



Rail & Intermodal Transportation Summer Youth Program 2016

The Rail and Intermodal Transportation Summer Youth Program was hosted by the RTP in conjunction with University of Wisconsin-Superior on July 17-23, 2016. The week-long program attracted eight high school students across the nation and was filled with a slew of fun activities. While on campus the students built model on track structure and operated train simulator. The Megastructures Video: Extreme Railway: China, narrated by Dr. Pasi Lautala was one of the on campus highlights. The field visits were even more exciting, with visits to a number of rail industry facilities in Duluth and a high-rail trip with LS&I Railroad on one of the most scenic rail sections in Michigan's Upper Peninsula. For more on this, log on to our website.



RTP in Other Pre-University Events

In addition to the Rail and Intermodal program, RTP actively contributed to various pre-university level events during the summer:

- Dave Nelson led Michigan Tech's participation in the Construction Career Days (CCD) that introduced nearly 1,700 middle-, and high-school students from more than 50 schools to the construction related careers, including opportunities in the rail industry.
- Pasi Lautala presented a lecture on "Transportation and Railroads" as part of the Sustainable Teachers institute for middle-, and high school teachers.
- Pasi Lautala participated in Q&A session with students from National Transportation Safety Institute, and summer program for mid-school students.

The Railway Academic Conference 2016

The Railway Academic Conference (TRAC) was held on the UIUC campus on July 12 – 14, 2016. Eighty attendees participated in this three-day event, with REES activities and the NURail Annual Meeting each comprising half of the program. Building on similar goals and objectives, TRAC further informed educators, industry professionals, and students about current developments in railroad engineering education, workforce development and outreach programs. Pasi Lautala and David Nelson both had leadership roles in developing the academic content for the event.



UPCOMING EVENTS

[K-Day](#)

– Sep 9, 2016

K-day is an annual tradition at Tech where students can learn about ways to getting involved and connected. Like REAC will be demonstrating rail activities at Tech for fellow students.

[Rail Night XII](#)

– Sep 22, 2016

The Railroad night will take place in conjunction with Rail Day. This time at the Rozsa Center with Brian Lindamood from Alaska Railroad (past AREMA President) as the keynote speaker.

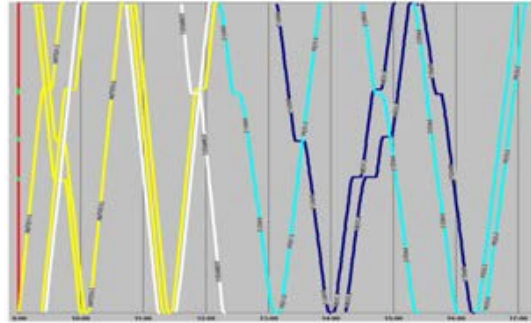
[Rail Day & Student Expo](#)

–Sep 23, 2016

The 3rd Annual Rail day and Student expo will take place at the Campus Mall this Fall; an excellent opportunity for students of all disciplines to interact with Rail Industry Representatives and participate in demonstrations of rail industry technologies.

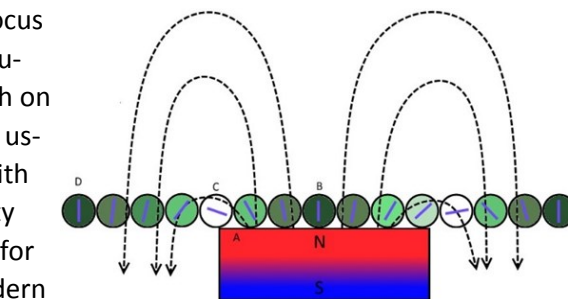
Research Highlight: Evaluating the Use of Operational Management Techniques for Capacity Improvements on Shared– Use Rail Corridors

The final report of the project funded by CFIRE and led by Dr. Pasi Lautala and Hamed Pouryousef was published early summer. This research investigated the use of operational management techniques to improve the capacity utilization and/or level of service (LOS) parameters along shared-use rail corridors. Two case studies were used for the research; the multiple-track Washington, DC –Baltimore, MD section of the Northeast Corridor (NEC) and the currently single track Detroit – Jackson segment of Michigan accelerated rail corridor. The research tools included three commercial railway simulation packages – Rail Traffic Controller (RTC), RailSys, and OpenTrack – as well as a new analytical rescheduling model, Hybrid Optimization of Train Schedules (HOTS), developed by Pouryousef.



Student Project Highlight: Rail Defect Detection

Student projects continue to be a focus of the RTP program. Last spring a student team completed their research on Cold Weather Rail Defect Detection using Dye Penetrants in association with CN. In order to maintain rail integrity and safety, railways constantly test for and repair internal rail defects. Modern railways use ultrasonic trucks to constantly test for and repair internal rail. Once the defect has been removed, CN uses dye penetrant on the cross sections at the ends of the rail insure that the



entire defect was removed. This process is limited during cold weather and requires extended time to perform the test. The main aim of this research was to identify alternative methods especially in adverse (cold and wet) climates. Students devised a test that uses magnetic viewing film to detect flaws and proved its performance in the cold chamber experiments. More details on this and other RTP student projects can be found at <http://www.rail.mtu.edu/student-projects>

IN THE NEWS

- The field trips of Rail and Intermodal Summer Youth Program in Duluth, MN were covered by the local TV station .
- Michigan Rail Conference was covered by various TV stations— WLUK TV6 (NBC) WBUP Channel 10 (ABC), and WJMN Channel 3 (CBS).
- Pasi Lautala was interviewed on Michigan Radio where he spoke about Michigan Rail Conference and the future of Rail Industry in general.

ON THE ROAD

- In May, Dave Nelson participated in the AREMA Committee 24—Education and Training meeting at Forth Worth, TX.
- In late May, Pasi Lautala presented a poster in the 11th World Congress in Railway Research, in Milan, Italy.
- In early June, Pasi Lautala presented two papers in the Global Level Crossing Safety & Trespass Prevention Symposium 2016, in Helsinki, Finland.
- In July, Lautala and David Nelson Aaron Dean and Sumanth Kalluri participated in the Rail Academic Conference (TRAC) at Urbana, Illinois.
- In mid-Aug. RTP led the organization of 4th Annual Michigan Rail Conference in Marquette, that broke past records with over 160 conference participants.
- In late Aug., Dave Nelson and 10 Michigan Tech students participated in the American Railway Engineering and Maintenance of Way Association's (AREMA) annual meeting at Orlando, Florida. Nelson and Aaron Dean presented two papers. Dean also won the undergraduate division of the Poster competition.

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