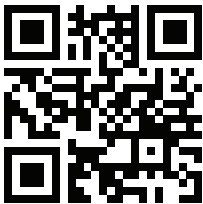


# // **GRADE CROSSING SAFETY & RAILROAD TRESPASS PREVENTION** //



**November 1–3, 2022**

North Carolina State University  
Duke Energy Hall at James B. Hunt Jr. Library  
1070 Partners Way, Raleigh, NC 27606



U.S. Department of Transportation  
Federal Railroad Administration



North Carolina  
Department of Transportation



Trespassing along railroad rights-of-way is the leading cause of rail-related deaths in the United States. Railroad crossing incidents are the second leading cause.

The Federal Railroad Administration (FRA) is committed to preventing and reducing grade crossing and trespassing incidents.

### **Workshop Goals**

One goal is to identify existing and emerging technology designed and used to mitigate, reduce, and ultimately eliminate highway-rail grade crossing and trespasser incidents. Other goals are to raise awareness of the dangers and effects of highway-rail grade crossing and trespasser incidents, to seek out low-cost solutions, and to discuss practicable ideas for technological improvements for vehicular and pedestrian safety at highway-rail grade crossings.

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## Nov. 1 – Trespasser Prevention

### 7:30 AM–5:00 PM: Registration

James B. Hunt Jr. Library, Duke Energy Hall Auditorium Foyer

### 8:30–9:15 AM: Welcome and Introductions

#### • Safety briefing

Michail Grizkewitsch, Transportation Specialist – FRA

#### • Agenda, goals, introductions

James Payne, Staff Director – FRA

Jahmal Pullen, Engineering Coordination and Safety Manager, Rail Division – NCDOT

#### • Welcoming remarks

Eric Boyette, Secretary – North Carolina Transportation Secretary

### 9:15–10:00 AM: Data Analysis of Area of Trespasser Incidents

Moderator: Monica Shaw, Transportation Specialist – FRA

#### FRA

#### • Overview of railroad grade crossing and trespassing data analysis

Michail Grizkewitsch – FRA

#### • Data analysis of NC area

Roger Smock, Rail Safety Consultant – NCDOT, WGI

#### NCDOT

#### • Comprehensive cost of rail incidents in North Carolina

Steve Bert, Policy Assessment Group – ITRE at NC State University

#### • Reduction in railroad right-of-way trespassing incidents

Chris Cunningham, Director, Highway Systems Research Coordinator – ITRE at NC State University

### 10:00–10:15 AM Break

### 10:15 AM–Noon Local Railroad Trespassing Mitigation Strategies

Moderator: Francesco Bedini Jacobini, Program Manager – FRA

#### FRA

#### • Overview of railroad trespassing issues and prevention strategies

Marco daSilva, Mechanical Engineer – Volpe Center

#### NCDOT

#### • Strategies for Deterring Trespassing on Rail Transit and Commuter Rail Rights-of-Way, Volume 2

Jahmal Pullen – NCDOT

#### Metra

#### • Commuter Railroad and Suicide Prevention Perspective

Hilary Konczal, Chief Safety and Environmental Officer – Metra

#### FRA

#### • Trespass & Suicide Prevention Toolkit

Dr. Shala Blue, Engineering Psychologist – FRA

### Noon-1:30 PM Lunch (On Your Own)

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1:30–3:00 PM

**Community and Public Outreach Engagement**

Moderator: Roger Smock, Rail Safety Consultant – NCDOT, WGI

**Greensboro, NC Police Department**

• **Overview of Railroad Trespassing Enforcement Program**

Greensboro Police Department

**University of North Carolina - Charlotte**

• **Investigating public's perceptions toward railroad safety on social media**

Dr. Yuting "Tina" Chen, Assistant Professor – UNC-Charlotte

**Operation Lifesaver, Inc.**

• **North Carolina Operation Lifesaver - Overview of railroad trespassing educational and prevention strategies**

Margaret Cannell, State Coordinator – NCOL

• **Florida Operation Lifesaver - Overview of railroad trespassing educational and prevention strategies**

Rob Stapleton, Rail Manager – CTS Engineering, Inc.

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3:00–3:15 PM

**Break**

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3:15–4:30 PM

**Innovation**

Moderator: Daniel J. Findley, PhD., Associate Director, Education and Training – ITRE at NC State University

**NCDOT**

• **Modeling the Effects of Rail Noise Propagation on Pedestrians in NC Railroad Environments**

Dr. Rongfang (Rachel) Liu, Endowed Professor, Director of Transportation Institute – North Carolina Agricultural and Technical State University

**Rutgers**

• **Exploring trespassing issues through the Rutgers MBS externship**

R. Michael White – Global Information Systems, LLC

**NOVOAGLOBAL**

• **Brightline detection technologies**

Carlos Löfstedt, President, CEO – NOVOAGLOBAL, Inc

**Safe House**

• **One App, Any Crisis**

Eliza Conley-Lepene, Founder, CEO, President – Safe House

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4:30–5:00pm

**Wrap-Up and Next Steps**

Monica Shaw & Michail Grizkewitsch – FRA

• **Feedback on Trespasser Prevention Discussions**

Francesco Bedini Jacobini – FRA

• **Day 2 Grade Crossing Introduction**

Debra Chappell, Transportation Specialist – FRA

## Nov. 2 – Grade Crossing

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### 7:30 AM–5:00 PM Registration

James B. Hunt Jr. Library, Duke Energy Hall Auditorium Foyer

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### 8:30–8:45 AM Welcome and Introductions

- Safety briefing
  - Agenda, goals, introductions
  - Welcoming remarks  
Debra Chappell – FRA
  - Grade crossing data – national and local  
James Payne – FRA
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### 8:45–9:45 AM Grade Crossings and Trespassing

Moderator: Brad Hibbs, Operations Engineer – FHWA

#### FRA/FHWA

- Updated railway-highway crossings program guidance under the Bipartisan Infrastructure Law

Esther Strawder, Rail Highway Crossings Program Manager – FHWA

#### NCDOT

- Back Creek Church Road (Charlotte, NC)

Brian Gackstetter, Senior Project Engineer, Rail Division – NCDOT

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### 9:45–10:00 AM Break

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### 10:00–11:00 AM Highway Design

Moderator: Randy Brown, Project Manager, Southeast High-Speed Rail – FRA

#### FRA/NCDOT

- NCDOT Traffic Separation Study on and off the sealed corridor – How did NCDOT do it?

Jahmal Pullen – NCDOT

- King's Mountain Case Study

Melissa B. Toth, National Director, ITS & Traffic Engineering – Atkins

#### Alfred Benesch & Company

- Design of Pre-signals at Grade Crossings

Rick Campbell, Senior Technical Manager – Alfred Benesch & Company

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### 11:00 AM–Noon Innovative Technologies Artificial Intelligence & Machine Learning

Moderator: Ronald Lucas, Manager – Planning and Project Development Branch, Rail Division – NCDOT

#### MTRI Inc. & Michigan Technological University

- Grade crossing inspections and surveys

Colin Brooks, Principal Investigator/ Senior Research Scientist – MTRI, Inc. & Michigan Technological University

#### BNSF Railway

- Use of drones at BNSF Railway

Richard Scott, Assistant Director Public Projects – BNSF Railway or Cheryl Townlian, Assistant Director Public Projects – BNSF Railway

## **TRAINFO**

- **TRAINFO - Blocked crossing prediction and communication**

Garreth Rempel, CEO & Co-Founder – TRAINFO

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### **Noon–1:30 PM Lunch (On Your Own)**

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**1:30–2:30 PM**

#### **Mitigating Highway Design Challenges at or Approaching Grade Crossings**

Moderator: Howard Gillespie, Supervisory Railroad Safety Specialist – FRA

#### **Brightline**

- **Grade crossing design in an urban environment**

Michael Lefevre, Vice President Operations – Brightline

#### **Elon University**

- **Elon, NC Trespass: Right-of-way-Fencing Partnership**

Jana Lynn Patterson, Ph.D., Associate VP for Student Life and Dean of Students – Elon University

#### **Norfolk Southern Railroad and CSX Transportation, Inc.**

- **Class 1 railroad activities**

W. R. (Will) Miller, Public Safety Director – Norfolk Southern Railway

Mike Liebelt, Project Manager II – CSX Transportation, Inc.

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**2:30–3:30 PM**

#### **Crossing Program Planning and Policy**

Moderator: Debra Chappell – FRA

#### **FRA**

- **Emergency Notification System signs**

Elizbeth Hudd, Grade Crossing Inspector – FRA

#### **NCDOT**

- **Freight Rail and Rail Crossing Safety Initiative**

Neil Perry, Rail Planning Manager, Rail Division – NCDOT

Mark Johnston, Rail Planning Engineer Consultant, Rail Division – NCDOT

- **ENS driver education curriculum model legislation**

Ike Avery, BeRailSafe Contractor, Rail Division – NCDOT

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**3:30–3:45 PM**

### **Break**

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**3:45–4:45 PM**

#### **Data Collection and Analyses**

Moderator Todd Meyer, Data Analysis & Inventory Manager, Rail Division – NCDOT

- **North Carolina rail incident operations and call-taking survey**

Roger Smock, Rail Safety Consultant – NCDOT, WGI

Daniel Findley, PhD. – ITRE at NC State University

- **Pedestrian incidents at highway-rail grade crossings**

Nancy Horne, Rail Signals Engineer, Rail Division – NCDOT

Richard Mullinax, Rail Safety and Signals Consulting Engineer – Mott MacDonald

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**4:45–5:00 PM**

#### **Wrap-Up and Next Steps**

- **Feedback on Grade Crossing Discussions**

Debra Chappell, Transportation Specialist – FRA

- **Day 3 Research and Development Introduction**

Francesco Bedini Jacobini, Program Manager – FRA

## Nov. 3 – Research and Development and Funding Opportunities

### 7:30 AM–Noon Registration

James B. Hunt Jr. Library, Duke Energy Hall Auditorium Foyer

### 8:30–10:00 AM Welcome and Introductions

Moderator: Francesco Bedini Jacobini– FRA

- **Safety Briefing**
- **Agenda, goals, introductions**

Francesco Bedini Jacobini– FRA

- **Welcoming remarks**

Marco daSilva, Mechanical Engineer – Volpe Center

### FRA Research and Development

- **Discussion of future research needs topics**

Dr. Shala Blue, Engineering Psychologist – FRA

### 10:00–10:15 AM Break

### 10:15 AM–Noon Funding Opportunities

Moderator: Michail Grizkewitsch – FRA

#### NCDOT

- **Research Process – Overview of NCDOT research and development and discussion of funding opportunities**

Curtis Bradley, Ph.D., Research Implementation Manager – NCDOT

#### FRA

- **FRA Civil Rights Team**

FRA Civil Rights Team

- **Consolidated Rail Infrastructure and Safety Improvements (CRISI) grants**

FRA Grants Management Team

### Noon

### Recap and Next Steps

FRA and NCDOT Staff

**// GRADE  
CROSSING  
SAFETY &  
RAILROAD  
TRESPASS  
PREVENTION //**

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