

Guide to RailTEC Student, Faculty and Staff Presentations at TRB

Washington, D.C.
5-9 January 2025

RailTEC is proud to be represented throughout the Rail Section of the 2025 TRB Program. Following is a count of our presence in different aspects of the program.

25 Authors

18 U of I RailTEC

7 RailTEC Alumni

3 Sessions Chaired

3 RailTEC Alumni

16 Committee Members

3 U of I RailTEC

13 RailTEC Alumni

2 Committee Meetings Chaired

2 RailTEC Alumni

Schedule of Rail Presentations & Posters by RailTEC Faculty & Students

Artificial Intelligence and Machine Learning Strategies and Remote Sensing for Railway Infrastructure Condition Assessment, Part 2

Sunday 1:30 PM - 4:30 PM | Workshop 1062

Leveraging Emerging Railway Track Health Data for Buckle Risk Hot Spot Identification

John Edwards, University of Illinois, Urbana-Champaign

Arthur de Oliveira Lima, University of Illinois, Urbana-Champaign

Marcus Dersch, University of Illinois, Urbana-Champaign

Neeraj Thakur, University of Illinois, Urbana-Champaign

Workforce Development in the Freight Railroad Industry

Monday 10:15 AM - 12:00 PM | Lectern Session 2089

Freight Rail Workforce Discussion Panel

Amy Krouse, American Short Line and Regional Railroad Assn

Kayden Howard, OmniTRAX, Inc.

Christopher Barkan, University of Illinois, Urbana-Champaign

Kritika Jetley, BNSF Railway

Joe Arbona, Genesee & Wyoming, Inc.

Integrated Data Analysis: Accessing Sources of Track Deterioration

Monday 10:15 AM - 12:00 PM | Lectern Session 2090

Condition Evaluation of Mud Spots in Railroad Ballast Using Deep Learning

Kelin Ding, University of Illinois, Urbana-Champaign

Issam Qamhia, University of Illinois

John Hart, University of Illinois, Urbana-Champaign

Erol Tutumluer, University of Illinois, Urbana-Champaign

Working on Stable Ground: Geosynthetics in Highways, Railways, and Embankment Applications

Monday 3:45 PM - 5:30 PM | Lectern Session 2189

Geogrid Stabilization Effectiveness – Comprehensive Assessment through Multiscale Experiments with Bender Element Sensor Technology

Han Wang, University of Illinois, Urbana-Champaign

Youngdae Kim, University of Illinois, Urbana-Champaign

Mingu Kang, University of St. Thomas

Erol Tutumluer, University of Illinois, Urbana-Champaign

Heather Shoup, Illinois Department of Transportation

Incorporating Knowledge from Sensor Data and In-Situ Testing into the Design Framework of Geogrid-stabilized Pavement Aggregate Layers

Syed Husain, University of Illinois, Urbana-Champaign

Erol Tutumluer, University of Illinois, Urbana-Champaign

Issam Qamhia, University of Illinois

Peter Becker, Indiana Department of Transportation

Nayyar Siddiki, Indiana Department of Transportation

Advancements in Ballast Condition Assessment: Impact of Vehicles, Subgrade, and Cold Weather

Monday 3:45 PM - 5:30 PM | Lectern Session 2198

Investigating Effect of Ballast Degradation on Track Dynamic Behavior using Coupled Train-Track Discrete-Element-Method Model

Zhongyi Liu, University of Illinois, Urbana-Champaign

Kelin Ding, University of Illinois, Urbana-Champaign

Erol Tutumluer, University of Illinois, Urbana-Champaign

Youssef Hashash, University of Illinois, Urbana-Champaign

Application of Falling Weight Deflectometer in Railway Track to Assess Ballast and Subgrade Conditions

Youngdae Kim, University of Illinois, Urbana-Champaign

Rami Chkaiban, Applied Research Associates, Inc.

Erol Tutumluer, University of Illinois, Urbana-Champaign

Jeremy Beasley, U.S. Army Engineer Research and Development Center

Abby Cisko, U.S. Army Corps of Engineers (USACE)

Ryan Langlois, Applied Research Associates, Inc.

Michael Harrell, Applied Research Associates, Inc.

Effect of Sub-Freezing Temperatures on Ballast Strength: A Laboratory Study

Coleman Froehlike, University of Illinois, Urbana-Champaign

Marcus Dersch, University of Illinois, Urbana-Champaign

John Edwards, University of Illinois, Urbana-Champaign

Arthur de Oliveira Lima, University of Illinois, Urbana-Champaign

Erol Tutumluer, University of Illinois, Urbana-Champaign

Current Research in Railroad Infrastructure

Tuesday 8:00 AM - 9:45 AM | Poster Session 3047

Hybrid Prestressing System for Concrete Crossties Using Localized Shape Memory Alloys

Ernesto Pérez-Claros, University of Illinois, Urbana-Champaign

Bassem Andrawes, University of Illinois, Urbana-Champaign

Schedule of Rail Committee Meetings with RailTEC Presiding

Highway-Rail Grade Crossings Committee

Monday 8:00 AM - 9:45 AM

Samantha Chadwick, Federal Transit Administration (FTA), presiding

State Rail Transportation Programs, AR040(2), Joint Subcommittee of AR040, AR010, AR030

Tuesday 8:00 AM - 9:45 AM

Sean Pengelly, Lake State Railway, presiding

RailTEC Faculty, Staff, Students and Alumni extend our sincerest thanks to the people, partners and organizations supporting rail transportation engineering research and education at University of Illinois Urbana-Champaign.

We are deeply grateful and appreciate the opportunity to work with you!



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