



2012 FRA Research & Development Research Review

May 22nd - 23rd, 2012
National Academy of Sciences
Keck Center

Day One: May 22nd, 2012

Registration opens at 8:00 am

Opening Session- Keck 100

9:00 am - 9:35 am: **FRA's R&D Strategic Direction & Delivery** – Dr. John Tunna, Director of the FRA's Office of R&D

9:35 am - 10:00 am: **AAR's Strategic Research Review**- Representative from TTCI

Track and Infrastructure Research Session- Keck 100

10:00 am - 10:30 am: **Track and Infrastructure Research Overview**- Gary Carr, Division Chief, FRA

10:30 am - 11:00 am: **Autonomous Track Geometry Measurement System (ATGMS): T-21 & Amtrak**- Cam Stuart, FRA

11:00 am - 11:30 am: BREAK

11:30 am - 12:00 pm: **Rail Neutral Temperature Measurement**- Dr. Francesco Lanza di Scalea, University of California, San Diego (UCSD)

Rail Tomography- Dr. Francesco Lanza di Scalea, Avanti Tech

12:00 pm - 12:30 pm: **Wheel/Rail Contact Simulation Rig**- Ali Tajaddini, FRA

12:30 pm - 1:30 pm: LUNCH

1:30 pm - 2:30 pm: **Concrete Ties, Fasteners and Critical Failure Modes**- Dr. Dave Jeong, Volpe

Vehicle Track Interaction Plans and Procedures for Modeling Workshop- Brian Marquis, Volpe

2:30 pm - 3:00 pm: **Next Generation Foundation for Special Trackwork**- Dave Davis, TTCI

3:00 pm - 3:30 pm: BREAK/POSTER SESSION

3:30 pm - 4:00 pm: **Rail Temperature Measurement**- Leith Al-Nazer, FRA

4:00 pm - 4:30 pm: **Rail Seat Abrasion**- Hugh Thompson, FRA

Human Factors Session- Keck 201

10:00 am - 10:30 am: **Human Factors Overview** – Dr. Tom Raslear, Division Chief, FRA

10:30 am - 11:00 am: BREAK

11:00 am - 11:50 am: ***Safety Culture Panel Discussion***

Introduction & Overview: Mike Coplen, FRA

Research Results- Dr. Joyce Ranney, Volpe

Labor Perspective- James Stem, United Transportation Union (UTU)

Management Perspective- Pete Hall, Amtrak

Discussion- Roby Brown, Union Pacific (UP)

11:50 am - 12: 45 pm: ***Grade Crossing and Trespasser Suicides Panel Discussion***

Introduction & Overview- Mike Coplen, FRA

Research Results- Mike Martino, Railroad Research Foundation

Future Directions- Dr. Scott Gabree, Volpe

12:45 pm - 1:45 pm: LUNCH

1:45 pm - 2:35 pm: ***Human Systems Integration and CTIL Panel Discussion-*** Mike Jones, FRA

2:35 pm - 3:30 pm: ***Fatigue Panel Discussion***

Data Collection- Dr. Tom Raslear, FRA

Discussion- Dr. Steve Popkin, Volpe

3:30 pm - 4:00 pm: BREAK/POSTER SESSION

Closing Session- Keck 100

4:30 pm – 4:40 pm: **Wrap up of Day One's Review-** Dr. John Tunna, Director of FRA's Office of R&D

Day Two: May 23rd, 2012

Registration opens at 8:00 am

Opening Session – Keck 100

9:00 am - 9:35 am: **FRA's R&D Strategic Direction & Delivery** – Dr. John Tunna, Director of the FRA's Office of R&D

9:35 am – 10:00 am: **AAR's Strategic Research Review**- Representative from TTCI

Rolling Stock Session – Keck 100

10:00 am - 10:30 am: **Rolling Stock Division Overview** - Kevin Kesler, Division Chief, FRA

10:30 am - 10:50 am: **Long Range Acoustic Device**- John Punwani, FRA & Jason Ross, Harris Miller Miller & Hanson, Inc.

10:50 am - 11:20 am: BREAK

11:20 am - 11:50 am: **Engineering Task Force**- Jeff Gordon, FRA & Mike Carolan, Volpe

11:50 am - 12:20 pm: **Next Generation Equipment Committee**- Jeff Gordon, FRA

12:20 pm - 12:40 pm: **Next Generation Equipment Committee Accessibility Working Group Effort**- Melissa Shurland, FRA

12:40 pm - 1:00 pm: **Crashworthiness of Locomotives**- John Punwani, FRA

1:00 pm - 2:00 pm: LUNCH

2:00 pm - 2:30 pm: **Tank Car Research & Development** - Francisco Gonzalez, FRA

2:30 pm - 2:50 pm: **Improved Locomotive Cab:**

Fuel Vapor Reclamation – John Punwani, FRA & Dr. Basant Parida, QinetiQ NA

Whole Body Vibration- John Punwani, FRA & Bud Zaouk, QinetiQ NA

2:50 pm - 3:20 pm: **Wayside Inspection Systems**- Monique Stewart, FRA

3:20 pm - 3:50 pm: BREAK/POSTER SESSION

3:50 pm - 4:10 pm: **Bio Diesel Emissions and Engine Wear**– Melissa Shurland, FRA

4:10 pm - 4:30 pm: **Wheel/Casting Research & Development**- Monique Stewart, FRA

4:30 pm - 4:50 pm: **Tank Car Non-Destructive Testing**- Francisco Gonzalez, FRA

Train Control and Communications (TC&C) Session- Keck 101

10:00 am - 10:30 am: **Train Control & Communications (TC&C) Research Division Overview** - Sam Alibrahim, Division Chief, FRA

10:30 am - 11:00 am: **Train Control & Communications**- Jared Withers, FRA

11:00 am - 11:30 am: BREAK

11:30 am - 12:00 pm: **Grade Crossing Research & Development** - Sam Alibrahim, FRA & Tarek Omar, FRA

High-Speed Rail Research & Development Session- Keck 101

12:00 pm - 12:20 pm: **High-Speed Rail Research & Development BAA Overview & Highlights** - Cam Stuart, FRA

12:20 pm - 12:40 pm: **Translational Friction Welding/Signal Jumper Welding/Rail Base Corrosion**- Dr. Jerry Gould, Edison Welding Institute (EWI)

12:40 pm – 1:00 pm: **Dynamic Track Model under Mixed Traffic**- Dr. Hai Huang, Pennsylvania State University, Altoona (PSU)

1:00 pm - 2:00 pm: LUNCH

2:00 pm - 2:20 pm: **Shared Corridor Technical Challenges & Research Needs**- Dr. Rapik Saat, University of Illinois at Urbana-Champaign (UIUC)

2:20 pm – 2:40 pm: **Pre-Stressing Steel and Concrete Variables- Concrete Tie Transfer Length**- Dr. Robert Peterman, Kansas State University (KSU)

2:40 pm – 3:00 pm: **Improved Concrete Tie and Fastening Systems**- Riley Edwards, University of Illinois at Urbana-Champaign (UIUC)

3:00 pm – 3:20 pm: **LIDAR Sensors for Non-Contact Track Speed and Geometry Measurement**- Dr. Mehdi Ahmadian, Virginia Tech University

3:20 pm - 3:50 pm: BREAK/POSTER SESSION

Closing Session- Keck 100

4:50 pm – 5:00 pm: **Closing Summary and Overview of R&D Review**- Dr. John Tunna, Director of the FRA's Office of R&D