

Posters

1. Barrios Luis Urbina, Syed A. Ali, Matias Mendez Larrain, Musharraf Zaman, OU; and Roy Khalife, Standard Testing. “Assessing the Effectiveness of Empirical Models to Estimate Swelling Potential of Oklahoma Soils.”
2. Ghos Sagar, Syed Ashik Ali, Sam J. Bauer, Kenneth R. Hobson and Musharraf Zaman, OU. “Fracture Characterization of Asphalt Mixes Containing Recycled Plastics Using Different Cracking Tests.”
3. Mengting Chen, Jaime Schussler, Deb Mishra, OSU. “Assessment of Soil Erosion Potential under Climate Change Scenarios using GIS.”
4. Kays H M Imran, Arif Sadri, OU. “Interdependency Modeling of Traffic and Stormwater Networks to Capture Propagation and Cascading of Failures.”
5. Khan Maisha, Arif Sadri, OU. “Developing Topology-based Traffic Control Mechanism for Improved Level of Service.”
6. Liever Alexandra, Aikaterini Kyprioti, Shreya Vemuganti, OU. “Optimization of Composite Response for Transformative Reinforcement Applications.”
7. Mata Cheyenne, Jaime Schusleer, OSU. “DOT Spending on Temporary Erosion and Sediment Control.”
8. Momin Khondhaker Al, H M Imran Kays, Arif Sadri, OU. “Exploring the Effects of Directionality Interventions and Optimal Roadway Reconfiguration in Traffic Networks based on Topological Credentials.”
9. Rahman Mohammad Shadman, H M Imran Kays, Arif Sadri, OU. “Unified Evaluation of Transportation System for Resilience and Sustainability.”
10. Tabassum Nafisa, Mahsa Gharizadehvarnosefaderani, Deb Mishra, OSU. “A Study of Geogrid-Aggregate Interaction Using the Discrete Element Method.”
11. Vega Esteban Villalobos, OU. “Precast Ductile End-Diaphragm System for Accelerated Construction of Slab-on-Girder Prestressed Concrete Bridges in Seismic Regions.”
12. Wang Guolong, Kelvin Wang, Joshua Q. Li, OSU. “Evaluation of Bridge Approach Slab and Dynamic Load Allowance (IM) Using Sub-mm 3D Laser Imaging Technology.”
13. Yang (Helen) Xue, Joshua Q. Li. “Real-time Deep Learning Based Railroad Trespassing Detection and Tracking.”
14. Yang (Helen) Xue, Joshua Q. Li, OSU; and Linda Pierce, NCE Consulting. “Enhancing Pavement Condition Evaluation: Incorporating Temporal and Diurnal Variations of FWD Measurements.”

Symposium chairs:

Joshua Li, Associate Professor/Williams Professor, OSU
Royce Floyd, Associate Professor, OU

2023 Oklahoma Transportation Summer Symposium

Monday, July 24, 2023, 8:30 am - 4.30 pm

**OSU Hamm Institute for American Energy
300 NE 9th Street, Oklahoma City, OK 73104**



<https://sites.google.com/view/oktransportation/home>



AGENDA

Breakfast: 7:45 am - 8:30 am

Welcome & Opening: 8:30 am - 8:50 am

Opening Remarks

Paul Tikalsky, Dean CEAT, OSU, introduced by Kelvin Wang

Keynote Speeches: 8:50 am - 10:00 am

Moderator: Joni Seymour, Chief Innovation Officer, Oklahoma Transportation Cabinet

ODOT Transportation

Brian Taylor, Chief Engineer, ODOT

Building the Pavement of Tomorrow ... Today

Christopher Wagner, Technical Director, Pavement and Materials Technical Service Team, Federal Highway Administration (FHWA)

Morning Break: 10:00am - 10:30 am

Technical Session 1 – Asphalt Materials and Balanced Mix Design

10:30 am - 11:50 am Continental Concourse

Moderator: Wassem Fazal, Oklahoma Division, FHWA

Balanced Mix Design: National Perspective

Fan Yin, National Center of Asphalt Technology (NCAT)

Balanced Mix Design: Oklahoma Perspective

David Vivanco, ODOT

Long Term Performance and Benefits of Combined Balanced Mix Design and Chemical WMA Technology

Deb Mishra and Aisan Ranjbar Moshfeghi, OSU

Overview of Findings of the BMD Research at OU and Their Role in Enhancing State-Wide Implementation

Kenneth R. Hobson, Sagar Ghos, Syed A. Ali, and Musharraf Zaman, OU

Technical Session 2 – Concrete Materials and Structures

10:30 am - 11:50 am Continental Auditorium

Moderator: Norb Delatte, M.R. Lohmann Endowed Professor and Head, OSU

Flexural Resistance of Ultra-High Performance-Concrete Subjected to Freeze-Thaw Cycles

Omar Yadaq, OU; Dip Banik, Purdue University; Royce Floyd, OU

Insight into Polymer Concrete Pull Off Strength for Bridge Deck Overlays

Ali Akbarpour and Shreya Vemuganti, OU

Improving Structural Health by Advancing Interpretable Machine Learning for Nonlinear Dynamics

Jin-Song Pei, OU; Ludian Komini, Amberg Group, Switzerland; Francois Gay-Balmaz, CNRS France; David J. Wagg, Univ. of Sheffield, UK; Keith Worden, Univ. of Sheffield, UK; Royce W. Floyd, Rahul Bharadwaj, and Dean F. Hougén, OU

Application of Machine Learning for Automated Damage Detection in Steel Girders

Aditya Nayak, Mohamed Soliman, OSU; and Royce Floyd, OU

Lunch and Keynote: 11:50 am - 1:15 pm

Moderator: Musharraf Zaman, Professor, OU

It's YOUR Research

Gary Hook, Research & Implementation (R&I), ODOT

Data and Information - the Key Drivers of the Bipartisan Infrastructure Deal

Nii Okine, Chair and Professor, Civil Engineering, University of Maryland

Technical Session 3 - Transportation Safety

1:20 pm - 2:40 pm Continental Concourse

Moderator: Yongwei Shan, Civil Engineering, OSU

Keeping Oklahoma Railways Safe (KORS)

Mark Sexton, Oklahoma Operation Lifesaver, Oklahoma City Police Department (Retired)

HRGC Trespassing Detection Using Machine Data and Deep Learning

Xue (Helen) Yang and Joshua Li, OSU

Incorporating Digital Alerting V2X Technology to Reduce First Responder and Vulnerable Road Users Risk

Lisa Robinson, Rob Duckworth, HAAS Alert; Andrew Little, Tulsa Fire Department

Routing and Security in Vehicular Networks

Anirudh Paranjothi, OSU

Technical Session 4 - Sustainability and Environmental Issues

1:20 pm - 2:40 pm Continental Auditorium

Moderator: Shreya Vemuganti, Assistant Professor, OU

Quantifying the Environmental Benefits of Reduced Asphalt Production Temperature and Chemical Warm-Mix Technology in Oklahoma

Adeoluwa Gbolade, Richard Steger, Deb Mishra, OSU

Laboratory Study on Strength, Durability and Drainage of Recycled Concrete Aggregate for Use in Pavement Base Course

Paul F. Cancino, Syed A. Ali, Musharraf Zaman, Kenneth R. Hobson, and Javier Rojas-Pochyla, OU

Evaluating the Moisture and Cracking Resistance of Asphalt Mixes in Oklahoma

Sina Mousavi Rad and Mohamed Elkashef, OSU

Unified Evaluation of Transportation System for Resilience and Sustainability

Mohammad Shadman Rahman, H M Imran Kays, Arif Sadri, OU

Afternoon Break: 2:40 pm - 3:00 pm

Technical Session 5 – Best Practices and Technologies

3:00 pm - 4:15 pm Continental Concourse

Moderator: Mohamad Elkashef, Assistant Professor, OSU

Best Practices for Project Bundling: Lessons Learned through Semi-structured Interviews

Yongwei Shan, OSU

Application of Optical Fiber Sensors in Railroad Monitoring

Deb Mishra, Mahsa Gharizadehvarnosefaderani, Md. Fazle Rabbi, OSU

Developing Topology-based Traffic Control Mechanism for Improved Level of Service

Maisha Khan, Arif Sadri, OU

Interdependency Modeling of Traffic and Stormwater Networks to Capture Propagation and Cascading of Failures

H M Imran Kays, Arif Sadri, OU

Adjourn: 4:15 pm