Special Issue: ITRE Goes Global!

To our readers: this issue of ITRE Directions highlights our Institute’s international outreach and engagement. Over the past few years ITRE has made a conscious effort to identify global academic partners and has worked with them in areas of mutual interest and expertise. We also have been involved in engaging our own NC State students to participate in study abroad opportunities—last year in China, this year in Australia—where they can learn about how emerging and developed economies deal with transportation issues. With globalization on the rise, it is imperative for us to foster and strengthen our international research and education activities consistent with the University’s long term goals.

In this issue, we highlight the institute’s contribution to the University’s study abroad program in Australia this past summer, and discuss the internship opportunities that ITRE offers to graduate students from Portugal in the area of highway safety and the environment, and from South Africa in the field of Intelligent Transportation Systems. We also explore what’s new in the area of High Speed Rail from our resident expert from the Korea Rail Research Institute who is spending his sabbatical year here at ITRE.

I do hope you enjoy this issue and, as always, would welcome any feedback you may have.

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The Portuguese Connection

For the past several years, ITRE and NC State University have been collaborating with researchers from Portugal, mostly but not exclusively in the area of vehicle activity and emissions measurement and modelling.

It all started in 2002 with a visit from the ITRE Director to IST (Instituto Superior Tecnico) in Lisbon, Portugal, the preeminent engineering school in that country. It led to the co-advising of Margarida Coelho, a then PhD student at IST who, armed with a full government scholarship, divided her research activities between Lisbon with her advisor Dr. Tiago Farias and Raleigh with Dr. Rouphail. Dr. Coelho, now an Invited Assistant Professor at the University of Aveiro in Portugal, completed her PhD from IST in 2005. With her move, a nucleus of researchers from IST and Aveiro in Portugal and from NC State, Old Dominion (ODU) and Michigan in the U.S. established a working group called LATIS-G (for Luso American Transportation Impacts Study Group) to promote collaboration in the general area of sustainable transportation. This has spun the next generation of collaboration involving Dr. Coelho’s PhD student Guillermina (better known to us here at ITRE as Mina) Torrao, who also is on a full PhD government scholarship.

Mina’s research involves the analysis of the trade-offs between safety and environmental performance, using the Portuguese vehicle fleet as the basis for her study. Mina has just completed an extended stay here at ITRE working on the crash database and developing initial crash models. Upon her return to Portugal in July of this year, she presented a paper on her research work at the 12th World Conference on Transportation Research (WCTR) which was held in Lisbon. Mina plans to be back at ITRE again next Spring utilizing the University’s Global Training Initiative program, which has worked very well in attracting top student researchers and international scholars to the Institute.
New Student Intern from South Africa to Join ITRE

In September of 2010, ITRE will be hosting a new NC State University Global Training Initiative (GTI) Intern, Louis Marais from Cape Town, South Africa. Louis comes to us from the University of Stellenbosch where he is currently working towards his Masters Degree in Transportation Engineering. He also received his Bachelor’s Degree in Industrial Engineering from the University of Stellenbosch in 2008.

Currently, Louis works with Techno Pretoria as an Industrial Transport Engineer gaining practical experience in his field of study under supervision of a study leader, working on the development of Intelligent Transportation System (ITS) Policies with SANRAL and performing data analysis and simulations using VISSIM, VISUM, and Sketchup. Louis has also worked with manufactured accelerated pavement testing machines and has also assisted in the design, development, and manufacturing road testing machine (MLS10). Louis is bilingual - speaking both English and Afrikaans. While at ITRE, he will be involved in a new research project funded by the North Carolina Department of Transportation on developing statewide measures of transportation mobility and reliability based on real-time traffic data. These are continuously being collected using fixed sensors and vehicle probes on all Interstate and key primary highways in the state. He also plans to join the NC State contingent to the 90th annual meeting of the Transportation Research Board in Washington, DC in January 2011. On the lighter side, Louis has worked an assistant chef at 7 Tuns Pub and Restaurant and Lyndhurst Park Hotel in England.

Traffic Engineering Class Held in Australia

The second annual study abroad trip for the Department of Civil, Construction and Environmental Engineering (CCEE) at NC State was held during the second summer session of 2010 in Australia. The program included two courses: Reinforced Concrete Design (CE327) at the University of Adelaide in South Australia and Traffic Engineering (CE305) at the Queensland University of Technology (QUT) in Brisbane over the six week trip. Twenty two students were joined by Dr. Joe Hummer University of Technology (QUT) in Brisbane over the six week trip. Twenty two students were joined by Dr. Joe Hummer and Dr. Rudi Seracino, professors in the CCEE Department and Daniel Findley, a senior research associate at ITRE.

Daniel Findley assisted with instruction and planning of CE305, including field trips to local points of interest in transportation. The class visited the Center for Accident Research & Road Safety in Queensland, where they learned about the center’s safety initiatives and were able to test drive the new driving simulator. The class also visited the recently constructed Clem Jones Tunnel control center where they learned about design, safety, and operational features of the tunnel. Other transportation aspects of interest in the course included the busway and ferry systems in Brisbane.

Contact Daniel at djfindle@ncsu.edu for more information.

Visiting Rail Researcher from Korea

ITRE has been privileged to have Dr. Dae Seop Moon as a visitor since March. Dr. Moon is spending a year at ITRE as part of a year abroad to study various intermodal transportation movements in the U.S., while in the U.S., Dr. Moon is comparing this country’s process to conduct feasibility assessments for new rail transportation corridors to the Korean process.

Dr. Moon has been in charge of the transportation and logistics department at the Korea Railroad Research Institute (KRRI) for approximately five years. His work has involved supporting high speed rail to other countries. As part of that work, he conducted a feasibility study for two sections of a potential rail line between Hanoi and Ho Chi Minh City, in Vietnam. The KRRI is interested in potential opportunities to develop high speed rail services in the U.S., particularly in California.

Dr. Moon is also involved in the development of standards for all types of freight logistics, from pallets to containers, as part of a four-year project that started in 2008, running through 2012. Other work includes logistics agglomeration at inland depots. Korea is in the process of reducing the number of small railway depots and developing larger, more concentrated points for freight transfer. In addition, some cities want to move railway maintenance facilities from their downtowns to outlying areas, in order to redevelop valuable land.

The focus of Dr. Moon’s research is cities, rail, and other transportation modes, and he is interested in learning about integrated transportation planning activities in the U.S. He noted that the U.S. has yet to develop strong collaborative relationships between air and rail transportation companies, similar to those in Korea or in Europe, in which high speed rail lines feed travelers to air terminals to continue their travel to further destinations.

Dr. Moon maintains regular hours at ITRE on Tuesdays and Thursdays. He can be reached at dsmoon@ncsu.edu.