Summer in Finland

Students Travel to Finland to learn more about railroad engineering and experience Finnish culture.

In May and June, fifteen Michigan Tech students eager to learn more about railroad engineering and Finnish language and culture participated in the 5th annual Summer in Finland Program, increasing the total number of student participants to 77 over the life of the program. An intensive week of studies on campus was followed by three days of rail related tours in the Chicago region and over three weeks in Tampere, Finland.

Tours in Chicago were hosted by the Wisconsin Southern Railroad, CSX Intermodal, Belt Railway Company, Metra, Transystems and the Chicago Transportation Coordination Office (CTCO). Highlights of visits in Finland included Konecranes, a Finnish high-speed train maintenance facility, and of course, the traditional visits to a Finnish baseball game and summer cabin. In the end, there were fifteen exhausted, but satisfied, students ready to continue the exploration of Finland and Europe on their own or to return to the US and start internships with rail industry companies.

For more information go to <http://www.cee.mtu.edu/railroad/summer.htm>.
Director’s Message

I’m honored and excited to start the first Newsletter of the Rail Transportation Program (RTP) at Michigan Technological University. RTP is one of the first rail programs in the nation, and its mission is to advance both education and research across disciplines as they relate to rail transportation. The program was officially established in late October of 2007 within the Michigan Tech Transportation Institute (MTTI), but the foundation was developed beforehand by enthusiastic students, faculty, and staff which provided us with a running start and with plenty of material to report in this newsletter.

I am equally excited to acknowledge our supporters and industry partners, who have recognized the merits of our efforts and stepped in to assist in the program development. CSX Transportation became the first Corporate Friend of RTP and several other companies across the rail industry, such as Union Pacific Railroad, CN (Canadian National), Transystems Corporation, PB Transit and Balfour Beatty are currently negotiating partnerships with the program. We have also received two generous private donations, from Sandretto Estate / (Stackhouse) and from Eric and Pat Peterson to assist in the development of the RTP.

You can read the highlights of our first year activities from the remainder of the newsletter. Unfortunately we could not cover all the great achievements in the limited space, but for those interested, the complete review of the first year activities can be found from the 2007-2008 RTP Annual Report.

I want to highlight a couple of the successes of the past year, Almost 50% of the national scholarships awarded by the American Railway Engineering and Maintenance of Way Association (AREMA) were received by Michigan Tech students – a great reward for the hard work many of them have done to get involved in rail transportation. Our Railroad Engineering and Activities Club (REAC) hosted two major on-campus activities - the 3rd Annual Railroad Night and the Rail History Night, both of which had over 100 participants. On the research side, RTP secured its first project worth over $300,000 from the University of Alaska - Fairbanks. These successes in such a short time make me confident that we are on the right track with our program and I am anxiously waiting for the next time I get to write a message in the RTP newsletter. I hope you will stay in touch with the Program development as we continue to ride the rails and make Michigan Tech the most prominent university for education and research related to rail transportation in the 21st century.

Pasi

Michigan Tech Rail Transportation Program Supporters

We want to acknowledge the following companies and individuals who have made donations that were used for program development and student support.

- CSX - Corporate Friend
- Union Pacific
- Eric and Pat Peterson
- Sandretto Estate/(Stackhouse)
Research Update

Awarded project: “Synthesis of Railroad Engineering Best Practices in Deep Seasonal Frost and Permafrost Areas”
Dr. Pasi Lautala, P.E., Principal Investigator
Dr. Theresa Ahlborn, P.E., Dr. Devin Harris

Renewed interest in resource deposits in Alaska, Yukon, and British Columbia, as well as changing world markets, global trade dynamics and supply chains, has sparked interest in a rail link from Alaska to the rest of the North American rail system through northern Canada. However, deep seasonal frost and permafrost in the arctic environment create conditions that require special considerations for the design, construction, maintenance, and operation of rail infrastructure. This project will investigate the literature and experiences of the existing and planned rail systems at deep seasonal and permafrost areas around the world and use findings to develop recommendations for future investigations and project development of the proposed Alaska-Canada rail link. Award amount $301,156. Project Schedule May 2008-February 2010.

Upcoming Project: “Multi-Modal Optimization of Timber Shipments in the North Central United States”
Dr. Pasi Lautala, P.E., Principal Investigator

Rising fuel costs are expected to increase truck rates by 10 to 30 percent over the next two years. Simultaneously, estimates suggest that truck log delivery systems in the region may be operating at less than 50% loaded capacity. The optimization of truck and rail modes with an efficient intermodal linkage could result in the reduction of transportation costs, congestion, pavement and roadway degradation, and harmful air emissions. This project shall analyze optimization of the delivery of logs to the wood products industry in the region. It will investigate a multi-modal (rail/truck)/surface transportation solution set and evaluate the effects on traffic congestion and air emissions before and after optimization. Award amount $230,000 (Michigan Tech $80,000). Expected Schedule: August, 2008 – September, 2009.

Scholarship Winners

A total of $27,500 in railroad scholarships were received by Michigan Tech students this year. Six students received $10,000 of internal scholarships funded by CSX ($4,000) and Union Pacific ($6,000). Michigan Tech students also received 11 out of 23 scholarships awarded this year by the Educational Foundation of American Railway Engineering and Maintenance-of-Way Association (AREMA). These scholarships, totaling $17,500, represented almost 50 percent of all scholarships awarded by AREMA nationwide. Tech’s winners (in alphabetical order) are:

- Daryl Babbitt Jr. (Union Pacific & AREMA)
- Gordon Book (AREMA)
- Shane Ferrell (AREMA)
- Matthew Haapala (CSX & AREMA)
- Charles Hoppesch (AREMA)
- David Keleher (CSX & AREMA)
- Andrew Manty (CSX & AREMA)
- Brent Marsh (Union Pacific & AREMA)
- Michael Neuville (AREMA)
- Steffanie Pepin (CSX & AREMA)
- Patrick Schneider (AREMA)

Congratulations to all of our winners!!
Third Annual Railroad Night & Rail History Night

The Third Annual Railroad Night was held on February 19th in conjunction with Michigan Technological University’s 2008 Winter Job Fair. Michigan Tech has become a university of choice for recruitment by many rail industry companies, and the annual Railroad Night is an opportunity to meet and socialize with the representatives of those companies participating in the Winter Job Fair. The event also offers Michigan Tech an opportunity to present and explore rail-related educational and research initiatives with visiting representatives.

The event was hosted by the Rail Transportation Program (RTP) and the Railroad Engineering and Activities Club (REAC). Eleven rail industry companies sponsored the event.

The event had a record-breaking attendance with a total of over 100 students, faculty, staff, administration, and rail industry representatives. The event program included:

- Welcome by the University President, Dr. Glenn Mroz and by the Rail Transportation Program Director, Dr. Pasi Lautala
- Update by REAC President, Brent Marsh
- Presentation of an Honorary REAC Membership to Eric Peterson (retired CSX) during the 3rd Annual Railroad Night.

Rail History Night

On March 27, REAC and RTP hosted a Rail History Night, featuring Dr. Bruce Seely, dean of the College of Sciences and Arts, and Dr. Bill Sproule, professor in the Department of Civil and Environmental Engineering. Their presentations “The Rise and Fall of Railroads in North America” and “Railroads in the Copper Country” attracted over 100 students, faculty, and community members to the event.

The presentations were followed by extended period of enthusiastic discussion on the history and current status of rail transportation in the North America. One community member had even written a poem, based on her memories of the Copper Country trains.
Rail Engineering Activities Club Update

This year was a very successful year for the Railroad Engineering and Activities Club (REAC). Our 3rd annual Railroad Night was a huge success with eleven companies and over 100 guests in attendance and our main community event, Rail History Night also drew over 100 attendees. REAC also sponsored a trip to the annual AREMA conference in Chicago. The trip was fantastic and provided us an excellent occasion to interact with representatives from many diverse companies. We were also able to learn about current issues and opportunities in today’s rail industry.

In addition to these events, REAC membership has increased to 37 members from 8 different disciplines, and we hope to expand further in the coming year. As an organization, we’re very involved on campus participating in several activities including the MTU Transportation Expo, go-kart and bowling socials, in addition to field trips to the Lake Superior and Ishpeming Railroad, and the BNSF Duluth Taconite facility. Last year was a great year for REAC, and we expect the next one to be even better. Students interested in REAC should contact Shane Ferrel <smferrel@mtu.edu> for more information, or check out the website at <http://reac.students.mtu.edu>.

Shane Ferrel
REAC President

Railroad Engineering Education Symposium (REES2008)

Michigan Technological University’s Rail Transportation Program was part of the organizing committee for the First Railroad Engineering Education Symposium (REES) that was held June 9-11, 2008 on the University of Illinois campus in Champaign-Urbana. The symposium attracted over 30 faculty members from 25 Canadian and U.S. colleges and universities and 30 representatives from the rail industry. The program included discussion on the career opportunities in the rail industry, current and future rail research, and introductory lectures by senior faculty on a variety of rail topics where each lecturer provided attendees with presentation materials and a wealth of information to take back to their classrooms. Dr. Bill Sproule presented a lecture on Intercity Passenger Service and Urban Rail Transit, and made a presentation on Michigan Tech’s Summer in Finland program. A visit to the Norfolk Southern’s Decatur Yard was also part on the program. Plans are underway for the next Symposium to be held in 2010.
About Michigan Technological University

Michigan Technological University is a leading public research university, conducting research, developing new technologies, and preparing students to create the future for a prosperous and sustainable world. Michigan Tech offers more than 120 undergraduate and graduate degree programs in engineering, forestry and environmental sciences, computer sciences, technology, business and economics, natural and physical sciences, arts, humanities and social sciences.

About the Michigan Tech Transportation Institute

The Michigan Tech Transportation Institute (MTTI) is an umbrella organization bringing together the cross-disciplinary centers and principle investigators conducting transportation related research and education initiatives that address national and global needs. Sustainability is central to all MTTI efforts regarding transportation, and Michigan Tech researchers are leaders at applying sustainability concepts to transportation problems. Currently, researchers from multiple departments are collaborating through MTTI within six focused theme areas:

- Transportation Structures including bridges and pavements. Other related areas include geotechnical, construction, and nanotechnology related to sensors. This group includes the Center for Structural Durability (CSD).
- Transportation Materials including concrete, asphalt, steel, wood, and aggregates. Other related areas include construction, geotechnical, and nanotechnology related to sensors and materials. This group includes the University Transportation Center (UTC) for Materials in Sustainable Transportation Infrastructure (MiSTI), the Transportation Materials Research Center (TMRC), and the Center for Aggregate Research (CAR).
- Transportation Systems including waterways, traffic/safety, construction, rail, air, public transportation, freight, intelligent transportation systems, vehicle infrastructure integration, nanotechnology related to sensors, and radio frequency identification devices. This group includes the Rail Transportation Program (RTP).
- Transportation and the Environment includes environmental impacts, energy, carbon dioxide and other pollutants, fugitive dust, wildlife, flora and fauna, and carbon credits.
- Transportation and Society includes policy, planning, human factors, history, economics, and archeology.
- Transportation Technology Transfer includes all outreach, management systems, and workforce development programs. This group includes Michigan’s Local Technical Assistance Program (LTAP), the Technology Development Group (TDG), and the Tribal Technical Assistance Program (TTAP).

About the Michigan Tech Rail Transportation Program

The vision of Rail Transportation Program is to expand its service to the rail industry by offering an interdisciplinary program in railroad engineering and urban rail transit that will provide opportunities for our students and faculty to participate in the development and operation of rail transportation for the 21st Century.

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