

*Assessing the Impacts
of Development in the*

Transportation Network

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The Foundation for The Gator Nation

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message from the director



Maria Eleftheriadou, Prof. Lily Eleftheriadou, Prof. George Mintsis

I am very pleased to share with you this newsletter, which highlights issues of growth management, sustainability and active living. Sustainability and active living was the theme of this year's External Advisory Board (EAB) meeting, which took place in March. Discussions focused on identifying the existing strengths at the University of Florida related to sustainability, active living and the environment. The EAB also discussed opportunities for future growth and expansion of the CMS research, education and technology transfer activities related to the broad area of sustainability. One of our newest EAB members, David Berrigan, Ph.D., from the Division of Cancer Control and Population Sciences at the National Cancer Institute of the National Institutes of Health (NIH), presented his perspective on transportation and active living as well as needs for future work in this area. I am very pleased that Berrigan also agreed to be our featured participant in this newsletter's Q&A (Page 14), where he provides his perspective on the relationship between transportation and health, as well as transportation and livability. Along the same theme, the Departments of Civil & Coastal Engineering (CCE) and Environmental Engineering Sciences (EES) at UF have agreed to form the School of Sustainable Infrastructure and the Environment. The objective of the school is to enhance and coordinate research efforts related to the broad umbrella of infrastructure and sustainability. Therefore, I expect the CMS activities in this area will expand as we increase our collaborative activities within the school and particularly in the area of transportation and air

quality.

I am very pleased to announce that Ananth Prasad, P.E., a CMS EAB member, and a graduate of the UF civil engineering program (construction), was named Secretary of FDOT in April 2011. Prasad will be responsible for managing the \$7 billion agency, which oversees a variety of infrastructure projects in Florida, including highway expansions, maintenance and port dredging. Congratulations Ananth!

Another one of our EAB members, Teresa Scott, Director of Public Works for the City of Gainesville, was recently named one of the 10 public works leaders of the year by the American Public Works Association (APWA). The group of winners, which includes Scott's counterpart in Orange County, was selected by a "committee of peers for their career-long professionalism, expertise, service and personal dedication to improving the quality of life in the communities they serve," according to a news release. Congratulations, Teresa! In March 2011, shortly after the EAB meeting, we were very pleased to welcome to our center Congressman John Mica (R-Fla.), the chair of the Transportation and Infrastructure Committee in the U.S. House of Representatives. Rep. Mica met with representatives of the CMS, the College of Engineering and the Department of Civil & Coastal Engineering to discuss center activities (Page 4).

In May, I had the opportunity to visit my alma mater in Thessaloniki, Greece, to deliver a seminar to the graduate students in transportation engineering. I very much enjoyed catching up with the faculty and students there and hearing about the current transportation program. It has significantly expanded since my time as an undergraduate student at the university! My visit also resulted in opportunities for collaborative activities: I will assist two of the graduate students with their thesis projects, which are related to highway capacity analyses and traffic simulation and are led by Professor George Mintsis (see picture).

I hope you will find this newsletter informative and useful, and I look forward to hearing your comments and suggestions regarding our activities.

Lily Eleftheriadou, Ph.D.
Professor of Civil Engineering & CMS Director

CMS at TRB

Each January, as it is customary, transportation professionals and practitioners from all over the world convene in Washington, D.C., for the Transportation Research Board's (TRB) annual meeting. It is easy to spot a "TRBer." They busily walk in and out of the conference hotels with their name badges hanging around their necks, intense looks on their faces — some wired from an interesting session, others tired from their long flights to D.C. Here, the largest exchange of information related to the transportation profession occurs, the biggest names are present, and students, the future of the transportation industry, come to learn and disseminate the latest in transportation research and practice. Once again, the CMS made their way up north to attend TRB, and to host the yearly UF reception at the Marriott Wardman Park hotel.

CMS faculty, affiliates and students participated in various sessions and committee meetings, gave technical paper

presentations, won awards, attended the CUTC banquet and awards ceremony at the Omni Shoreham Hotel, and hosted the UF reception. This year, the CMS' Student of the Year Award was given to Grady Carrick, a doctoral student. Carrick is a commander with the Florida Highway Patrol (FHP). He was featured in the Fall 2009 issue of the CMS' newsletter (see Pages 12-13).

The UF reception at TRB was very well-attended. Students, alumni and friends of transportation at UF joined the Gators at the Mezzanine of the Marriott Wardman Park hotel on Jan. 25. During the reception, students showcased their research by displaying posters of their most recent work.



CMS faculty, students and staff gather for a picture at the Mezzanine of the Marriott Wardman Park hotel in Washington, D.C.

Upcoming UF/TRC Workshop on CORSIM

Register NOW!

August 11, 2011
8:30 a.m. to 4:30 p.m.
Royal Plaza Hotel
(Walt Disney World Resort, Lake Buena Vista, Florida)

The Transportation Research Center (TRC), the Center for Multimodal Solutions for Congestion Mitigation (CMS), and McTrans at the University of Florida have developed a workshop for CORSIM users. Participants will learn about the modeling structure and approach used by CORSIM, the recently added features to CORSIM, modeling methods that can be used to expand CORSIM's analysis capabilities, advanced output processing, and comparing CORSIM results to HCM results. The workshop will also address the long-range plan for CORSIM.

Six professional development hours (PDHs) will be offered to P.E. license holders for attending the workshop:

Workshop presenters include:

- Ken Courage, University of Florida
- Lily Elefteriadou, University of Florida
- David Hale, University of Florida
- Bill Sampson, University of Florida
- Scott Washburn, University of Florida
- TBA, Florida Department of Transportation

Fees & registration:

- Early-birds \$245 (Register by July 15, 2011)
- Regular registration \$295
- Workshop sponsors \$175

Sponsorship opportunities are available. For more information, including hotel registration, visit Conference & Workshops at http://trc.ce.ufl.edu/news_and_events/corsim_workshop_2011.php or contact Ines Aviles-Spadoni at **352-392-9537, Ext. 1409** or javiles@ce.ufl.edu.

Rep. John Mica (R-Fla.)

Chairman of the House Transportation and Infrastructure Committee

Visits the CMS

Rep. John Mica (R-Fla.) met with CMS students, staff and faculty on March 7 at the University of Florida's College of Engineering. The purpose of the meeting was to connect with the Transportation Research Center (TRC) and to learn about the CMS' activities as they relate to research, education and technology transfer. CMS Director Lily Elefteriadou was very pleased the congressman met with students and faculty researchers.

"It was good to hear the congressman's perspective on research and education, and it was an excellent opportunity for our students and faculty to give an overview of their work to him in this forum," Elefteriadou said. "I was delighted that Congressman Mica took time out of his busy schedule to visit with our center."

Congressman Mica is the Chairman of the House Transportation and Infrastructure Committee in Washington, D.C. In Florida, he represents the 7th Congressional District.



Congressman John Mica (front row, center, at right) with CMS faculty and students in the lobby of the UF College of Engineering.

CMS Showcases STEWARD at U.S. DOT's University Research Technology Transfer Day



Vipul Modi (right) discusses STEWARD with a U.S. DOT official.

The traffic data warehouse, STEWARD, partially funded by CMS, was one of 25 projects chosen among 60 University Transportation Centers in the United States to take part in the U.S. Department of Transportation's (U.S. DOT) University Research Technology Transfer Day on March 6 at their headquarters in Washington, D.C. Vipul Modi, a senior transportation engineer working with the CMS, and Ines Aviles-Spadoni, the CMS' coordinator, attended the event and networked with individuals from the government and academic sectors. Modi, one of STEWARD's creators, was pleased by the attention the database received during the product showcase.

"The rationale behind STEWARD's implementation, and its ability to contribute to the future of transportation research were very well-accepted by people visiting our booth," Modi said. "The people I spoke to encouraged me to continue with efforts

to make STEWARD a national product."

Modi said the event was a unique platform for universities to showcase research products to an audience that was not limited to researchers and academics, but to the public sector, including federal officials.

STEWARD is a database that collects raw traffic data coming in from ITS detectors on Florida's roadways through traffic management centers. STEWARD processes the raw data and makes them available in various report formats to practitioners.

The CMS' display booth was equipped with a poster of STEWARD, which gave an overview of the database warehouse, including a computer and flat screen providing a real-time view of STEWARD's website.

The STEWARD database can be accessed at <http://cce-trc-cdwserv.ce.ufl.edu/steward/index.html>.

CMS Welcomes Four External Advisory Board Members



David Berrigan

Applied Research Program
Division of Cancer Control
& Population Sciences
National Cancer Institute
National Institutes of Health

David Berrigan, Ph.D., MPH, has been a biologist in the Office of the Associate Director of the Applied Research Program since 2003. He previously served as a Cancer Prevention Fellow with funding from the Division of Cancer Prevention from 1999-2003. Before coming to NCI, he was a postdoctoral fellow and lecturer at the University of Washington and at La Trobe University in Melbourne, Australia, with funding from the National Science Foundation and the USDA. He currently serves as a member of the TRB Committee on Traveler Behavior.



Thomas F. Rossi

Principal
Cambridge Systematics, Inc.

Thomas Rossi is a Principal of Cambridge Systematics with 25 years of experience in transportation planning and travel demand forecasting. He has developed and applied trip-based and activity-based models throughout the United States. For the past 15 years, Rossi has been a consultant to U.S. DOT for model improvement research and development/teaching of training courses. He is the Chairman of TRB Committee on Transportation Demand Forecasting. Rossi holds bachelor's degrees in civil engineering and mathematics and a master's degree in transportation from the Massachusetts Institute of Technology.

Edward L. Johnson



Interim Chief Executive Officer
Central Florida Regional
Transportation Authority, LYNX

As Chief Administrative Officer, Edward L. Johnson oversees LYNX' planning and development, information technology, human resources and federal compliance. He has been with LYNX for 12 years, previously serving

as interim chief executive officer, chief of staff and the manager of operations support/development.

Prior to joining LYNX, Johnson worked in his native Alabama with the Birmingham-Jefferson County Transit Authority where he served as the grants and planning manager. He earned his bachelor's and master's degrees from Jacksonville State University in Alabama.

Johnson serves on various local boards including the American Red Cross Mid-Florida Region, METROPLAN ORLANDO Economic Development Commission – Investor Relations Committee, Central Florida Urban League and the Hankins-Johnson Education Foundation. A recipient of the Orlando Business Journal's 40 Under 40 Award, he is a graduate of the Eno Transportation Executive Leadership Program, Leadership Orlando and served in the U.S. Army Reserves as an infantry platoon leader.

Grant Zammit

Team Leader
Operations Technical Service Team
FHWA Resource Center

Grant Zammit currently works as a traffic management and systems operations specialist at the FHWA Resource Center in Atlanta, Ga. Zammit is the Operations Technical Service Team lead in the areas of access management, performance measures and data quality, travel demand management, and highway capacity analysis. His current initiatives focus on program development and advancement, technology transfer and outreach, training delivery, and project-level technical assistance. Before joining the Resource Center in 2000, Zammit served in the FHWA Divisions in California, Florida, Kansas, and Kentucky. He is a graduate of Oregon State University and holds a master's degree in transportation engineering from the Georgia Institute of Technology. He serves on several technical committees and task forces throughout the United States, including state chapters of ITS America, the Institute of Transportation Engineers, and the American Association of State Highway and Transportation Officials.

We'd like to thank Linda Watson, formerly the CEO of LYNX, Orlando and Tamara Christion, of the FHWA, for their time, dedication and service during their tenure as members of the CMS' External Advisory Board.

Ananth Prasad, P.E.

Secretary, Florida Department of Transportation



Ananth Prasad, P.E., was named Secretary of the Florida Department of Transportation (FDOT) by Gov. Rick Scott. Prasad, a member of the CMS' external advisory board since 2007, will be responsible for managing the \$7 billion agency, which oversees infrastructure projects that are vital to Gov. Scott's 7-7-7 Jobs Plan — including port dredging, highway expansion and maintenance projects. Prior to his appointment as Secretary of FDOT, Prasad served as the assistant secretary for engineering and operations for the

agency. Prasad rejoined FDOT in July 2010 after a brief two-year stint as a vice president of a construction-services firm. Prasad has a total of 20 years of experience in the transportation industry, including 18 years with FDOT where he previously held the positions of the chief engineer and director of construction. He was responsible for implementing various innovative contracting techniques, including public-private partnerships. Prasad earned a master's degree in civil engineering from the University of Florida. (Source: Governor's Office Press Release)

Distinguished

Professional Lecturer

Jana Lynott, AARP



As a person ages the desire to relocate decreases, and the need for communities to accommodate for the aging population becomes a real necessity. "In the next 20 years, the United States will see an 80 percent increase in the population age 65 and older — a demographic change so profound that every profession in America will be affected," said Jana Lynott, a senior strategic policy adviser with the Transportation and Livable Communities of the Public Policy Institute at the American Association of Retired Persons (AARP).

Lynott was the CMS' Distinguished Professional Lecturer on April 7. She was invited by Sherrilene Classen, Ph.D., an associate professor in the Department of Occupational Therapy at UF and a member of the CMS' Internal Steering Committee. Lynott's presentation concentrated on the considerations that policymakers, planners, engineers and regular citizens need to take for "an aging America." During her talk, she focused on road design and how planners and engineers must work together to create streets for a variety

of users. She also described a concept known as Complete Streets, which she says many communities in the U.S. are now embracing. Complete Streets addresses the needs of older road users and how those needs are balance with other users such as cyclists and pedestrians.

Classen, a rehabilitation scientist working with the aging population, supports the Complete Streets concept, and she is pleased the initiative is taking hold in communities. "Through the Complete Streets Initiative, Jana Lynott is challenging engineers, planners and rehabilitation scientist to work in an integrated fashion," Classen said. "And this optimizes transportation safety and efficiency for all citizens."

For more information, including the video recording of Lynott's presentation via Elluminate, visit: http://cms.ce.ufl.edu/news_events/distinguished_lecturer_seminar_series.php.

Spotlight on Research

| by Siva Srinivasan, Ph.D.

Assistant Professor, Civil & Coastal Engineering



Assessing the Impacts of Development in the Transportation Network

The impact of a development (for example, a shopping center) on the transportation system is traditionally captured in terms of the number of additional trips added to the network. While the trip rate is appropriate to capture the effect of a development locally (say at a nearby intersection), it is not an adequate measure of regional impacts. For instance, two developments could result in the same number of additional trips, but one of them could be attracting these trips from much farther away. In this case, it could be argued that the transportation impacts of both these developments are not identical (as would be indicated by a purely trip-volume-based assessment); rather, the one that leads to longer trip lengths effectively has a greater (negative) impact on the transportation system. With increasing emphasis on growth management and the containment of urban sprawl, there is a need for the assessment of such macro impacts of development using methods that relate the built-environment patterns to trip lengths. Further, there is a desire to moderate the energy consumed by the transportation sector to achieve energy-sustainability and to reduce the extent of greenhouse gas (GHG) emissions from vehicles. To achieve this goal without adversely affecting the quality-of-life of the people (broadly defined as the ability of people to satisfy their activity-participation needs), planners and policymakers are exploring urban-design solutions such as mixed-use neighborhoods (i.e. residential, commercials, schools and retail). In order to assess the extent to which such land-use patterns can reduce the length of travel

undertaken, it is necessary to quantify the relationships between land use and trip lengths.

CMS researchers have recently built a spreadsheet-based tool for estimating the lengths of vehicle trips generated by various types of land use patterns. Travel data from the 1999 Southeast Florida Regional Travel Characteristics Study (about 5,000 households) were combined with detailed land-use and roadway network data from the Miami-Dade, Broward and Palm Beach counties to build statistical models for trip lengths for different trip purposes. These models have been implemented in the spreadsheet-based tool.

As an illustration, the tool is used to predict the lengths of home-based work (HBW) and other (HBO) trips produced in identical residential parcels that are located in three very different neighborhoods of the region: one in Pahokee (in rural Palm Beach County), the second just outside the city of Palm Beach (suburban) and the third in downtown Miami. The residential parcel in the rural neighborhood produces the longest HBW (19.61 miles) and HBO trips (8.68 miles). The parcel in the urban location produces the shortest HBW (4.21 miles) and HBO (2.23 miles) trips. The suburban location in West Palm Beach produced HBW trips of 6.72 miles and HBO trips of 3.85 miles. Overall, this example illustrates the ability of the models to predict the trip lengths reflective of the context in which the travel is taking place.

Further details regarding this project are provided at:

http://cms.ce.ufl.edu/research/Steiner_CMS_2008-007_final.pdf

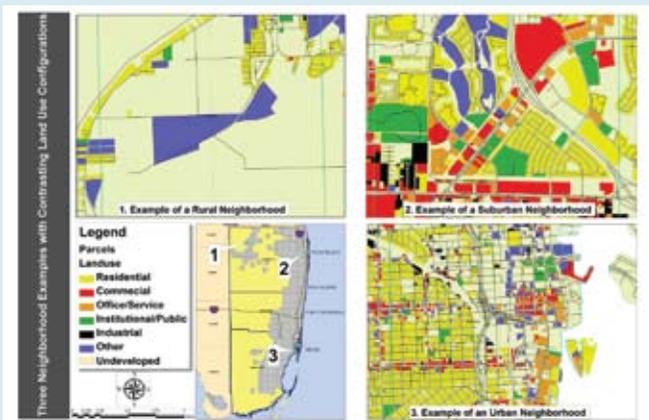


Figure1: Location and Characteristics of Three Neighborhoods for Model Application

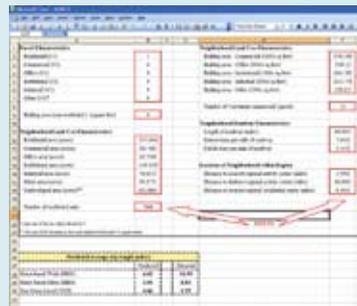


Figure2: Spreadsheet Implementation of the Trip-length Models

CMS Project Status

Now on the Web!

Ongoing projects are posted at:

<http://cms.ce.ufl.edu/research/>

Final reports for all completed projects are posted at:

http://cms.ce.ufl.edu/research/completed_projects.php



New CMS Projects

LEGO Robot Vehicle Lesson Plans for Secondary Education A Recruitment Tool

PI: Janet Degner, Director, Florida Transportation Technology Transfer Center (T2)
Project # 2011-001

Route-Choice Modeling using GPS-based Travel Surveys

PI: Siva Srinivasan, Ph.D., Civil & Coastal Engineering
Project # 2011-008

Privacy Preserving Methods to Retrieve Origin-Destination Information from Converted Vehicles

PI: Yafeng Yin, Ph.D., Civil & Coastal Engineering
Project # 2011-009

Florida Long Distance Travel Characteristics and Their Impacts on Transportation Systems

PI: Ruth Steiner, Ph.D., Urban & Regional Planning
Project # 2011-013

Strengthening the Resiliency of the Coastal Transportation System through Integrated Simulation of Storm Surge, Inundation, and Non-Recurrent Congestion in Northeast Florida

PI: Peter Sheng, Ph.D., Civil & Coastal Engineering
Project # 2011-017

Modeling the Interaction among Urban Form, Accessibility, Congestion, and Travel Behavior using System Dynamics

PI: Andres Blanco, Ph.D., Urban & Regional Planning
Project # 2011-019

The Impacts of Freight Mode Splitting on Congestion, Risk, and Delivery Reliability

PI: Joseph Geunes, Ph.D., Industrial & Systems Engineering
Project # 2011-023

New FDOT Match Projects

Development of Activity-Based Travel-Demand Models for Florida: An Assessment of Feasibility and Transferability

PI: Siva Srinivasan, Ph.D., Civil & Coastal Engineering
Project # 90425

Central Data Warehouse Enhancements, Part 2

PI: Scott Washburn, Ph.D., Civil & Coastal Engineering
Project # 92671

Validity and Usability of a Safe Driving Behaviors Measure for Older Adults

PI: Sherrilene Classen, Ph.D., Department of Occupational Therapy
Project # TBA

Expanded Transportation Performance Measures to Supplement Level of Service (LOS) for Growth Management and Transportation Impact Analysis

PI: Lily Elefteriadou, Ph.D., Civil & Coastal Engineering
Project # 93661

Heavy Vehicle Effects on Florida Freeways and Highways

PI: Scott Washburn, Ph.D., Civil & Coastal Engineering
Project # 93817

Non-Linear Road Pricing

PI: Toi Lawphongpanich, Ph.D., Industrial & Systems Engineering
Co-PI: Yafeng Yin, Ph.D., Civil & Coastal Engineering
Project # 93713 & 93714

Development of Recommendations for Arterial Lane Closure to Optimize Traffic Operations

PI: Lily Elefteriadou, Ph.D., Civil & Coastal Engineering
Project # 93498

Faculty Spotlight

Toi Lawphongpanich, Ph.D.

Associate Professor, Industrial & Systems Engineering



iriphong “Toi” Lawphongpanich was born in the bustling city of Bangkok, Thailand, where he spent the first 15 years of his life. He began his academic journey half a world away, one which has landed him a tenured position as associate professor in the UF Department of Industrial & Systems Engineering.

The journey began in the quaint, sleepy town of Gorton, Mass. Here, Lawphongpanich attended the Lawrence Academy, a high school with about 200 students.

“There was a bed and breakfast, four or five shops, and a small supermarket,” Lawphongpanich said. “Today, Google map shows a slightly bigger town, but the Lawrence Academy still looks very similar to what I remember.” According to its website, the school now has a student population of approximately 400 students.

He was sent to Lawrence Academy because his parents thought his lack of focus and poor performance in school would make it difficult for him to compete well in Thailand’s university entrance examination. Lawphongpanich graduated from the Lawrence Academy and was accepted to Cornell University for his undergraduate studies.

While at Cornell, Lawphongpanich grew interested in operations research and industrial engineering. He said the interest in these subject areas came out of necessity because he did not like courses in biology, physics, and chemistry. He preferred those with more of a mathematical and analytical focus — to him they require less memorization.

“I remember hating these three subjects because they required lots of memorization such as the scientific names for plants, body organs, and the periodic table of elements, including the different measurement systems, British versus metrics,” Lawphongpanich said.

He completed his bachelor’s degree at Cornell in the School of



Toi Lawphongpanich at the College of Engineering, UF.

Operations Research and Industrial Engineering, or SORIE. He went on to finish a master’s degree in mathematical sciences from the Johns Hopkins University in Baltimore, and a Ph.D. in industrial and systems engineering from the University of Florida.

After earning his Ph.D., Lawphongpanich remained at UF as a visiting assistant professor for one year. During that time, his dissertation received the TSL Dissertation Prize from the Transportation Science and Logistics Society, a society within the Institute for Operations Research and Management Sciences or INFORMS. Before returning to UF in 2002 as a faculty member, he was the Chief of Strategic Planning Section at Bangkok Bank Limited for two years and taught at the Operations Research Department of the Naval Postgraduate School in Monterey, Calif., for 10 years.

His interest in transportation developed while working on his doctoral dissertation at UF. He was tasked with developing efficient algorithms for finding an equilibrium traffic flow distribution in large road networks. His adviser at the time, professor Donald Hearn, now an emeritus faculty, had received some funding from the National Science Foundation (NSF) to do the research. Hearn was also affiliated with the transportation program at UF.

“When I started working on this, I knew nothing about the traffic equilibrium problem,” Lawphongpanich said. “Don Hearn gave me a stack of about 20 papers and told me to read them. That is how I learned about the problem and what had been done previously.”

From then on, his interests blossomed in transportation science and large-scale optimization. Lawphongpanich said these two areas often complement each other because problems in transportation science are often very large.

As a professor at UF, Lawphongpanich dedicates his time to collaborating on congestion-pricing research projects with his colleague and friend, Yafeng Yin, Ph.D., an assistant professor in the Department of Civil & Coastal Engineering’s transportation program.

As a professor at UF, Lawphongpanich dedicates his time to collaborating on congestion pricing research projects with his colleague and friend, Yafeng Yin, Ph.D., an assistant professor in the Department of Civil & Coastal Engineering. Yin enjoys the partnership in research and the friendship it has sparked.

“I feel very fortunate to have him as a collaborator,” Yin said. “We share the same research interests and our skill sets complement each other. I’ve learned a lot from the collaboration. Toi has been a good mentor and a close friend to me.”

Lawphongpanich was introduced to congestion pricing while collaborating on a grant with his former doctoral dissertation adviser. Along with Yin, Lawphongpanich is considered an expert in the congestion pricing field. However, he is modest.

“When compared to my colleague professor Yafeng Yin, I am really just a newcomer to the field of congestion mitigation,” he said.

Currently, Lawphongpanich, in collaboration with Yin, is working

on two projects funded by the Florida Department of Transportation (FDOT). One of the projects involve dynamic message signs or DMS, the signs that one often sees along highways that display information such as travel times to various destinations, work zone warnings, hazardous conditions and special events. They are also used for Amber and law enforcement alerts.

“Our research is concerned with developing a systematic approach for planning, deploying and operating these DMS in the most efficient manner,” Lawphongpanich said.

The second project is related to congestion or road pricing. Lawphongpanich explained that the original objective of road pricing is to “promote a more efficient utilization of congested roads.” Road pricing over the years has been used to accomplish other objectives such as reducing emissions, and he said that many have argued that simple pricing structures are not flexible enough to accomplish multiple objectives simultaneously. The goal of the Lawphongpanich-Yin congestion pricing project is to consider a more flexible road pricing structure and to study how well it can accomplish two or more objectives, simultaneously.

In his role as an educator, Lawphongpanich teaches two courses: introduction to industrial and systems engineering and linear programming and network optimization. He also has taught nonlinear programming, network optimization, large-scale optimization, probability, statistics, stochastic models, industrial quality control, operations research and location theory.

Collaboration with other departments is important in industrial and systems engineering, Lawphongpanich said, because the field often deals with finding ways to do things better, e.g., in less time, with less cost, with high benefits, with more profits, etc.

“Many in our field devote themselves to finding better and faster techniques and algorithms to solve problems,” he said. “To be useful and relevant, the problems we solve should be practical and one

way of finding practical problems to solve is to collaborate with people from other fields.”

CMS Director Lily Elefteriadou has been very pleased with the contributions Lawphongpanich has made in the four years since the CMS was founded. She is delighted he is a member of the center’s Internal Steering Committee and has contributed to the field of transportation.

“Toi is an excellent researcher and a wonderful individual,” Elefteriadou said. “He is very innovative, as well as thoughtful, and he brings a significant amount of enthusiasm and creativity to the CMS. His collaborative work with CCE’s Yafeng Yin and their contributions to congestion pricing the past few years have been tremendous.”

Lawphongpanich has been at UF since January 2002. He is a member of the CMS’ Internal Steering Committee and TRB’s Congestion Pricing Committee.



Toi Lawphongpanich and Scott Washburn, a transportation faculty at UF, after arriving at the The Ann van Dyk Cheetah Centre located at the foothills of the Waterberg Mountains in South Africa.



From left: Yafeng Yin, Scott Washburn, Toi Lawphongpanich, and an animal handler with a captive cheetah at The Ann van Dyk Cheetah Centre, South Africa.



Student Spotlight

Jessica Mackey (Transportation/Urban Planning)

Jessica Mackey is a true North American: She was born in Florida and has roots in Canada and Mexico. She is a world traveler who is bilingual in English and Spanish. Mackey is pursuing a concurrent master's degree in the transportation and urban planning program at the University of Florida.

"I'm addicted to dancing salsa and traveling all over the world," Mackey said. "I love riding my bike on the Hawthorne Trail, and the underlying reason why I study everything I do is to try to make this world more sustainable. I love nature and any nature-related activities."

The Gainesville-Hawthorne State Trail runs 16 miles from Gainesville's Boulware Springs Park through the Paynes Prairie Preserve State Park, and it includes a wildlife management area. The trail has been designed as a recreational area for walking, cycling and horseback riding.

Mackey's interest in nature and outdoor activities developed as a result of limitations she encountered while attending high school in South Florida. Every day, she took long bus rides back to and from school, which left little time for enriching activities such as after school programs and clubs.

"I didn't have a car in high school, so I had to take a two-hour bus ride home from school every day," Mackey said. "So, having no car also limited me in what activities I could participate in after school."

She described the transportation system in South Florida as inefficient and lacking options for younger adults and people of lower incomes. "The elderly know this better than anyone," Mackey said. "All of this is intricately linked to how we plan, or don't plan, our cities."

Mackey earned a bachelor's degree in civil engineering from UF in 2008. Shortly thereafter, she began the transportation and urban planning dual graduate program at UF.

Mackey currently works with Ruth Steiner, associate professor in urban and regional planning and Siva Srinivasan, assistant professor in civil and coastal engineering. She chose the dual specialization because of her interest in improving cities and transportation options, a concern that goes back to the two-hour commutes during her earlier years.

"I've always had an interest in improving the urban form in most of Florida's cities," Mackey said. "We can be healthier, more sustainable, and improve people's quality of life. Transportation planning is the link to everything much like

transportation is the link to every activity we do in life.”

Mackey’s master’s work focuses on parking issues. She has evaluated parking and demand policy in downtown Gainesville, and is currently working on a similar project in South Florida, funded by the FDOT (Impact of Parking Supply and Demand Management on Central Business District – CBD – Traffic Congestion Transit Performance and Sustainable Land Use).

“Right now I’m working on a project led by Dr. Ruth Steiner that looks into the impacts of parking supply and demand management in Miami and Fort Lauderdale,” Mackey said. “I’ve also assisted her and Dr. Siva on a vehicle per miles traveled project.”

“Jessica’s knowledge in transportation engineering, combined with the courses she has taken in urban planning, will definitely give her a competitive edge in the job market,” Steiner said. “She takes personal interest in her chosen field of study, which comes from the transportation choices available to her earlier on in her life and her interest in sustainable living conditions. It’s been a pleasure working with her.”

The combination of transportation engineering and urban



Jessica Mackey at the famous Cristo Redentor statue located in the Corcovado mountain in Rio de Janeiro, Brazil.

planning is ideal for Mackey because of her love of the outdoors. She really enjoys collecting field data. “I get to go outside, and it’s really the best way to get a sense of the issues,” Mackey said.

But sometimes, collecting data on a busy street or at a parking lot can become somewhat strange. Mackey recalls collecting data for a particular parking/circulation study for TRI-RAIL, South Florida’s commuter rail service.

The drivers entering the parking lots were upset she was recording their license plate numbers. “Some drivers would back off, but once I explained to them my affiliation, and that I was collecting data for a research project, they were OK with it,” Mackey said. “People are usually nice.”

Mackey is satisfied with her decision to pursue the dual degree program, and because of her personal and academic experiences with transportation and urban planning, she has developed her own philosophy and is quite firm about it. Mackey said transportation engineers should have a good sense of urban planning, making sure designs are sustainable, and considering how they will impact regions and the quality of life. Likewise, she added, urban planners should have a good grasp of how a transportation engineer thinks and how they solve problems.

Mackey is an avid supporter of sustainability and said there is more work to be done in this area.

“We are finally moving away from the automobile oriented mentality, but we still have some strides to make,” Mackey said.

Mackey is scheduled to graduate in fall 2011.



Jessica Mackey (right) with her husband, Philippe St. Arnaud in Montreal, Canada.

Annual Student Conference

March 4, 2011
Emerson Alumni Hall (UF)



Each year in March, the CMS showcases the latest in transportation-related research conducted by graduate students at the University of Florida.

Students from the departments of civil engineering, industrial and systems engineering, urban and regional planning, occupational therapy, environmental engineering and other related discipline areas attend and/or present papers and posters. The conference is free and open to transportation professionals in academia, and in the private and government sectors. Awards are given to students for outstanding presentations and posters. This year, students from the departments of epidemiology, civil and coastal engineering, and urban and regional planning won awards for their presentations. Students from environmental engineering and civil and coastal engineering won awards for posters. The judges presiding over the awards selection were members of the CMS' External Advisory Board. The CMS Annual Student Conference is held in conjunction with the center's External Advisory Board meeting. For more information, visit: http://cms.ce.ufl.edu/news_events/2011_student_conference.php.

Presentations:

1st Place - Yanning Wang, Ph.D. student, epidemiology
Title: Validity and Usability of a Safe-Driving Behavior Measure for Older Adults: Strategy for Congestion Mitigation

2nd Place - Ruoniu (Vince) Wang, Ph.D. student, urban and regional planning
Title: Measuring Urban Form and Examining Its Relationship to Traffic Congestion in Florida

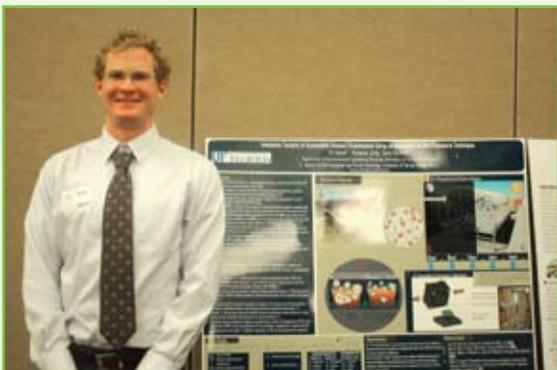
3rd Place - Dimitra Michalaka, Ph.D. student, civil and coastal engineering
Title: Enhancing CORSIM for Simulating High Occupancy/Toll Lanes Operations

Posters:

1st Place - Ori Baber, Ph.D. student, environmental engineering
Title: Investigation into the Inhalation Toxicity of Constituents of Automobile Exhaust using an Innovated in-vitro Exposure Technique

2nd Place - Brett Fuller, M.S. student, civil and coastal engineering
Title: Integration of Toll Plaza Analysis into CORSIM

3rd Place - Kwangkyun Lim, Ph.D. student, civil and coastal engineering
Title: A Comparative Analysis of Alternate Econometric Structures for Trip-Generation Models



Clockwise:

Brett Fuller;
Yanning Wang and her faculty adviser, Sherrilene Classen;
group photo of poster session participants;
Vince Wang at the podium presenting his work on urban form and traffic congestion in Florida; CMS Director Lily Elefteriadou (right) with ISE faculty - Panos Pardalos and Joseph Geunes; Ori Baber

Q&A with David Berrigan, Ph.D., MPH National Institutes of Health



1. What was the career path that led you to your current position at the NIH?

My current position involves research and grant/contract administration related to how environments influence diet, weight, and physical activity and how in turn these three factors influence health. I have a Ph.D. in biology; after seven years of research and teaching related to the biological effects of global warming, I received a cancer prevention fellowship. The fellowship supported a one-year master's in public health (MPH) and three years of research at NCI.

2. What is the most challenging aspect of your job?

A big challenge in my job is making sense of the federal statistical system. There are more than 70 federal agencies that produce statistical information, and a major part of my work has been to try to make a small part of this data better, to find creative ways to use the data, and to foster efforts to connect different elements of the data — literally or conceptually.

3. What has been the most rewarding experience of your career?

It is hard to think of the No. 1 moment, but a few years ago at the TRB annual meeting a fellow approached me and said more or less, "I wanted to tell you that after hearing your speech two years ago, I went home, changed my research emphasis, wrote a grant and received a million dollars." That was a terrific feeling to think that I had really inspired and motivated someone.

4. What do you consider the biggest challenges of the future for sustainability?

At the moment I think a big challenge is linking sustainability to other shared goals. We have a hard time individually and collectively pursuing goals where the benefits are in the future and/or largely accrue to other people. If we can mix up sustainability-related goals with shorter-term health, economic and aesthetic goals in coherent packages, we might do better at fostering the long-term goal of sustainability.

5. What are the major transportation challenges in U.S. as they pertain to sustainability? How can we overcome those?

I think I will leave this question to transportation experts. From a health standpoint, active transportation via walking and bicycling has large health and sustainability benefits, and I think our nation's low population density in many areas is a major challenge to this goal.

6. Advice for the CMS' efforts on sustainability?

Keep reaching out across multiple disciplines.

7. What scientific knowledge is necessary in order to study or research sustainability?

Obviously a lot of knowledge, but maybe a greater effort to

incorporate behavioral science, and behavioral economics would be timely. Engineering and ecology will get us to good policy and behavioral options, but we need to get people and institutions to adopt these policies.

8. What can the U.S. do to increase the use of mass transit?

I don't have any deep insights into this important question, but I personally hope that a combination of rising energy costs and changing social norms will help increase investment in mass transit and foster changes in planning that lead to greater availability and use of transit. I especially like the idea of putting bicycles into the mix, and the recent success of the Capital Bikeshare program is heartening.

9. What can transportation professionals do to improve active living?

I recently read an older text by Thomas F. Saarinen (Environmental Planning, Perception and Behavior). Saarinen emphasizes the idea of 'Design as Experiment' with "Design for human well-being ... an iterative process constantly modified and moving toward more appropriate conditions." I am confident that if overall environmental, community and individual health goals continue to be integrated into more traditional transportation, that we can improve some of the less-desirable features of the U.S. landscapes that have emerged as an unintended consequence of past policies.

10. What advice do you have for students who are interested in a career related to sustainability?

My advice is a little generic but beyond good technical skills: 1) Work as hard as you can to become a good writer – nothing else you do will help your career as much; 2) Be helpful to your peers, your colleagues and your community; this will pay long term dividends in your capacity to make things happen.



David Berrigan in Mexico on the Yucatan Peninsula.

Student Awards

Congratulations to our CMS-affiliated students for receiving various awards this semester!

Grady Carrick, Student of the Year Award, CUTC Awards Banquet, Washington, D.C., January 2011

Dimitra Michalaka, 2010-2011 WTS Central Florida Chapter, Frankee Hellinger Graduate Scholarship, Orlando, Fla., February 2011

Ly Nguyen, 2011 WTS Central Florida Chapter Frankee Hellinger Leadership Undergraduate Scholarship, Orlando, Fla., February 2011

Yanning Wang, Research Excellence Award, College of Public Health and Health Professions (PHHP) Research Day, March 2011



EAB Member Wins Award

Teresa Scott, P.E., director of public works in Gainesville, Fla., and a member of the CMS' External Advisory Board, was selected as one of the American Public Works Association (APWA) Top Ten Public Works Leaders of the Year for 2011. She will be recognized for this prestigious award at a local, Gainesville community-oriented event, as well as during an awards ceremony at the APWA's International Public Works Congress & Exposition in Denver, Colorado during September 18-21, 2011. Congratulations, Teresa!

WTS Student Chapter

The newly formed WTS student chapter at University of Florida has gained momentum this semester. Members have attended conferences, planned activities, set agendas for future projects and recruited members. Seven students joined the chapter as of January 2011, and new officers were elected.

Key activities this semester included a trip to the 90th Annual Meeting of the Transportation Research Board (TRB) in Washington, D.C., by graduate students Dimitra Michalaka, Zhuofei Li and Cuie Lu. Both Michalaka and Lu presented papers at the conference. Michalaka, along with Li, attended the WTS International reception, which was held at the Marriott Wardman Park hotel, and where they had the opportunity to interact and network with transportation professionals. In April, the chapter mobilized to host a Resume Development and Interview Workshop, which included Mary Medina, assistant director for employer development at UF's Career Resource Center, and Billy Cottrell, an editor from the Department of Civil & Coastal Engineering. The event was very well attended, and included a three-hour fundraiser event at Red Mango, a local frozen yogurt company, which agreed to donate 10 percent of sales to the student chapter.

High on the student chapter's agenda is the WTS/U.S. Department of Transportation (U.S.DOT) Transportation You program, an outreach action plan for girls ages 13 to 18. This effort is being led by Leslie Washburn, P.E., CMS workforce development coordinator. The WTS UF student chapter will team up with Washburn and also assist her with other activities related to K-12 students.

To find more about WTS UF Student Chapter, go to Facebook and search for WTS UF Student Chapter (URL <http://www.facebook.com/pages/WTS-UF-Student-Chapter/197365740303159>) or visit the chapter website at <https://sites.google.com/site/wtsufstudentchapter/>



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Amy Cavaretta
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Zhuofei Li
- Newsletter/Website Chair:**
Asha John
- Fundraising Chair:**
Anna Zhang
- Programs Chair:**
Ly Nguyen
- Recruitment Chair:**
Jing Li
- Recruitment Co-Chair:**
Cuie Lu

Clockwise: Winners of the 2010-2011 WTS Central Chapter (Orlando) student awards, Ly Nguyen and Dimitra Michalaka; the WTS UF Student Chapter along with Mary Medina from the UF Career Center (at right, front row); Mary Medina of the UF Career Center (left) listens to Ashish Kulshrestha discuss his resume.



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