Guide to RailTEC Student, Faculty and Staff Presentations at TRB

Washington, D.C.
8-12 January 2023

RailTEC is proud to be represented throughout the Rail Section of the 2023 TRB Program. Following is a count of our presence in different aspects of the program.

49 Authors
27 U of I RailTEC
22 RailTEC Alumni

7 Sessions Chaired
5 U of I RailTEC
2 RailTEC Alumni

20 Committee Members
6 U of I RailTEC
14 RailTEC Alumni

3 Committee Meetings Chaired
1 U of I RailTEC
2 RailTEC Alumni
Schedule of Rail Presentations & Posters
by RailTEC Faculty & Students

International Perspectives on Strategies to Reduce Track-Caused Derailments, Part 1 (Part 2, Session 1069)
Sunday 9:00 AM- 4:30 PM | Workshop 1035 | Convention Center, 147B
Theodore Sussmann, OST-R/Volpe Center
Riley Edwards, University of Illinois, Urbana-Champaign

Session 1: Emerging Trends and Challenges
The Data Behind the Emerging Trends
Chris Barkan, Riley Edwards, University of Illinois, Urbana-Champaign
Theodore Sussmann, OST-R/Volpe Center

International Perspectives on Strategies to Reduce Track-Caused Derailments, Part 2 (Part 1, Session 1035)
Sunday 1:30 PM- 4:30 PM | Workshop 1069 | Convention Center, 147B
Theodore Sussmann, OST-R/Volpe Center
Riley Edwards, University of Illinois, Urbana-Champaign

Session 3: Focus on Contributions to Track Caused Derailments from Track Components, Environment, and Operations
Session Introduction
Arthur Lima, University of Illinois, Urbana-Champaign

Mitigating Railway Fastening System-Caused Derailments: A Case Study on Fatigue Failed Spikes
Marcus Dersch, University of Illinois, Urbana-Champaign

Recent Advances in Rail Infrastructure Design and Maintenance
Monday 10:15- 12:00 PM | Poster Session 2111 | Convention Center, Hall A
Riley Edwards, University of Illinois, Urbana-Champaign

Coupling Train-Track Model with Discrete Element Method for a More Realistic Simulation of Ballasted Track Dynamic Behavior
Erol Tutumluer, Zhongyi Liu & Bin Feng, University of Illinois, Urbana-Champaign

Development of a Rubberized Asphalt Concrete mix for use as an Under Tie Pad alternative in railroad applications
Babak Asadi & Ramez Hajj, University of Illinois, Urbana-Champaign

Degraded Ballast Stiffness Characterization Using Bender Element Field Sensor and PANDA ® Penetrometer
Mingu Kang, Han Wang, Issam Qamhia & Erol Tutumluer, University of Illinois, Urbana-Champaign
Younes Haddani, Sol Solution
Adam Bankston, BNSF Railway

Climate Change Influence on Railway Construction, Maintenance, Performance, and Safety
Monday 1:30- 3:15 PM | Lectern Session 2140 | Convention Center, 144C
Edna Forde, ECS Publications LLP
Carlton Ho, University of Massachusetts, Amherst
Riley Edwards, University of Illinois, Urbana-Champaign
Theodore Sussmann, OST-R/Volpe Center

Recent Research in Freight Economics and Regulation
Monday 3:45- 5:30 PM | Poster Session 2216 | Convention Center, Hall A
Comparing Regression and Machine Learning Models for Prediction of Freight Railroad Shipping Rates
Diwen Shi, University of Illinois, Urbana-Champaign
C. Tyler Dick, University of Texas, Austin

Advances in Transit Rail Infrastructure
Tuesday 8:00- 9:45 AM | Lectern Session 3031 | Convention Center, 145B
Field Verification of Elastic Modulus Measurements
Timothy Stark & Abdalqader Idries, University of Illinois, Urbana-Champaign
Theodore Sussman Jr, OST-R/Volpe Center
Hugh Thompson II, Federal Railroad Administration (FRA)
Charles Oden, Earth Science Systems, LLC

Towards Automated Field Ballast Condition Evaluation: Algorithm Development using a Vision Transformer Framework
Jiayi Luo, Haohang Huang, Kelin Ding, Issam Qamhia, Erol Tutumluer & John Hart, University of Illinois, Urbana-Champaign
Hugh Thompson II, Federal Railroad Administration (FRA)
Theodore Sussmann, OST-R/Volpe Center

Directed Research into Urban Rail Transit Operations and Design
Wednesday 8:00- 9:45 AM | Lectern Session 4021 | Convention Center, 147A
Development of a Real-Time Wheel Load Quantification System for the Transit Environment
Daniel Mueller, Arthur de O. Lima, Riley Edwards, & Marcus S. Dersch, University of Illinois, Urbana-Champaign
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!

**Schedule of Rail Committee Meetings with RailTEC Presiding**

**State Rail Transportation Programs, AR040(2), Joint Subcommittee of AR040, AR010, AR030**
Tuesday 8:00 AM- 9:30 AM
Sean Pengelly, Lake State Railway, presiding

**Rail Capacity, AR040(1), Joint Subcommittee of AR040, AR010, AR030, AP065, AT010**
Tuesday 6:00 PM- 7:30 PM
Tyler Dick, University of Texas, Austin, presiding

**Railroad Infrastructure Design and Maint. Committee (AR050)**
Monday 8:00 AM- 9:45 AM
Riley Edwards, University of Illinois, presiding
Theodore Sussmann, OST-R/Volpe Center, presiding