Director’s Message

Once again, I have made what is becoming the annual pilgrimage to my native Australia to visit family and to teach CIEG351 Transportation Engineering as a study abroad course in Melbourne, Australia. The long plane trip gives me a chance to reflect on the UTC activities of the past year, the role UTC can play in transportation, and the challenges of continuing to provide a sustainable transportation system given the negative environmental impacts of long journeys across the Pacific Ocean!

Each year as our research progresses, we better integrate concepts of sustainability and resiliency into our undergraduate and graduate curricula. We also better understand the implications of our continued consumption of fossil fuels and the impacts of climate change. This causes me to pause to think about the challenges involved in changing our lifestyles and the impacts of where we choose to live and work have on resiliency and sustainability. I must confess that I feel more than a tad guilty when I think about the environmental impacts of that long plane trip.

This newsletter documents the accomplishments and activities of the University of Delaware University Transportation Center over the past six months. This summer and fall we again supported summer undergraduate researchers, awarded UTC graduate fellowships and the student of the year, and sponsored brown bag discussions and distinguished lecturers. Our graduate students organized the 6th Annual Interuniversity Symposium on Infrastructure Management and participated in the first Infrastructure Management Bootcamp. Faculty and students will present at the Transportation Research Board’s Annual Meeting in Washington DC in January 2011.

In the spring we will again host brown bag discussion and distinguished lectures, and there are opportunities to apply for our fifth year of funding: faculty for research project support, graduate students for the UD UTC graduate fellowships and undergraduate students for funding for summer research. We look forward to another productive year in 2011!

Sue McNeil
Professor, Department of Civil & Environmental Engineering
UTC fellows

The recipients of the UTC Fellowships for 2010-2011 are Peter Seymour and Todd O’Boyle.

Pete is a 2nd year Master’s student in Civil and Environmental Engineering. He is a graduate of the Department of Civil and Environmental Engineering from the University of Delaware. During his first year he worked with Professor Tripp Shenton on the UTC funded project exploring the resiliency of bridges on the BOSFOLK corridor. In Pete’s own words “This work has allowed me to gain an appreciation of the importance of resiliency and for how it should be applied in an engineering sense.” Pete is continuing this work so that it becomes his thesis.

Todd is a 2nd year PhD student in the School of Urban Affairs and Public Policy. He is a graduate of Guilford College (BS in German Studies and Psychology) and North Carolina Agricultural and Technical State University (MS in Social Welfare Policy). During his first year at UD he worked on investigating inter-jurisdictional coordination to promote economic development and address transportation policy. He has completed two papers for UTC “A Review of Regional Governance Policies: Select Cases from Metro Areas in the United States” and “Prospects for Regional Coordination in the WILMAPCO Counties”. Both papers are available on the UTC website.

Summer undergraduate researchers

Geoff Dilg and Elisa Kropat were supported by UD UTC to participate in Disaster Research Center’s Research Experience for Undergraduates Program. Geoffrey worked with Professor Rachel Davidson and Dr. Palm Apivatanagul to explore hurricane wind speeds as they relate to evacuation. Elisa worked with Professor Chris Meehan on the continuation of an earlier project on landslides. In addition to their research Geoffrey and Elisa attended lectures on the social science of disasters and qualitative research methods. They also attended the Natural Hazards Workshop in Colorado and presented their research at the end of the summer to faculty and students.

AISIM6

The 6th Annual Interuniversity Symposium on Infrastructure Management (AISIM) was held in June 2010 at the University of Delaware. This student run symposium provides an opportunity for students to present work in progress and network with other students. AISIM6 included a workshop on Technical Writing for Engineers by David Kmiec of University of Delaware, a keynote on “Risk-based Facility Asset Management” by Al Antelman and Jim Clayton, a networking event plus a conference barbeque.

The participants from the University of Delaware in the 2010 conference and their topics were:

• “Analysis of Ground-Penetrating Radar Data Using Markov Chain Monte Carlo Simulation” Leslie N.O. Mills
• “Methodology for Developing a National Infrastructure Index using Analytic Hierarchy Process” Michelle Oswald

Each year presentations are selected for inclusion at a special session during the Transportation Research Board Annual Meeting as “Best Presentations from AISIM.” Michelle Oswald was selected to participate in the 2011 session.

The 6th AISIM will be held at Northwestern University, dates to be announced. Watch the UTC website!
Good things come in threes: three distinguished lectures and three brown bag seminars

Opportunities to broaden your transportation knowledge abounded at UD during the fall semester. Three distinguished lecturers provided different perspectives:

- Les Hoel, L.A. Lacy Distinguished Professor of Engineering, University of Virginia, spoke on "Mobility and Transportation: Providing Access to the World"
- Chuck Larson (pictured, below left), Practice Leader for Stantec's Infrastructure Management and Pavement Engineering (IMPE) group, spoke on "Pavement Management and Infrastructure Asset Management: From the Trenches"
- Richard Little, Executive Director, The Keston Institute for Public Finance and Infrastructure Policy, University of Southern California, spoke on "Taxes or Tolls: What's the Future of Infrastructure Finance?"

In addition, three brown bag discussions presented perspectives on ongoing projects and past experiences:

- Rusty Lee and Dzung Ngo discussed "The Impact of Disruptions along the I-95 Corridor"
- Michael Paul from Duffield Associates provided an Engineers Perspective on Disasters, and
- Tripp Shenton and Pete Seymour (pictured, below right) discussed "Historic Resilience of Bridges on the Bosfolk Corridor "

Infrastructure management bootcamp

Infrastructure management, civil infrastructure systems, and asset management are emerging as important areas for graduate study as the need for civil engineers to serve as responsible stewards of our physical infrastructure is recognized. However, at most institutions there is often only one faculty member with a handful of students specializing in this area. As a result, doctoral and advanced Master's degree students, and advanced professionals working in infrastructure management generally do not have access to specialized courses, especially more advanced subjects. They also do not have a large cohort of students or colleagues to interact with. This past summer faculty from five different institutions developed and piloted a two-week long summer “Boot Camp.” The objective of “Boot Camp” is to provide an opportunity for students and practitioners to have an immersion experience in an advanced infrastructure management course, focused on physical assets and to build a network of like-minded students and professionals with similar interests in infrastructure management.

The pilot “Boot Camp” brought together 17 students from eight different universities (7 from the University of Delaware) for the two-week intensive advanced infrastructure management course at University of Delaware during the summer of 2010. Eight modules were taught by Susan Tighe from University of Waterloo, David Lee from University Iowa, Gerardo Flintsch from Virginia Tech, Zhanmin Zhang from University of Texas at Austin and Sue McNeil from University of Delaware. Each module included in-class and homework exercises. A group project provided opportunities for further student collaboration and application of the class material. The course was designed to be equivalent to a three-credit class. The course was scheduled to coincide with the 6th Annual Interuniversity Symposium on Infrastructure Management (AISIM6).
**Honors & awards**

UD UTC graduate student Michelle Oswald received the 2010 Outstanding Collegiate Student Award from the Society of Women Engineers (SWE).

See [www.udel.edu/udaily/2011/nov/society-women-engineers111110.html](http://www.udel.edu/udaily/2011/nov/society-women-engineers111110.html).

**Student of the year**

Charles Mitchell, better known as Charlie, is the UDUTC Student of the Year. Charlie is completing his Master's of Civil Engineering degree in the Department of Civil and Environmental Engineering. He holds a Bachelor of Engineering in Civil and Environmental Engineering from the University of Delaware. As an undergraduate researcher, Charlie participated in the UTC funded undergraduate research experience with the Disaster Research Center. His paper “Delaware Emergency Evacuation for the Salem/Hope Creek Nuclear Generators” served as a foundation for a UTC funded project on Emergency Preparedness. In 2009 he was awarded a UD-UTC Graduate Fellowship. He was a member of the organizing committee for the 2010 Annual Interuniversity Symposium on Infrastructure Management, a graduate organized and focused symposium on infrastructure management. Charlie took a leadership role in developing the website, managing submission from participants, and preparing materials for the symposium. He also volunteered to redesign the Delaware Center for Transportation (DCT) website, delivering a sharp and very professional web presence for DCT. His thesis, titled “Impact of the Expansion of the Panama Canal: An Engineering Analysis,” involves an engineering analysis of the freight impacts of widening the Panama Canal. Since the UD UTC was established, Charlie has been an active and engaged participant in the center.

**Communicating sustainability and livability concepts related to transportation to John and Jane Q. Public**

Anne Lucey received an honorable mention for her video, “Sustainable Roadside Landscapes” submitted to the TRB Technical Activities Division’s Planning and Environment Group’s fourth annual competition to find top methods for communicating transportation concepts to non-professional audiences. Anne’s video was developed as part of her MS thesis work titled “Whether an awareness of benefits positively influences public perception of sustainable roadside vegetation strategies.” Entries should focus on the 2011 Annual Meeting spotlight theme of transportation, livability, and economic development in a changing world. There is no restriction on the form of communication—graphics, illustrations, photos, software, demonstrations, interactive exercises or games—used to convey the message. Entries may be examples of successful communications efforts or techniques that can be used to communicate transportation concepts to non-transportation professional audiences. The entries will be evaluated by a panel of judges representing technical as well as communication disciplines. The winner will be announced at the 2011 TRB 90th Annual Meeting, Jan. 23–27, 2011, in Washington, D.C. The top ten entries will be showcased in a poster session at the TRB Annual Meeting and featured in an article in TRB’s TR News.

To see Anne’s video go to [www.youtube.com/watch?v=C1Qqx96pxs](http://www.youtube.com/watch?v=C1Qqx96pxs).
### University of Delaware Presentations at the Transportation Research Board Annual Meeting, Washington DC, January 2011.

<table>
<thead>
<tr>
<th>Session</th>
<th>Data and Time</th>
<th>Location</th>
<th>Presentation Title</th>
<th>Presenter</th>
</tr>
</thead>
<tbody>
<tr>
<td>112—Innovative Doctoral Research from Dwight David Eisenhower Transportation Fellowship Program.</td>
<td>Jan. 23 2011 9:00a.m.–12:00p.m.</td>
<td>Marriott</td>
<td>Development of a Decision Support System for Transportation Adaptation Practices in Response to Climate Change</td>
<td>Michelle Oswald</td>
</tr>
<tr>
<td>256—The Next Frontier in Transportation Asset Management</td>
<td>Jan. 24 2011 9:30a.m.–12:00p.m.</td>
<td>Hilton</td>
<td>Assessments of Highway Investment Objectives Based on Data Envelopment Analysis</td>
<td>Qiang Li and Sue McNeil</td>
</tr>
<tr>
<td>274—Context-Sensitive Solutions, Practical Solutions, and Complete Streets</td>
<td>Jan. 24 2011 10:15a.m.–12:00p.m.</td>
<td>Shoreham</td>
<td>Influencing Public Perception of Sustainable Roadside Vegetation Management Strategies</td>
<td>Anne Lucey</td>
</tr>
<tr>
<td>410—Best Papers from Sixth Annual Interuniversity Symposium on Infrastructure Management</td>
<td>Jan. 24 2011 7:30p.m.–9:30p.m.</td>
<td>Hilton</td>
<td>Methodology for Developing a National Infrastructure Index Using Analytic Hierarchy Process</td>
<td>Michelle Oswald</td>
</tr>
<tr>
<td>450—Safety Data and Risk Precursors: Innovative Approaches to Analyzing Safety Data</td>
<td>Jan. 25 2011 8:00a.m.–9:45a.m.</td>
<td>Shoreham</td>
<td>Risk Analysis of Oil Spill in Delaware River and Bay</td>
<td>Morteza Tabatabaie Shourijeh, Jamshid Laghaei, Eric Best, Leslie Mills and Arde Faghri</td>
</tr>
<tr>
<td>557—Vulnerability and Resilience of Critical Transportation Infrastructure</td>
<td>Jan. 25 2011 2:30p.m.–5:00p.m.</td>
<td>Shoreham</td>
<td>Improvement of Resilience of Critical Infrastructure System After a Disaster for Recovery and Mitigation</td>
<td>Silvana Croope and Sue McNeil</td>
</tr>
<tr>
<td>638—New Advancements in Geosynthetics for Highway Applications</td>
<td>Jan. 26 2011 8:00a.m.–9:45a.m.</td>
<td>Marriott</td>
<td>Accelerated Pavement Testing of Unpaved Roads with Geocell-Reinforced Sand Bases</td>
<td>Xiaoming Yang, Jie Han, &amp; Sanat Kumar Pokharel, University of Kansas, Chandra Bahadur Manandhar &amp; Robert L. Parsons, University of Kansas, Dov Leshchinsky, Izhar Halahmi, PRS Mediterranean Ltd., Israel</td>
</tr>
<tr>
<td>650—Data, Data, Data! Using National Data for State and Local Purposes</td>
<td>Jan. 26. 2011 8:00a.m.–9:45 p.m.</td>
<td>Hilton</td>
<td>Capturing Transportation Infrastructure Performance: Data Availability, Needs, and Challenges</td>
<td>Qiang Li, Sue McNeil, Taggart Foulke, Jonathan Calhoun, Michelle Oswald, Erik Kreh, Michael Gallis &amp; Associates, Susanne Trimbath, STP Advisory Services</td>
</tr>
<tr>
<td>761 – Status of the Long-Term Bridge Performance Program</td>
<td>Jan 27, 2011 8:00a.m.–12:00p.m.</td>
<td>Marriott</td>
<td>Panel Discussion</td>
<td>Dennis Mertz</td>
</tr>
</tbody>
</table>

Again University of Delaware faculty and students are participating in the Transportation Research Board annual meeting to be held in Washington DC in January 2010. Scheduled speakers are listed in the table above.
Upcoming events and opportunities

BROWN BAG
Thursday, April 28 | 12:15–1:15 p.m.
Charlie Mitchell, "Impact of the Expansion of the Panama Canal: An Engineering Analysis"

DISTINGUISHED LECTURE
Monday, Feb. 28 | 12:15 p.m.
"Planning for Mobility: Engineering for Tomorrow." Dr. Mimi Sheller, Drexel University.

RESEARCH SHOWCASE
May
Research Showcase, Dover, DE

DEADLINES
Tuesday, Feb. 15
Research Proposals
www.ce.udel.edu/UTC/Research.html

Tuesday, March 1
Summer undergraduate research applications
www.ce.udel.edu/UTC/Undergraduate.html

March 1
Graduate Fellowships
www.ce.udel.edu/UTC/Opportunities.html

Contact Us

Want to learn more about the UTC?
Visit www.ce.udel.edu/UTC/index.html.

Want to be notified by email when UDUTC is sponsoring transportation related events? Want to be notified by about UDUTC funding opportunities or graduate fellowships?

To be added to the email distribution list,
email Marikka Beach (marikka@udel.edu).