

# Railroad Engineering Education Symposium (REES) 2012

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The objective of the 2012 Railroad Engineering Education Symposium (REES) was to continue the work started at 2008 and 2010 REES events and to develop interest among university faculty in railroad transportation engineering, with the goal of facilitating and supporting their interest in adding railroad engineering content to their engineering courses and curricula. In 2012, the event was partially supported by the NURail grant and NURail members led the preparation and presentation of the course materials.

of encouraging and supporting their interest in adding railway engineering content to their engineering courses and curricula. The inaugural REES was held in June 2008 at the University of Illinois at Urbana-Champaign in Urbana, Illinois. Since then, REES is held biannually.

REES 2012 was held June 11-13 in Overland Park, KS at the Johnson County Community College (JCCC). REES 2012 presented basic railway education materials, but also added more advanced material targeted toward professors who returned to REES to deepen their understanding of the railroad industry. The basic program was designated as REES 1, and the advanced program as REES 2. The topics covered in REES 1 and REES 2 are shown in the Table 1.



Table 1. REES 1 and REES 2 Topics

REES 1	REES 2
Intro Railroad Engineering	Vehicle Train Dynamics
Intro Railroad Infrastructure	Train Performance
Train Energy, Power, & Traffic Control	Advanced Train Control
Railroad Intermodal Transportation	Intro Railroad Capacity
Transit Commuter Intercity Rail Transportation	High Speed Rail Planning
Railroad Alignment Design & Geometry	Railroad Engineering Software
Railroad Engineering Design Case Studies	Shared Corridor Challenges

## Symposium Overview

The American Railway Engineering and Maintenance-of-Way Association (AREMA) is the railway industry's professional organization that, among its other goals, promotes railway engineering education. In response to this challenge, AREMA's Education and Training Committee (Committee 24), in collaboration with the academic rail faculty, developed the Railway Engineering Education Symposium (REES) that is operated under the auspice of the AREMA Educational Foundation. REES is intended to foster the participation of university faculty in railway engineering with the goal

In addition to academic modules, REES 2012 included sessions on the need for railway engineering education, workforce development issues, research programs and funding available for rail projects, and AREMA student chapters. William E. Van Trump provided a keynote address on 150 years of the Union Pacific railroad.



REES 2012 wrapped up with field trips. The main visit was organized to the BNSF Argentine Yard complex, where the group got to visit a yard tower, dispatching center, and gravity classification yard. The participants also had an opportunity to tour the BNSF training facilities located on the Johnson County Community College campus.



The event was a true collaboration between AREMA and academia, especially NURail. REES covered most of the faculty participation expenses, courtesy of 23 rail industry companies who supported the event. On the academic side, a total of ten faculty, staff, and students from NURail universities presented as part of the program. A complete list of NURail and other instructors can be found on the AREMA website at <https://www.arena.org/education/rees/index.aspx>

## Results

In total, 28 professors participated in the event, with 20 professors new to the program attending REES 1 and 8 professors returning for REES 2. Of the 28 individuals attending REES 2012, 8 represent universities that belong to the NURail Affiliate University Program. According to the latest statistics, 16 of the 28 schools represented at REES 2012 now have rail content included in course materials, and 9 schools offer specific rail courses.

## Testimonials

*"It was an excellent program. My goal was to add content to my Transportation Engineering course. REES provided an incredible amount of information in a short time."*

*"This was an excellent symposium for me. It was sharply focused on the topics and made clear not only what is available for educators, but also how much of a need there is for new engineers."*



## Acknowledgements:

- AREMA staff and leadership
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- Academic subcommittee members & speakers
- Industry sponsors & speakers
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