infra. Materials	New Course	Grad	2012	3.0	This course will cover advanced topics related to the behavior of asphalt concrete and Portland cement concrete. Topics to be covered include: properties of asphalt binder; hot mix, warm mix, and cold mix asphalt concrete; Portland cement production and chemistry; concrete durability; and the properties of FRC, FRP, and SCC

CE5027 co-developed with another instructor. Responsible for 1.5 credit.

C. Mentoring of Graduate Students

A. PhD Students

Name	Dissertation Title/Topic	Funding	Mentoring Duration	Current Status	Note
Christopher DeDene	Investigation of the Thermal Parameters of Reclaimed Asphalt Materials with Applications to Asphalt Recycling	Fellowship (NSF GRFP)	2012 – 14	Graduated (2014)	Co-advised with Dr. Mihai Marasteanu.
Saman Salari	Fracture and Fatigue Evaluation of Asphalt Mixtures	Teach. Assist.	2015 – 16	Inactive	Co-advised with Dr. Jo Sias. Eshan Dave was primary advisor.
Mirkat Oshone	Performance Based and Performance Related Specifications for Asphalt Concrete	Teach. Assist. & Ext. Grant (MNDOT and RIDOT)	2015 – 2018	Graduated (2018)	Co-advised with Dr. Jo Sias. Dr. Sias was primary advisor.
Yuefeng Zhu	Fracture Index Parameters for Asphalt Performance Evaluation	Chinese Scientific Research Council	12 Months (2015 – 2016)	Returned to Chang'an University	Visiting Ph.D. scholar. Co-advised with Dr. J. Sias.
Rasool Nemati	Evaluation of Structural Contribution of Asphalt Mixtures through Improved Performance Parameters	Teach. Assist. & Ext. Grant (NETC & NHDOT)	2016 – 2019	Graduated (2019)	Co-advised with Dr. Jo Sias. Eshan Dave was primary advisor.
Runhua Zhang	Evaluation and Identification of Cracking Susceptibility of Asphalt Binders and Mixtures by Incorporation of Effects of Aging on Performance	Teach. Assist. & Ext. Grant (NHDOT)	2017 – 2020	Graduated (2020)	Co-advised with Dr. Jo Sias. Dr. Sias was primary advisor.

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Ph.D. Students (continued)

Name	Dissertation Title/Topic	Funding	Mentoring Duration	Current Status	Note
Katie Haslett	Mechanistic Modelling Framework and Life Cycle Assessment Approach for Pavement Rehabilitation Using Asphalt Concrete Overlays	Teach. Assist. & Ext. Grant (NRRA)	2018 – 2021	Graduated (2021)	Co-advised with Dr. Jo Sias. Eshan Dave was primary advisor.
Danial Mirzaiyanra-jeh	Balancing fracture and fatigue performance in asphalt pavements: A hybrid mechanistic and statistical modelling approach	Teach. Assist. ACRP Fellowship & Ext. Grant (MnDOT, NRRA, DoD)	2019 – 2021	Graduated (2021)	Co-advised with Dr. Jo Sias. Eshan Dave was primary advisor.
Francesco Preti[6]	Laboratory and Computational Mechanics-based Framework for the Analysis and Design of Cold Recycled Pavement Layers	University of Parma, Minnesota Ext. Grant (MN LRRB) & Teach. Assist.	2018 – 2021	Graduated (2021)	Co-advised with Dr. Jo Sias and Dr. G. Tebaldi (University of Parma).
Chibuike Ogbo	Curing of Cold In-place Recycled Pavements	Teach. Assist. & Ext. Grant (MN LRRB)	2018 – present	Active	Co-advised with Dr. Jo Sias. Eshan Dave is primary advisor.
Zheng Wang	Performance-based evaluation of asphalt material compatibility and recycling agent effectiveness	Teach. Assist. & Ext. Grant (NRRA)	2020 – present	Active	Co-advised with Dr. Jo Sias. Dr. Sias is primary advisor.

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[6] Student is UNH's first Cotutelle (duel Ph.D.) diploma holder.

Ph.D. Students (continued)

Name	Dissertation Title/Topic	Funding	Mentoring Duration	Current Status	Note
Farah Zaremotekhases	Developing Unpilotted Aerial System (UAS) Based Sensing System for Pavement Frost Heaves	Teach. Assist. & Ext. Grant (DoD BAA)	2021 – present	Active	Co-advised with Dr. Jo Sias. Eshan Dave is primary advisor.
Stephanos Khalil	Balanced Mix Design Development for New Hampshire	Teach. Assist. & Ext. Grant (NRRA)	2021 – present	Active	Co-advised with Dr. Jo Sias. Eshan Dave is primary advisor.
Ahmad Mehrabi	Developing Nature-based and Nature Informed Solutions for Adaptation of Coastal Roadways	Ext. Grant (NOAA)	2022 – present	Active	Co-advised with Dr. Jo Sias. Dr. Sias is primary advisor.

B. MS Students (thesis option)

Name	Thesis Title / Topic	Funding	Duration	Current Status
Philip Koktan	Comparative Evaluation of Asphalt Concrete Performance Tests	Teach. Assist. & Ext. Grant Funding (MNDOT)	2011 – 12	Graduated (2012)
Justin J. Baker	Cracking Performance of Asphalt Mixtures Containing Taconite Tailings using Traditional and Multiple Freeze-Thaw Moisture Conditioning Methods.	Int. Grant Funding (UMN Grant in Aid program)	2011 – 12	Graduated (2012)
Daniel A. Abramson	Comprehensive Evaluation of Multistrand Post-Tensioning Anchorage Systems for Seismic Resilient Rocking Wall Structures	Ext. Grant (NSF NEES)	2012 – 13	Graduated (2013)
Chelsea E. Hanson	Effects of Mix Design Parameters on Indirect Tensile Strength and Field Cracking Performance of Asphalt Pavements	Ext. Grant (MNDOT) & Graduate Fellowship	2011 – 13	Graduated (2013)
Sara C. Lindberg	Micromechanical Modeling of Composite Materials Using the Finite Element Method for Balancing Discretization and Material Modeling Error.	Teach. Assist. & Graduate Fellowship	2012 – 13	Graduated (2013)
Jay Dailey	Enhanced Performance Criteria for Acceptance of Rigid Pavement Patching Materials Used in Cold Climate Regions.	Ext. Grant (MNDOT)	2011 – 13	Graduated (2013)
Robb Peterson	Engineered Design of Fiber Reinforced Precast Refractory Material for Taconite Processing Furnaces.	Cliffs Natural Resources (Industry Funding)	2012 – 14	Graduated (2014)
Benjamin Helmer	Impact of Asphalt Mixture Design Parameters on Transverse Cracking Performance and Laboratory Testing Results.	Ext. Grant (MNDOT) & Teach. Assist.	2013 – 15	Graduated (2015)

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MS Students (thesis option) (continued)

Name	Thesis Title / Topic	Funding	Duration	Current Status
Robert Kostick	A Comprehensive Evaluation of High Friction Overlay Systems on Bridge Decks in Cold Climate Regions.	Ext. Grant (MNDOT)	2013 – 15	Graduated (2015)
Chelsea M. Hoplin	Cracking Performance Evaluation of Minnesota Asphalt Pavements.	Ext. Grant (MNDOT) & Teach. Assist.	2014 – 16	Graduated (2015)
Christopher DeCarlo	Lab Protocol for Moisture Sensitivity and Remedial Measure Assessment of Asphalt Mixtures	Ext. Grant (NETC) & Teach. Assist.	2016 – 18	Graduated (2018)
Eric Caron	Investigation and Mitigation of Early Age Cracking in Concrete Bridge Curbs	Ext. Grant (NHDOT) & Teach. Assist.	2018 – 2019	Graduated (2019)
Miranda Chiappini[7]	Finite Element Modelling of Cold In-place Recycled Asphalt Materials and Pavements	Fellowship from University of Parma	2020	Graduated (2021) Visiting scholar from University of Parma
Spencer McKinnon	Evaluation of Rapid Setting Concrete Mixtures for Bridge Joints	Ext. Grant (Vtrans) & Teach. Assist	2021 – present	Active

[7] Dr. Dave was advisor for 10-month thesis research visit at UNH.

C. M. Eng. Students (non-thesis option)

Name	Project Title / Topic	Funding	Duration	Current Status
Michael Kleven	Structural Design of a Steel and Concrete Braced Frame	Teach. Assist.	2010 – 12	Graduated (2012)
Tiffany Smith	Addition of Supplementary Cementations Materials to Concrete Mix Designs for Strength and Economic Benefit	Unfunded	2011 – 13	Graduated (2013)
Allison Carlson	Design of Four Span Highway Bridge Overcrossing Railroad for Community Improvement in West Duluth	Unfunded	2013 – 14	Graduated (2014)
Travis Jensen	Waseca Industrial Road Extension Highway Design	Unfunded	2013 – 14	Graduated (2014)
Benjamin Hayes	Geotechnical and Structural Design of a Small Wind Turbine	Funded through ROTC	2013 – 14	Graduated (2014)
Alireza Afshar	Review of Corrosion Processes, Reduction Methods and Measurement Techniques for Reinforced Cement Concrete	Unfunded	2015	Graduated (2015)
Michael Kotowski	Improved Regionalization of Quality Assurance Processes for Prestressed and Precast Concrete Elements used in Highway Construction	Ext. Grant (NETC)	2015 – 16	Graduated (2015)

D. Other Graduate Mentoring

A. PhD Exam and Dissertation Committees

Name (Student Institution)	Dissertation Title/Topic	Role and Duration of Mentoring	Status
Sarfraz Ahmed (Univ. of Illinois)	Fracture Characterization of Thin Bonded Asphalt Concrete Overlay Systems	Ph.D. Exam and Dissertation Committee (2009 – 11)	Graduated (2011)
Chaiwat Nachiangmai (Univ. of Illinois)	Experimental Evaluation of Monotonic and Cyclic Fracture Behavior using Disk-Shaped Compact Tension Test and Released Energy Approach	Ph.D. Exam and Dissertation Committee (2010 – 14)	Graduated (2014)
Salman Hakimzadeh (Univ. of Illinois)	Evaluation of Bond Between Pavement Layers: Fracture Mechanics Approach	Ph.D. Exam and Dissertation Committee (2010 – 15)	Graduated (2015)
David Mensching (UNH)	Developing Index Parameters for Cracking in Asphalt Pavements through Black Space and Viscoelastic Continuum Damage Principles	Ph.D. Dissertation Committee (2015)	Graduated (2015)
Mohamed Elshaer (UNH)	Moisture Dependent Performance of Flexible Pavements	Ph.D. Exam and Dissertation Committee (2015 – 17)	Graduated (2017)
Reyhaneh Rahbar-Rastegar (UNH)	Developing a Performance-Related Parameter for Asphalt Pavement with the Effect of Aging	Ph.D. Exam and Dissertation Committee (2015 – 2017)	Graduated (2017)
Pegah Jarast-Shamsabadi (UNH)	Numerical and Physical Modeling of Cone Penetration in Unsaturated Soils and Numerical Simulation of Fracture Propagation in Shale Rock during Brazilian Test	Ph.D. Exam and Dissertation Committee (2016 – 2017)	Graduated (2017)
Jayne Knott (UNH)	Vulnerability Evaluation of Coastal Pavement Infrastructure to Sea Level Rise	Ph.D. Exam and Dissertation Committee (2016 – 2019)	Graduated (2019)

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Ph.D. Exam and Dissertation Committee (continued)

Name (Student Institution)	Dissertation Title/Topic	Role and Duration of Mentoring	Status
Nasser Yari (UNH)	New Model for Bridge Management System	Ph.D. Exam and Dissertation Committee (2017 – 2018)	Graduated (2018)
Saeed Badeli (École de technologie supérieure ÉTS Montreal)	Evaluation of the Damage of an Asphalt Mix under Repeated Freeze-Thaw Cycles	Ph.D. Exam Committee (2018)	Graduated (2018)
Gustavo Menegusso Pires (University of Nottingham, UK)	Sustainable Asphalt for Surface Courses: An Investigation on Reclaimed Asphalt Degree of Binder Activation	Ph.D. Exam Committee (2018)	Graduated (2019)
Beatriz Chagas Silva Gouveia (University of Parma)	Development of Quick-lime based Bituminous Stabilized Mixtures for Sustainable Pavements	Ph.D. Exam and Dissertation Committee (2020 – 2021)	Graduated (2021)
Melissa Gloekler (UNH)	Development of a Sunken Oil Transport Tool Using Mesoscale Experiments	Ph.D. Exam and Dissertation Committee (2019 – 2021)	Graduated (2021)
Hassan Fadil (KTH, Stockholm, Sweden)	Spherical Indentation Technique for Multiscale Characterisation of Asphalt Mixtures	Opponent for the Ph.D. Exam (2021)	Graduated (2021)
Mahsa Moradi (UNH)	Uncertainties in Land Surface Modeling of Winter Soil Temperature: Causes And Impacts	Ph.D. Qualifying and Prelim Exam Committee (2021-2022)	Active

B. M.S. Thesis and M.Eng. Project Committees

Name (Student Institution)	Thesis Title/Topic	Role and Duration of Mentoring	Status
Christopher Bruhn (Univ. of MN Duluth)	Impact Resistance of Filled Concrete Box Sections	M.S. Thesis Committee (2011 – 13)	Graduated (2013)
Amanda Garbacz (Univ. of Arkansas)	Finite Element Simulation of Fracture in Asphalt Mixtures	M.S. Thesis Committee (2012 – 13)	Degree awarded posthumously (2013)
Benjamin Thiesse (Univ. of MN Duluth)	Durability of Post-Tensioning Grout Systems with Mixed-In Chlorides	M.S. Thesis Committee (2012 – 14)	Graduated (2014)
Seongah Hong (Univ. of MN Duluth)	Development and Estimation of Traffic Data-Based Operational Measures for Winter Snow Management	M.S. Thesis Committee (2013 – 14)	Graduated (2014)
Christopher Jacques (UNH)	Impact of Silo Storage Time and Specimen Fabrication Methods on Hot Mix Asphalt Mixtures	M.S. Thesis Committee (2015 – 16)	Graduated (2016)
Khoa Le (UNH)	A Direct Simple Shear Device for the Dynamic Characterization of Partially Saturated Soils	M.S. Thesis Committee (2016)	Graduated (2016)
Matthew Golde (UNH)	Applying Best Practices In Pedestrian Facilities Asset Management: A Case Study In Two New Hampshire Municipalities	M.S. Thesis Committee (2017)	Graduated (2017)
Travis Manning (UNH)	Enhanced In Service Condition Assessment of Bridges using GoPro Cameras	M.S. Thesis Committee (2017)	Graduated (2017)
Duncan McGeehan (UNH)	Experimental Evaluation of Fatigue Test Setup for a Gusset-Less Truss Connection	M.S. Thesis Committee (2018)	Graduated (2018)
André Kazuo Kuchiishi (University of Sao Paulo, Brazil)	Mechanical Behavior of Cold Recycled Asphalt Mixtures	M.S. Thesis Committee (2018-19)	Graduated (2019)
Jared Munch (University of Minnesota Duluth)	Field and Laboratory Evaluation of Asphalt Crack Sealant Performance	M.S. Thesis Committee (2018 – 2020)	Graduated (2020)

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M.S. Thesis and M.Eng. Project Committee (continued)

Name (Student Institution)	Dissertation Title/Topic	Role and Duration of Mentoring	Status
Christian Harris (UNH)	Fatigue Testing of Defective Weld Samples	M.S. Thesis Committee (2019)	Graduated (2019)
Aiden Short (UNH)	Use of Unmanned Aerial Vehicles and Structure from Motion Software to Estimate Rooftop Snow Loads	M.Eng. Project Committee (2020)	Graduated (2020)
Shahjalal Chowdhury (Boise State University)	Quantifying the Effects of Climate Change on Pavement Performance Prediction using AASHTOWare Pavement ME Design	M.S. Thesis Committee (2019 – 2020)	Graduated (2020)
Nathan Lemartinel (Ecole Centrale de Nantes)	Analyse mécanique des essais de fendage d'interface d'éprouvettes hétérogènes	M.S. Stage Project Reviewer and Examiner (2021)	Active

E. Non-graduate Student Research Mentoring

i. Undergraduates

Name (Student Institution)	Research Topic	Funding Source	Duration of Mentoring	Current Student Status	Student Cont. to Graduate Program
Justin Baker (Univ. of MN Duluth)	Use of Taconite Tailings in Asphalt Mixtures to Reduce Environmental Impacts of Pavement Infrastructure.	Undergrad. Research Opportunity Program	2011 (3 Mos.)	Graduated (2011)	Yes (M.S. at UMD)
Dylan Meyer (Univ. of MN Duluth)	Accuracy of Magnesium-Sulfate Test in Comparison with Freeze-Thaw Test in Determining Durability of Northern Aggregates.	Undergrad. Research Opportunity Program	2012 (3 Mos.)	Graduated (2012)	No
Waylon Munch (Univ. of MN Duluth)	Mix Design of Asphalt Pavements with Taconite Tailings	External Grant (City of Duluth)	2011 (3 Mos.)	Graduated (2012)	No
Chelsea Hanson (Univ. of MN Duluth)	Life Cycle Analysis of Asphalt Pavements.	Undergrad. Research Opportunity Program	2012 (3 Mos.)	Graduated (2012)	Yes (M.S. at UMD)
Robert Kostick (Univ. of MN Duluth)	Strength Testing of Welded Pre-Manufactured Modular Systems.	Undergrad. Research Opportunity Program	2013 (6 Mos.)	Graduated (2013)	Yes (M.S. at UMD)
Chelsea Hoplin (Univ. of MN Duluth)	Structural Analysis Problems Using Matlab.	Undergrad. Research Opportunity Program	2013 (6 Mos.)	Graduated (2013)	Yes (M.S. at UMD)
Neal Smith (Univ. of MN Duluth)	Use of Industrial Adhesive with Standard Fasteners in the Construction of Light Frame Wood Structures.	Undergrad. Research Opportunity Program	2013 (3 Mos.)	Graduated (2013)	No
Jared Munch (Univ. of MN Duluth)	Disk-shaped Compact Tension Tests	External Grant (MNDOT)	2013 (3 Mos.); 2014 (6 Mos.)	Graduated (2015)	Yes (M.S. at UMD)

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Undergraduate Student Mentoring (Continued)

Name	Research Topic	Funding Source	Duration of Mentoring	Current Student Status	Student Cont. to Graduate Program
Christopher DeCarlo (UNH) (Co-advised with Dr. J. Sias)	How Does Silo Storage Time Impact Asphalt Pavement Performance and Durability?	Summer Undergrad. Research Fellowship	2015 (3 Mos.)	Graduated (2016)	Yes (M.S. at UNH)
Katie Haslett (UNH) (Co-advised with Dr. J. Sias)	Evaluation of Intermediate & Low Temperature Fracture Properties of Asphalt Mixtures	Summer Undergrad Research Fellowship; External Grant (NHDOT)	2016 (3 Mos.); 2017 (3 Mos.)	Graduated (2017)	Yes (M.S. at UNH)
Kimberly Perkins (UNH) (Co-advised with Dr. M. Ghayoomi)	Evaluation of Pavement Load Bearing Capacity Fluctuation with Subgrade Moisture Conditions	Undergrad Research Award	2017 (5 Mos.)	Graduated (2018)	No
Eric Caron (UNH)	Early-age Cracking in Concrete Bridge Curbs	External Grant (NHDOT)	2017 (8 Mos.)	Graduated (2018)	Yes (M.S. at UNH)
Eric Rolser (UNH; Co-advised with Dr. M. Ghayoomi)	Instrumented Scaled Pavement Model Testing with Varying Subgrade Moisture Conditions	Internal Funding (UCIRC, Research Start-Up)	2017 (3 Mos.)	Graduated (2018)	No
Shane Majenski (Co-advised with Dr. W. Mo)	Consequential LCA of Highway Infrastructure with MOVES	Internal Funding (UCIRC, Research Start-up)	2017 (3 Mos.)	Graduated (2018)	No

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Undergraduate Student Mentoring (Continued)

Name	Research Topic	Funding Source	Duration of Mentoring	Current Student Status	Student Cont. to Graduate Program
Conor McManamy (Co-advised with Dr. W. Mo)	Agent Based Traffic Modelling for Pavement LCA	UNH Sustain. Institute	2018 (3 Mos.)	Graduated (2019)	Unknown (Student at Bowden College)
Jirias Charabati	3D Printed Fiber Reinforced Concrete	Summer Undergrad. Research Fellowship, External Grant (DoD)	2019 (5 Mos.)	Active	Unknown
Matthew Bean (Co-advised with Dr. J. Sias)	Evaluating the Effects of Freeze-Thaw Cycling on Cracking Behavior in Asphalt Mixtures	Summer Undergrad. Research Fellowship, External Grant (NHDOT, DoD)	2019 (3 Mos.)	Graduated (2020)	Yes (M.S. at UNH)
Alex Lefebvre (Co-advised with Dr. M. Ghayoomi)	Systems Dynamics-Based Decision System for Roadway Mechanistic Load Capacity Prediction Protocol	Internal Funding (UCIRC)	2019 (5 Mos.)	Graduated (2020)	Yes (M.S. at UNH)
Gabriel Paster	Performance of Cold in-Place Recycled Asphalt Material	Undergrad. Research Award	2019-20 (7 Mos.)	Graduated (2020)	No

ii. High School Students

N.A.

4. SERVICE

A. Professional

i. Committees

1. *Senior Member,* RILEM (International Union of Laboratories and Experts in Construction Materials, Systems and Structures)
    a. *Cluster Convener (Chairperson) (2020 – present), Bituminous Materials and Polymers.* Oversee activity of six technical committees with over 100 members. Organized two day long annual joint cluster meetings (September 2020 and October 2021) with more than 150 participants.
    b. *Chairman,* 2021 RILEM Strategic Planning Workshop for the INDUSTRY theme.
    c. *Rilem Expert,* Member of the Rilem Technical Advisory Council (TAC) (2018 – 2020)
    d. Deputy Chairman, Committee on Asphalt Recycling of Pavements (Committee TC RAP) (2015 – 2022)
    Key Contributions:
        i. Organized workshops for industry on Asphalt Pavement Recycling at EMPA in Zurich Switzerland (June 2016); University of Sao Paulo (June 2018); University of Granada, Spain (June 2019)
        ii. Co-developed inter-laboratory studies for three task groups (2016-17)
        iii. Co-organized Annual Committee Meeting: EMPA in Zurich Switzerland (June 2017); University of Sao Paulo Brazil (2018); University of Granada, Spain (June 2019)
        iv. Development of the RILEM State of the Art Report for TC 264-RAP (2022)
    e. Task Group Leader, TG-1, Committee on Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements (Committee 241, TC-MCD) (2011 – 2018)
    Key Contributions:
        i. Co-Editor and Co-Author: State of the Art Report (STAR) on Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements (2018)
        ii. Organizer, Moderator and Presenter for Workshop on Modeling for Understanding of Mechanisms of Cracking in Asphalt Materials (March 16th 2014)
        iii. Co-organizer for the Mechanism of Cracking and Debonding in Asphalt Composite Pavement Conference, Nantes France (June 2016)
        iv. Co-organized annual TC meetings (2011, 2012, 2013, 2014, 2015 and 2016)
    f. Active Member, TG-6, Committee on Testing and Characterization of Sustainable Innovative Bituminous Materials and Systems (Committee 237, TC-SIB) (2011 – 2017)
    Key Contributions:
        i. Co-Author: State of the Art review papers on recycled asphalt pavement characterization and cold recycled (2017)

ii. Participating laboratory in the round-robin testing of recycled asphalt pavement

2. *Chairman,* Technical Committee on Pavement Field Evaluation, International Society of Asphalt Pavements (2014-present)
   Key Contribution:
   i. Organized and moderated the TC PFE Session at the ISAP Day event on Sunday preceding the TRB Annual Meeting (2015, 2016, 2017, 2018, 2019, 2020)
   ii. Member of Scientific Committee for the ISAP 2018 Conference in Fortaleza Brazil.
   iii. Organized the 2021 ISAP TC PFE Day (Theme: Asphalt Pavement Resiliency) (May 20th 2021)
   iv. Co-chair of the Scientific Committee for the ISAP 2022 Symposium in Costa Rica.
   v. Co-organized and taught ISAP Short Course on Asphalt Pavement Cold Recycling (5 week, 2 hours/week web-based course) (January 26th – February 23red 2022)
3. *Affiliate Member*, Transportation Research Board (TRB) (2003-present)
   Key Contribution:
   a. Member and Committee Research Coordinator: Committee on Pavement Maintenance (formerly AHD20, now AKT30) (2011 – present)
      i. Coordinated development of research need statements for NCHRP studies (Ten RNS developed; six have been funded as NCHRP projects)
      ii. Presented summary of research needs at annual meetings (2012-2020)
   b. Member: Committee on Asphalt Mixture Evaluation and Performance (formerly AFK50, now AKM40) (2012 – 2022)
      i. Member: Subcommittee on Advanced Models to Understand the Behavior and Performance of Asphalt Mixtures (AFK50(1)) (2004 – 2017)
      ii. Chair: Subcommittee on Advanced Models to Understand the Behavior and Performance of Asphalt Mixtures (formerly AFK50(1), now AKM40(1)) (2017 – 2022)
      iii. Contributed to organization of webinars for AFK50(1) (Four webinars organized and presented in two)
      iv. Contributed to organization of Hands-on Workshop Series on topics related to modelling of asphalt mixtures (three workshops organized)
   c. Member and Committee Communications Coordinator: Committee on Sealant and Fillers for Joints and Cracks (formerly AHD25) (2012 – 2018)
      i. Coordinated organization of webinars for the committee (2 webinars organized)
      ii. Maintain committee website
   d. Member: Committee on Modeling of Geosystems (AFS50) (2011 – 2019)
4. *Member,* Expert Task Group on FHWA Long Term Pavement Performance Program (LTPP) (2018 - present)
   a. Vice Chair of the Work Group 4 on Pavement Maintenance for 2020 LTPP Workshop

5. *Project Panel Member,* Transportation Research Board Federal Highway Administration Research Support Program
    a. Project TFRS-01: Quality Assurance (QA) Aspects of Performance Related Specifications (PRS) (2019-2022)
    b. Project TFPE-01: Evaluation of Asphalt Binder Quality Tester (2020-2022)
6. *Member*, Association of Asphalt Paving Technologists (AAPT) (2006 – present)
    a. Emmons Best Paper Competition Selection Committee (2015 – 2017)
    b. Judge for Best Student Poster Competition (2013 – 2019)
    c. Communications Committee Member (2021 – present)
7. *Member,* Infrastructure and Climate Network (ICNet): NSF RCN-SEES (2015 – 2019)
    a. Participated in the Annual ICNet Workshop (2015, 2016, 2018, 2019)
8. Asphalt Mix Committee, North-East Asphalt User Producer Group (NEAUPG) (2015 – present)
9. *Member,* Minnesota Department of Transportation Bituminous Specification Committee (2012 – 2016)
10. *Member*, ASTM International (Voting Member on ASTM D04 and E08 Committees) (2010 – present)
    a. Technical Contact for ASTM D7313[8] specification (2017 – present)
11. *Member,* American Society of Engineering Education (2009 – present)
12. *Member,* American Concrete Institute (ACI), (2009 – present)
    a. Faculty coordinator for ACI student chapter (2012 – 2014): Chapter participated in five student competitions and received top-three prize at three competitions.
13. *General Secretary*, Institute of Transportation Engineers (ITE), University of Illinois at Urbana-Champaign (2007 – 2008)
14. *Member*, American Society of Civil Engineers (ASCE) (2002 – present)

ii. Peer Reviewer Activities

Journal Peer Review Summary

Journal Name	Papers Reviewed (last 5 years)
ASCE J. Materials in Civil Eng.	3
ASTM J. Testing & Evaluation	8
Construction & Building Materials	5
Int. J. of Pavement Engineering	7
J. Asphalt Paving Technology	12
Materials and Structures	8
Road Materials and Pavement Design	23
Transportation Research Record	34

Member of the Editorial Board for the Road Materials and Pavement Design journal. (2016 – present)

Member of the Editorial Board for the Journal of Asphalt Paving Technology (2017 – 2020)

[8] ASTM D7313: Standard Test Method for Determining Fracture Energy of Asphalt-Aggregate Mixtures Using the Disk-Shaped Compact Tension Geometry

Proposal Review Summary

Agency	Panels / Number of Proposals Reviewed
National Science Foundation (NSF)	2 Panels / 25 Proposals (2010, 2014)
Oklahoma Transportation Center (OkTC)	5 Proposals (2011)
National Cooperative Highway Research Program (NCHRP)	3 Panels / 16 Proposals (2012 – 2017)
Natural Sciences and Engineering Research Council of Canada (NSERC)	3 Proposals (2015, 2017, 2020)
Transportation Research Board Federal Highway Administration Research Support Program	2 Panels / 12 Proposals (2019 – 2020)

Conference Proceedings Reviewer (Scientific Committee Member) (selected)

1. International Symposium on Bituminous Materials (ISBM), Lyon, France (December 2020)
2. 8th International EATA Conference, Granada, Spain (June 2019)
3. 2018 International Society of Asphalt Pavements Conference (June 2018)
4. 7th International EATA Conference, Zurich, Switzerland (June 2017)
5. 10th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA), Athens, Greece (June 2017)
6. ISAP 2016 Symposium, Jackson Hole WY (July 2016)
7. 8th International RILEM SIB Symposium, Ancona, Italy (October 2015)
8. 6th Conference of the European Asphalt Technology Association, Stockholm, Sweden (June 2015)
9. 12th ISAP Conference on Asphalt Pavements, Raleigh, NC (June 2014)
10. 2nd ASCE T&DI Airfield and Highway Pavements Conference, Los Angeles, CA (June 2013)

iii. Mini-Symposia/Conference/Session Co-Organizer

1. Co-organizer for the First International Data Science for Pavements Symposium (DSPS 2022), Arlington, Virginia (March 2022): https://pavementdatascience.com/
2. RILEM International Symposium on Bituminous Materials (ISBM 2020), Lyon, France, Organizing Committee (December 2020)
3. Advances in Materials and Pavement Performance Prediction (AM3P), Online Conference, Member of Standing International Advisory Committee and Scientific Committee. Mini-symposia Organizer for conference with responsibility for 4 sessions (August 2020)
4. 3rd RILEM Industry Workshop on Asphalt Pavement Recycling, Granada, Spain; Co-organizer and Co-chair (June 2019)

5. 8th European Asphalt Technology Association Conference, Spain: Scientific Committee Member (June 2019)
6. Workshop on *Evaluations of Asphalt Mixture Mechanistic Properties from Binders and Mastic Properties* at the Annual Meeting of the Transportation Research Board, Organizer and Chair, Washington DC (January 2019)
7. 13th ISAP Conference on Asphalt Pavements, Fortaleza, Brazil; Scientific Committee Member (June 2018)
8. International Conference on Advances in Materials and Pavement Performance Prediction (AM3P), Doha Qatar; Mini-symposia co-organizer (April 2018)
9. 8th RILEM Conference on Mechanisms of Cracking and Debonding in Asphalt and Composite Pavements (MCD2016), Nantes, France (June 2016): Conference Co-organizer
10. 13th U.S. National Congress on Computational Mechanics, San Diego, CA (July 2015): Co-organizer for the Pavement Mechanics and Simulation Mini-Symposium
11. 12th U.S. National Congress on Computational Mechanics, Raleigh, NC (July 2013): Co-organizer for the Pavement Mechanics and Simulation Mini-Symposium
12. 9th International Conference on Multifunctional and Functionally Graded Materials (M&FGM2006), Ko Olina, HI (October 2006): Executive Secretary for the Conference

iv. Session Chairperson / Moderator

1. 9th European Asphalt Technology Association (EATA) Conference, Session on Additives and Modifications, Web-based Conference (June 9, 2021)
2. 99th Annual Meeting of the Transportation Research Board (TRB), Session 1648 (Surface Treatments and Patching Materials), Washington DC (January 14 2020)
3. 98th Annual Meeting of the Transportation Research Board (TRB), Session 1529 (Pothole Repairs and Patch Performance), Washington DC (January 16 2019)
4. 13th ISAP Conference on Asphalt Pavements, Fortaleza, Brazil; Podium Session 1 (June 19 2018)
5. 97th Annual Meeting of the Transportation Research Board (TRB), Session 717 (Modelling of Asphalt Pavements), Washington DC (January 9 2018)
6. 96th Annual Meeting of the Transportation Research Board (TRB), Session 450 (Pavement Maintenance), Washington DC (January 9 2017)
7. 2016 UNH Civil and Environmental Alumni Conference, Durham NH (April 2016)
8. ISAP Day Event at TRB Annual Meeting, Washington DC (January 2015, 2016, 2017)
9. 8th International RILEM SIB Symposium, Ancona, Italy (October 2015)
10. 12th International Conference on Asphalt Pavements (ISAP), Raleigh NC (June 2014)
11. ASCE T&DI Airfield and Highway Pavements Conference, Los Angeles CA (June 2013)

12. Pavement Maintenance Patching and Repair Practices, TRB Annual Meeting, Washington DC (January 2013)
13. Optimization and Simulations Mini-symposium, 10th International Symposium on Multiscale, Multifunctional, and Functionally Graded Materials (MM&FGM2008), Sendai, Japan.

B. Academic

i. University

At University of Minnesota Duluth

1. Member of University Graduate Council (2011 – 14) (7 semesters): Evaluation of new and current graduate programs; policies for graduation requirements; review of graduate education budget; assignment of student representatives to graduate council.

At University of New Hampshire

1. Senator, UNH Faculty Senate and Member of the Student Affairs Committee (2020 – 2021)

ii. College

At University of New Hampshire

1. CEPS URC/ISE Organizing Committee (2017-18, 2018-19, 2019-20)
2. CEPS Dean's Executive Assistant Search Committee (2019-20)
3. Transfer Student Orientation Department Advisor for Civil Engineering Major (June 2017)
4. CEPS Industry Scholarship Committee (2017)
5. CEPS Graduate Fellowship Committee (2016)

At University of Minnesota Duluth

1. College Subcommittee for Design of Chemistry and Material Science and Engineering Building (2013)
2. College Single Semester Leave Review Committee (2011)
3. College UROP (Undergraduate Research Opportunities Program) Proposal Review Committee (2011, 2012)

iii. Department

At University of New Hampshire

1. Faculty Search Committee (Geotechnical Engineering Tenure-Track Faculty Search) (2021)

2. Organizer/Faculty Liaison of the ASCE – CEE Seminar Series (2015 - 2021)
3. CEE Strategic Goals Committee (2017 – 2021)
4. Search Committee for CEE Laboratory Technician (2015, 2017)
5. Departmental Dissertation Year Fellowship (DYF) and Summer Teaching Assistant Fellowship (STAF) Committee (2016)
6. CEE Summer Graduate Fellowship Committee (2016)
7. Scribe for Faculty Meetings: Provide faculty meeting minutes (2015 – 2017)

At University of Minnesota Duluth

1. Director of Graduate Studies (DGS) (2011 – 2014)
2. Faculty Search Committee
    a. Committee Member: Tenure Track Assistant Professor (2010-11), Department Head (2011-12), Term Faculty (2012), Department Head (2012-13)
    b. Committee Chair: Tenure Track Assistant/Associate Professor (2012-13) (2 Positions)
3. Department ABET Review: Contributed to the review report, collected self-assessment data and met with reviewers during the visit (2010-12)
4. Faculty Advisor for the ACI Student Chapter: Chapter participated in five student competitions and received top-three prize at three competitions. (2011 – 2014).
5. Civil Engineering Senior Design Course Committee (2011 – 2014)

5. ADDITIONAL NOTEWORTHY PROFESSIONAL ACTIVITIES

i. Webinar and Workshops Teaching

1. Hands-On Workshop on Thermal Cracking Modelling of Asphalt Mixtures: Developed and taught a hands-on workshop on viscoelasticity, cohesive zone fracture model, finite element based thermal cracking prediction model, and experimental techniques to researchers, practitioners and graduate students. Workshop sponsored by the Transportation Research Board (TRB) AFK50 Committee on Structural Requirements of Asphalt Mixtures, hosted by University of Nevada Reno (April 6-7, 2017)
2. Development & Implementation of Low Temperature Cracking Performance Specifications in Minnesota, Invited Webinar Presentation for the Transportation Research Board (http://www.trb.org/Main/Blurbs/175622.aspx) (March 30, 2017)
3. Pothole Performance Study in Cold Climate, Invited presentation for the Transportation Research Board (TRB) Webinar offered by the TRB AHD20 Committee on Pavement Maintenance (April 2, 2015)

4. Workshop on Fracture Energy Based Asphalt Specifications: Developed and taught 1-day long workshop to asphalt producers in Minnesota and Wisconsin (Approx. 30 participants) on the fracture energy based asphalt specifications in Minneapolis, MN (June 2015)
5. Co-Developed a series of webinars on topic of Mechanical Models for Asphalt Behavior and Performance through the Transportation Research Board AFK50 Committee on Structural Requirements of Asphalt Mixtures. Presented and moderated three webinars (2012 – 14).
6. Thermal Cracking Prediction in Asphalt Pavements using Cohesive Zone Based Stand-Alone Finite Element Program, Transportation Research Board (TRB) Webinar on Advanced Models to Characterize and Design Asphalt Pavements: Implementation and Application Examples, Sponsored by AFK50 Committee of TRB (October 2011).
7. Short Course at SemMaterials L.P., Tulsa OK and Koch Materials Company, Wichita KS: Developed and taught two short courses on the advance viscoelastic behavior of asphalt material and computational modeling of asphalt overlay systems. (June 2004 and June 2006)
8. Reflective Crack Relief Workshops: Participated in development of one-day long workshops (November 2004, December 2004, July 2005, February 2008) to explore the mechanisms of reflective cracking, testing methods on pavements, and control treatments. Shared research results with university researchers, DOT engineers, and industry experts.

ii. Professional Development Activities

1. NSF I-CORP 3 Week Virtual Course through UNH Innovation (Jan – Feb 2022)
2. UNH Research and Engagement Academy (Jan – May 2017)
3. UNH ADVANCE: Pathways to Tenure Workshop Series (Jan – May 2016)
4. National Road Research Alliance (2016 – present): Member of the Pavement Preservation workgroup of NRRA that developed short and long term research studies for MnDOT's Road Research Facility
5. UNH CEPS Cohort Career Advising Program (Jan 2015 – present)
6. UNH Writing Academy (May – Aug 2015)
7. ASCE ExCEEd Teaching Workshop (July 2013): Participated in the "ExCEEd: Excellence in Civil Engineering Education Teaching Workshop" offered by American Society of Civil Engineers. The workshop was part of a $2,075 fellowship from ASCE.
8. Professor Training Course (June 19 – 28 2007): Attended the National Center for Asphalt Technology's (NCAT) 19th Annual Professor Training Course for prospective professors in field of transportation engineering
9. An Intensive Course on Advance Constitutive Modeling of Asphaltic Materials (January 5 – 8 2005): Participated in the workshop on the advance modeling techniques for pavement materials. Organized at the University of Maryland and sponsored by International Society of Asphalt Pavement and RILEM

iii. STEM Education and Mentoring

1. UNH KEEPERS Camp (2015, 2016): Taught a half day activity on civil engineering materials to elementary school students as part of the UNH KEEPERs camp (shared with Dr. E. Bell and Dr. J. Sias)
2. UNH TECHCamp (2015, 2016, 2017, 2018, 2019, 2020, 2021): Developed activities and taught middle and high school students on a day-long, 1 and 2 week-long STEM camps.
3. Minnesota State Fair: Developed and taught STEM activity at the Minnesota State Fair during University Day (2012, 2013)
4. Mesabi Range STEM Camp: Participated and presented at the STEM camp for middle school students at the Mesabi Range Community and Technical College (July 2011)
5. Faculty Mentor for School Teachers through Research Engagement for Teachers in Engineering (RETE) Program
    a. Co-mentored middle school teacher (Robert Moore) on effects of moisture and freeze-thaw on asphalt mixture cracking resistance (June – August 2015)
    b. Co-mentored middle school teacher (Kacie Ferraro) on non—linear regression based modelling to develop predictive equations for asphalt mixture mechanical properties (June – August 2016)
    c. Mentor for two teachers (Andrew Croteau and Brian Mason) working on statistical analysis to assess effects of asphalt mix parameters on cracking performance of roadways and to determine extent of plastic deformation in complex modulus testing (June – August 2017)
    d. Co-mentored middle school teacher (Kacie Ferraro) on Quality Assurance procedures for asphalt pavements in New England. A survey was developed in Qualtrics and various New England public transportation agencies were surveyed and results were analyzed. (June – August 2018)
    e. Mentor for two teachers (Andrew Croteau and Aparajita Manchanda) working on fatigue analysis of asphalt mixtures and flexible pavements to assess effects of aging on fatigue performance and to improve laboratory data analysis procedures. (June – August 2019)
    f. Mentor for two teachers (Courtney Beavan and Felicia Formisano) working on thermal analysis of composite pavements using field instrumentations data and analysis of UAV collected pavement condition data. (June – August 2021)

iv. Other Professional Activites

1. Cold In-place Recycling Mixture Design and Technical Support, City of Manchester NH (2017)
2. Asphalt Mixture Performance Evaluation and Specification Update for NHDOT (2018 – present)
3. Technical feedback on Pavement Anti-ice System, City of Berlin NH (2019)
4. Review and feedback on Federal Grant Application, City of Berlin NH (2020)
5. Interview on EURADIO Nantes on November 12th 2021 on SMARTPAVE framework for design, operation and management of roadways in the cities of tomorrow.