ITRE Students Win International Traffic Bowl Competition

Four graduate students at ITRE recently won an international quiz bowl competition involving 55 colleges and universities from across the U.S. and Canada. Abseen Anya, Zachary Bugg, Thomas Chase, and Tyler Fowler won the Traffic Bowl Grand Championship at the Institute of Transportation Engineers (ITE) Annual Meeting in Atlanta on August 14, 2012, after defeating Texas A&M University and the University of Toronto in the finals.

The Traffic Bowl is a seven-year-old, Jeopardy!-style student competition hosted by the ITE at its international and district meetings as an activity for student networking and involvement. The game features clues taken from several engineering manuals, general transportation trivia, and the history of ITE. Each of the winning students has been involved in research at ITRE as part of their graduate work at North Carolina State University.

To qualify for the championship in Atlanta, the NCSU team first defeated the University of North Carolina-Charlotte in November 2011 at the NCSITE Annual Meeting in Raleigh. Then in April 2012 they defeated the University of Louisiana-Lafayette, the University of Alabama, Clemson University, and Virginia Tech University to win their second consecutive Southern District championship in Lexington, Kentucky. Finally, they defeated Purdue University and the University of Massachusetts-Amherst in August 2012 to reach the title game against Texas A&M and Toronto. The final game required seven tiebreaker questions to determine the champion.

Students Work with ITRE to Conduct Rail Surveys

ITRE is nearing completion of a project for the North Carolina and Virginia Departments of Transportation that involved many NCSU students collecting origin and destination travel data. The data will be analyzed by AECOM to update ridership estimates on the Southeast High Speed Corridor (SEHSR). The SEHSR runs between Charlotte, NC and Washington, DC via Raleigh, and Richmond, VA.

Fifteen NCSU students and 10 UNC-Charlotte students participated in an extensive series of intercept surveys to collect travel data from motorists, train passengers, and air travelers. NCSU students surveyed motorists at six rest areas and passengers on board Amtrak trains running between Charlotte, Raleigh, Richmond, VA, and Washington, DC. UNC-Charlotte students surveyed motorists at the Concord rest area on I-85, and air travelers at the Charlotte Douglas International Airport. NCSU students will survey air travelers at Raleigh-Durham International Airport in October.

Surveys were conducted at each location over a two-day period involving one weekday and one weekend day. In addition to paid work opportunities, the surveys provided an opportunity for some students to travel to parts of the state that they had not visited previously. A preliminary report with updated ridership estimates is anticipated to be produced by the end of the year. For more information on this project, contact Tom Cook at tjc@ncsu.edu.

Visit us on the Web: www.itre.ncsu.edu Email us at: itre_info@ncsu.edu
NGAT Center Summer Update

On 19 July 2012, the NextGen Air Transportation (NGAT) Center at ITRE hosted the first North Carolina Unmanned Aircraft Systems (UAS) Forum at the NC National Guard Headquarters in Raleigh. In collaboration with the NCDOT Aviation Division, the NC Military Foundation, and the NC Department of Commerce, the NGAT Center provided an opportunity for organizations across the state to discuss their interest in the emerging UAS aviation market. More than 120 attendees balanced across industry, academia, and agencies, spent the day sharing their capabilities, ambitions, and opinions about where the industry is going and what they can do in North Carolina to support local communities in this area. Lunch was provided by the Friends of North Carolina advisory council who were excited to see this new aerospace growth industry coming together in the state.

After a background briefing from Richard Walls (NCDOT Aviation Director) and a market overview briefing from Rod Forsythe (NC Commerce), NGAT Director Kyle Snyder presented a case for why North Carolina is well prepared to lead the UAS proliferation into commercial and civil applications. The infrastructure for managing a UAS product lifecycle from requirements creation, through engineering design, system testing, maintenance, and training across the lifecycle already exists for the aviation industry in NC. Expanding those resources, nurturing the UAS-unique capabilities such as sense-and-avoid research, and addressing regulatory integration concerns are the challenges ahead facing the NGAT Center.

The NGAT Center is already helping UAS industry growth in the state as a result of the UAS Forum in July. Blue Force Technologies, Inc. out of RTP has recently received a small development contract to manufacture fuselage composite bodies for the UTC Aerospace Systems Micro UAS platform. These initial aircrafts will be used for testing, marketing, and technical specification qualifications as UTC (formerly Goodrich, Inc. in Charlotte) develops the product line.

We are continuing to refine the business plan and expand the database of existing UAS-related resources in NC as new information comes available. We are also exploring options for hosting a UAS-centric workshop for early 2013. For more information, please email NGAT Director Kyle Snyder at kyle_snyder@ncsu.edu.

ITRE Assists NCDOT With Security Camera Deployment Project

Through an American Recovery and Reinvestment Act project, the North Carolina Department of Transportation, Public Transportation Division has been able to fund in-vehicle security cameras for the eighty systems serving the Community Transportation program areas. The total number of installed vehicle camera systems will be approximately 1600. ITRE is grateful for the opportunity to participate in and facilitate activities on this project.

The project started with demonstration projects. The camera demonstration projects revealed hard drive and motherboard failures, accelerometer failures, cameras unable to adjust to high levels of sunlight and poor video quality (flickers, flashing, streaks). So, the bid was crafted to include a test of 5 installed units. The units were to be tested for 10 days successfully before the final award. The first qualified vendor did not perform adequately nor meet the specifications. The test proceeded to the second qualified vendor and it was awarded to Seon Design.

The final configuration is a 4-camera system and 2-camera system in mini-vans; each is capable of marking up to 6 events and downloading them automatically through a wireless bridge. Each system is currently set up to capture the following events: wheelchair deployment, G-force and operator panic button. With the wireless download of these events, the transit system is also able to isolate a time frame to be downloaded the next time the vehicle arrives in the vehicle parking area. Currently, installations have occurred through group 2 of 10. We have already experienced assistance with passenger complaints, identified many areas for retraining as well as opportunities to praise the operators for making good decisions. For more information, email Debbie Collins at debbie_collins@ncsu.edu.