

## Program

**7:00-8:00 a.m. - Registration**

**8:00-8:20 a.m. - Megan Brice/ Ben Bakkum – Intro and Revenue**

- From RR to Lab to FAST to Revenue Service

**Service** Brief description of TTCI and Revenue Service tests and facilities

**8:20-8:40 a.m. - Ben Bakkum - Railroad Experience and connection to TTCI research**

- Special trackwork tests

**8:40-9:00 a.m. – Special Topic: Innovative Inspection Technology I**

**9:00-9:20 a.m. - Adam Klopp – Intro to vehicle/train dynamics and discuss TTCI’s modeling capabilities (NUCARS, TOES, etc.)**

- Introduction to vehicle/train dynamics
- TTCI’s modeling capabilities

**9:20-9:40 a.m. – Special Topic: Innovative Inspection Technology II**

**9:40-10:00 a.m. - Yin Gao – Track Specific application of NUCARS and pioneered track modeling techniques used in academia.**

- Other track modeling techniques
  - Geotrack
  - Finite element modeling
  - Discrete element modeling

**10:00-10:20 a.m. – Special Topic: Innovative Inspection Technology III**

**10:20-10:40 a.m. - Silvia Galvan-Nunez – Predictive Analysis**

- Challenges and opportunities in the railway industry
- Applications

**10:40-11:00 a.m. – Przemyslaw Rakoczy – Crash Wall Tests**

- Physics behind the wall
- Freight and passenger car crash tests

**11:00-11:20 a.m. - Anna Rakoczy – Bridges**

- Intro to AAR Bridge 1 software for new bridge design
- Intro to DPG Fatigue software for existing bridge evaluation

**11:20-11:40 a.m. – Special Topic: Innovative Inspection Technology IV**

**11:40 a.m. -12:00 p.m. - Steve Wilk – Substructure**

**12:00p.m. – 1:00p.m. – LUNCH**

**1:00 – 2:30 p.m. – Technology Showcase “Backstage Pass”**

1. Ben Bakkum – FRA safety videos and demos
2. Adam Klopp – Dynamics demo using physical model “toys” and software example display
3. Yin Gao - NUCARS simulation: tie and fastener, ballast and subgrade
4. Przemyslaw Rakoczy – High speed camera videos and demo
5. Anna Rakoczy – Demo of software
6. Steve Wilk – Substructure demo and videos
7. Silvia Galvan-Nunez – Demo of software