



# **Guide to RailTEC Student, Faculty and Staff Presentations at TRB**

*Washington, D.C.  
12-16 January 2020*

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RailTEC is proud to be represented throughout the Rail Section of the 2020 TRB Program. Below is a count of our presence in different aspects of the program.

## **26 Authors**

15 U of I RailTEC

11 RailTEC Alumni

## **2 Session Chairs**

2 U of I RailTEC

## **18 Committee Members**

10 U of I RailTEC

8 RailTEC Alumni

## **3 Committee Meeting Chairs**

2 U of I RailTEC

1 RailTEC Alumni

## **2 TRB Emeritus Members**

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# Schedule of Rail Presentations & Posters by RailTEC Faculty & Students

## **Can This Train Go Any Faster? Achieving High(er)-Speed Rail Service Through Improvements to Existing Infrastructure, Part 1 (Part 2, Session 1084)**

Sunday 9:00 AM- 12:00 PM

Workshop 1043 | Convention Center, 143C

*J. Riley Edwards, University of Illinois, presiding*

## **Can This Train Go Any Faster?: Achieving High(er)-Speed Rail Service Through Improvements to Existing Infrastructure, Part 2 (Part 1, Session 1043)**

Sunday 1:30 PM- 4:30 PM

Workshop 1084 | Convention Center, 143C

*Conrad Ruppert, HNTB Corporation, presiding*

### **Optimizing Superelevation for Mixed Freight and Higher-Speed Passenger Trains**

*Tyler Dick, University of Illinois*

### **Optimization of Track Components for Shared Corridor Use**

*J. Riley Edwards, University of Illinois*

## **Deterioration Rate and Ride Quality of All Rail Crosstie Types**

Monday 8:00 AM- 9:45 AM

Lectern Session 1131 | Convention Center, 144B

### **Deterioration of Concrete Crossties Considering the Role of Moisture and Track Support Conditions**

*Josué César Bastos, University of Illinois*

## **Statistical Modeling of Highway-Rail Grade Crossing Data**

Monday 8:00 AM- 9:45 AM

Lectern Session 1121 | Convention Center, 143C

### **Identifying Highway Rail Grade Crossings with Accidents in the Future: Improving Selections using Prediction Models**

*Jacob Mathew & Rahim Benekohal, University of Illinois*

## **Railway Capacity and Performance - Hybrid Session**

Monday 10:15 AM- 12:00 PM

Lectern Session 1196 | Convention Center, 150A

*Tyler Dick, University of Illinois*

*Mohd Rapik Saat, Association of American Railroads (AAR)*

## **Next Generation Train Control in North America: Evolution or Revolution?**

Monday 3:45 PM- 5:30 PM

Lectern Session 1322 | Convention Center, 143C

### **Improving Railway Operational Efficiency with Moving Blocks, Train Fleeting, and Alternative Single-Track Configurations**

*Adrian Diaz de Rivera, Tyler Dick & Leonel Evans, University of Illinois*

## **Rail Safety IDEA Program**

Tuesday 8:00 AM- 9:45 AM

Poster Session 1428 | Convention Center, Hall A

### **Rail Safety IDEA 41: Vibration-based Longitudinal Rail Stress Estimation Exploiting Contactless Measurement and Machine Learning**

*John Popovics, University of Illinois*

## **Passenger Rail Human Factors and Operational Safety**

Tuesday 10:15 AM- 12:00 PM

Lectern Session 1471 | Convention Center, 144C

*Chen-Yu Lin, University of Illinois, presiding*

### **Effect of Automatic Train Protection Technologies on Railroad Accident Prevention**

*Chen-Yu Lin & Christopher Barkan, University of Illinois*

*Bryan Sooter, Engineering Systems, Inc.*

## **Current Research in Railroad Track Structure System Design**

Tuesday 10:15 AM- 12:00 PM

Poster Session 1499 | Convention Center, Hall A

*J. Riley Edwards, University of Illinois, presiding*

### **Effects of Mixed Traffic Patterns and Ballast Support Conditions on Track Performance Investigated through Discrete Element Modeling**

*Bin Feng, Zhongyi Liu & Erol Tutumluer, University of Illinois*

## **Advances in Freight Rail Transportation**

Tuesday 1:30 PM- 3:15 PM

Poster Session 1571 | Convention Center, Hall A

### **Machine Learning Analysis of Railroad Freight Train Derailment Severity**

*Brandon Wang, Jaemin Kim & Christopher Barkan, University of Illinois*

## **TRB Rail Committee Emeritus Members**

**Dr. Christopher Barkan** | AR000 Rail Group

**Dr. Ernest Barenberg** | AR050 Railroad Track Structure System Design

# Schedule of Rail Committee Meetings with RailTEC Presiding

## Rail Group Executive Board

Monday 6:00 PM- 7:30 PM

Marriott Marquis, Capitol Hill (M3) | By Invitation

*George Avery Grimes, Patriot Rail Company, presiding*

## Railroad Track Structure System Design Committee, AR050

Tuesday 1:30 PM- 3:15 PM

Marriott Marquis, Archives (M4)

*J. Riley Edwards, University of Illinois, presiding*

## Rail Capacity, AR040(1), Joint Subcommittee of AR040, AR030, AP070, AT010, AR010

Tuesday 7:30 PM- 9:30 PM

Marriott Marquis, Treasury (M4)

*Tyler Dick, University of Illinois, 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 Urbana-Champaign.

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



New York City Transit



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U.S. Department of Transportation



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