

# CMS

UNIVERSITY OF FLORIDA

FALL  
2009

## CMS STUDIES THE TRADEOFFS AND COSTS ASSOCIATED WITH TRANSPORTATION CONGESTION IN SUPPLY CHAINS



**UF** UNIVERSITY of  
FLORIDA

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Tier 1 University Transportation Center*





# MESSAGE FROM THE DIRECTOR

Dear Colleagues,

I am very pleased to announce that Dr. Ruth Steiner, Associate Professor in the Department of Urban & Regional Planning (URP) was named the CMS's associate director, effective July 1, 2009. Dr. Steiner has been instrumental in getting the center off the ground, and also in establishing strong collaborative activities between the Department of Civil & Coastal Engineering (CCE) and URP. In her new role Dr. Steiner will be primarily responsible for the center's educational activities. Additional information regarding Dr. Steiner's new appointment is provided on page 3.

With CMS entering its third year of operation, five of the projects selected during the center's first request for proposals are scheduled to be completed by December 2009. These projects deal with a variety of topics: the tradeoffs and costs of congestion in supply chains, large scale evacuations, congestion pricing, signal timing optimization & Florida's Central Data Warehouse (CDW). Look for the final reports of those projects at our Web site [http://cms.ce.ufl.edu/research/completed\\_projects.php](http://cms.ce.ufl.edu/research/completed_projects.php). We just completed our third-year call for proposals, where 18 pre-proposals were submitted to the CMS and nine chosen to submit full proposals for further consideration. The results of the final selection process will be announced by mid-February 2010.

The CMS has just started work on a research project funded by the Florida Department of Transportation (FDOT) to study managed (High Occupancy Toll – HOT) lane operations (PI: Yafeng Yin). During this two-year project, UF researchers will analyze managed lanes demand behavior, compare time-of-day vs. dynamic managed lanes, evaluate the capacity of managed lanes, and assess the interactions between ramp metering and toll lane operations. The research will be based on data from the I-95 Express lanes in Miami, Fla., one of FHWA's Urban Partnership Agreement Projects.

Our transportation graduate program continues to grow, and there are currently 69 students affiliated with the CMS. The first graduate of the concurrent degree in transportation engineering and urban planning (Mr. Benito Perez) is now employed as a transportation engineer at the Hampton Roads Transportation Planning Organization in Chesapeake, Va. The concurrent degree program continues to gain momentum, as more students become aware of the benefits it offers and the opportunities available to them after graduation. Our Transportation Research Internship Program (TRIP) has proven to be an excellent program for encouraging undergraduate students to enter the transportation graduate program. Several of our interns continue to work on research projects after their internships have ended and plan to eventually attend graduate school.

This summer, the CMS co-sponsored a Workshop on Roundabouts held in Orlando, Fla. Speakers included some of the best in the area of roundabout design and operations. This fall, we also co-sponsored the second symposium on congestion mitigation strategies and a lunch for alumni and friends of the UF Transportation Research Center (TRC). The event included Congressman John Mica (R-FL), who joined us via video conference from Washington, D.C.; Laura Kelley of the Orlando-Orange County Expressway Authority; Steve Arrington of the Jacksonville Transportation Authority; Grady Carrick of the Florida Highway Patrol; and Teresa Scott of Gainesville Public Works. Our lunch speaker was UF Professor Emeritus Kenneth Courage.

In this issue of the CMS newsletter, you will find additional information about several of these activities, as well as a Q&A article with Ms. Linda Watson, CEO of LYNX, also known as the Central Florida Regional Transportation Authority. As always, we welcome suggestions and hope to collaborate with you in the near future. Read on!

Sincerely,

Lily Elefteriadou, Ph.D.  
CMS Director

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# INNOVATIONS IN PRICING OF TRANSPORTATION SYSTEMS: WORKSHOP AND CONFERENCE

May 13-14, 2010

Royal Plaza Hotel in the Walt Disney World Resort  
Lake Buena Vista, Florida

The focus of this workshop and conference is on innovative market-based approaches, perhaps in combinations with other strategies, to encourage a more efficient use of transportation systems and to devise better financing schemes for improving or enhancing these systems. The main purpose is to bring together practitioners, experts and researchers from various transportation agencies and backgrounds (for example, economics, transportation, civil engineering, operations research, industrial engineering, urban planning and social science) to discuss and share innovative ideas in pricing of transportation systems.

Conference Sponsors: Center for Multimodal Solutions for Congestion Mitigation (CMS), Transportation Research Board (TRB) and National Science Foundation (NSF)

For more information, including registration, visit:  
<http://conferences.dce.ufl.edu/pricing>



## CMS PROJECT AWARDED BEST PAPER AT CONFERENCE IN BRAZIL

CMS-affiliated researcher, Panos Pardalos, Ph.D., a distinguished professor in the Department of Industrial & Systems Engineering at UF, received the Roberto Diéguez Galvão Award as best paper for his work on “A Hybrid Genetic Algorithm for Road Congestion Minimization” at the XLI Brazilian Symposium of Operational Research held at the Náutico Praia Hotel & Convention Center in Porto Seguro, Brazil on Sept. 1 – 4 of this year. The study on congestion minimization was funded in part by the CMS. Congratulations to Dr. Pardalos and his team of researchers.

**Title & Authors:** A Hybrid Genetic Algorithm for Road Congestion Minimization, L. Buriol, M. Hirsch, P. Pardalos, T. Querido, M. Resende, M. Ritt, XLI SBPO 2009, Porto Seguro, Brazil.

**Abstract:** One of the main goals in a transportation planning process is to achieve solutions for two classical problems: the

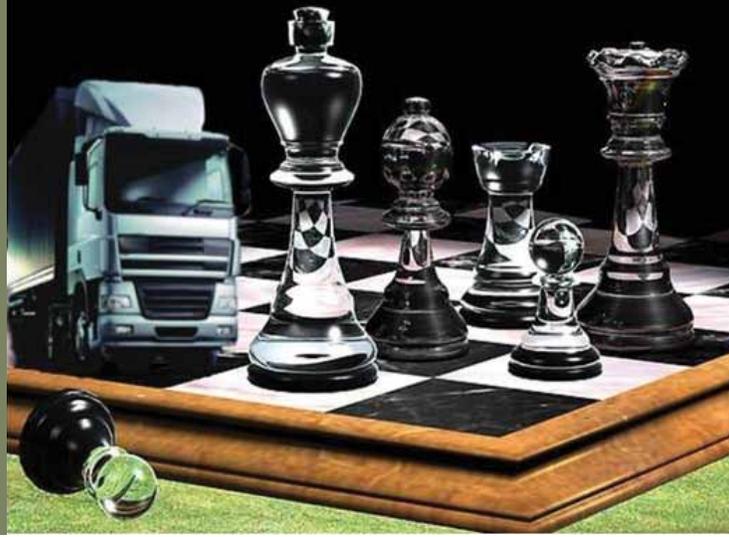
traffic assignment problem, which minimizes the total travel delay among all travelers, and the toll pricing problem which settles, based on data derived from the first problem, the tolls that would collectively benefit all travelers and would lead to a user equilibrium solution. Acquiring precision for this framework is a challenge for large networks. In this article, we propose an approach to solve the two problems jointly, making use of a Hybrid Genetic Algorithm for the optimization of transportation network performance by strategically allocating tolls on some of the links. Since a regular transportation network may have thousands of intersections and hundreds of roads, our algorithm takes advantage of mechanisms for speeding up shortest-path algorithms.

## ASSOCIATE DIRECTOR FOR THE CMS

Associate Professor Ruth Steiner of the Department of Urban & Regional Planning (URP) was named the CMS’s associate director in May of this year. Her appointment became effective on July 1, 2009.

“I am very excited to assume these new responsibilities, and particularly about taking the collaboration between transportation engineering and urban planning to the next level,” Steiner said. “I look forward to working with the CMS External Advisory Board, the students, and my colleagues in the center to create an interdisciplinary transportation program at the University of Florida.”

Since the center’s inception, Steiner has been a key supporter of the CMS, serving as a member of the center’s Internal Steering Committee and, along with Assistant Professor Siva Srinivasan (CCE), created the Concurrent Degree Program in Transportation Engineering & Urban Planning. Steiner’s affiliation with the center is vital because of her expertise in transportation policy, which complements the transportation engineering faculty’s focus on the analysis, modeling and operation of transportation systems.



JOSEPH GEUNES, PH.D. AND DINCER KONUR, M.S.

## Characterizing the Tradeoffs and Costs Associated with Transportation Congestion in Supply Chains (CMS Project #2008-004)

*Department of Industrial & Systems Engineering  
University of Florida*

The design of a supply chain network requires considering numerous decision factors, including the locations of facilities (plants and distribution centers), the assignment of customers or markets to supply facilities, production and storage levels at facilities, and the timing and quantities of shipments between facilities. These decision factors serve as primary drivers of operations costs in supply chains, and the interdependence of these decisions and the associated tradeoffs lead to a high level of complexity. For example, building a large number of facilities close to customer markets may result in low transportation costs for finished goods, but the associated facility costs and required inventory investment might make this an unattractive option. At the other extreme, while having only a few facilities may reduce facility and inventory holding costs, the associated transportation costs for finished goods may be prohibitive.

Classical supply chain design approaches have considered these complex interactions and tradeoffs between facility, transportation, and inventory holding costs in the development of a supply chain's architecture. These classical approaches typically assume a particular transportation cost structure that accurately determines projected transportation cost based on the frequency and quantity of deliveries between facilities and markets. These approaches have, therefore, ignored the important (but complicated) way in which traffic congestion influences supply chain performance. Traffic congestion leads to increased transportation-related costs and increased delivery lead times, which, in turn, increases the required system inventory investment for meeting desired customer service levels. Thus, ignoring the effects of traffic congestion in supply chain design decision-making can lead to inaccurate cost projections and suboptimal supply chain network designs.

Accounting for the impacts of traffic congestion on supply chain design requires simultaneously considering the individual decisions made by different, independent decision makers. This leads to the consideration of two kinds of competition in supply chains: competition for product sales and competition for limited transportation capacity. The former type of competition is resolved in the market(s), where a market equilibrium price and a supplier's sales combine to determine the

supplier's market revenue. The latter type of competition interacts with the former (indirectly, via the implied costs) to determine the equilibrium supply quantities firms will send to markets. We apply the tools of Game Theory and Operations Research in order to develop mathematical decision models that account for decentralized decisions in a competitive environment.

Our goal in this research is to understand how traffic congestion costs and effects, which are not separable, influence supply chain location and distribution decisions, i.e., strategic supply chain designs. We have thus developed mathematical models for distribution and location planning decisions in supply chains that explicitly account for traffic congestion costs and impacts. As part of our research, we exercised these models computationally, via numerical tests, to gain additional insight into how traffic congestion qualitatively affects optimal decision-making in supply chains.

We first studied a competitive facility location and market-supply game with multiple identical firms competing in different markets in a congested distribution network. As a result of their location and quantity supply decisions, firms are subject to location-specific transportation costs, convex traffic congestion costs and fixed facility location costs (convex congestion costs increase at an increasing rate in the congestion level, as one would expect in practice). First, we study the supply quantity decisions for a firm when the location choices of the firms are identical. An oligopolistic Cournot game is analyzed to determine a Pure Nash Equilibrium (PNE) for these quantity decisions, and we provide analytical results on the effects of traffic congestion costs on the equilibrium quantities flowing from supply facilities to markets. (A Cournot game is one in which the equilibrium price in a market is inversely proportional to the total market supply; a Pure Nash Equilibrium is a solution in which each player's strategy is deterministically defined, and no player can be unilaterally better off by deviating from the solution.) We next focus on the location decisions of the firms. As firms are identical, firms will choose identical facility locations, and we therefore study the optimal location decisions for any individual firm.

We then study a set of heterogeneous competitive firms considering the location of facilities at a set of candidate locations

in order to serve a set of markets. In this case, each firm incurs firm-specific transportation costs, as well as convex congestion and fixed location costs as a result of location and distribution volume decisions. The unit price in each market is a linear decreasing function of the total amount shipped to the market by all firms; that is, we consider an oligopolistic Cournot game and analyze the two-stage Nash Equilibrium. This problem is referred to as the location-supply game, or competitive location game, and we first study the firms' market-supply decisions for given facility locations, i.e., the game's second stage. We formulate the problem of finding the equilibrium supply quantities as a so-called variational inequality problem and provide a solution algorithm for determining an equilibrium solution. Then we focus on the location decisions, i.e., the game's first stage. We provide rules to obtain a dominant location matrix, and use these rules in a heuristic solution approach to search for an equilibrium location matrix.

Our work models traffic congestion costs endogenously and has provided analytical results on how traffic congestion costs affect equilibrium supply quantity decisions. Increased traffic congestion hinders efficient use of the distribution network, as firms may choose to supply a market from multiple, distant, decentralized facilities. Moreover, the results of our numerical studies characterize the effects of congestion on facility location decisions as well. In our numerical studies, we illustrate how a continuous increase in traffic congestion cost can drive firms out of markets and out of business. Furthermore, we highlighted a counter-intuitive result in our numerical studies

by showing that, under Cournot competition, firms may, in some scenarios, actually increase their profit levels when they ignore congestion-based competition. That is, when all firms consider congestion costs, in equilibrium, individual firms supply less to markets than they would in the absence of these costs. At this equilibrium point, no firm is willing to unilaterally deviate from the equilibrium solution and increase their supply quantity, as the increased revenue they would see would not outweigh the increased congestion cost. However, if all firms were to ignore their traffic-congestion-related costs, they would then all choose to supply greater quantities to markets, and the resulting increased revenue can, in certain cases, outweigh the increased traffic-congestion-related costs. We note that this result assumes that all individual firms make the same choice to either consider or ignore congestion-related costs. When competitors compete over more than one resource, e.g., market price and congestion in our case, analyzing which of these is the primary driver of profit serves as an interesting problem for further study.

Our results document the negative effects of traffic congestion on firms. As a result, it is possible that firms may be willing to cooperate with government agencies to reduce the burden traffic congestion places on a firm's cost structure. It is even possible that firms may cooperate with each other to mitigate traffic congestion, and, thereby reduce the negative effects of traffic congestion. Studying such traffic-congestion-mitigation policies, with mathematical bases, remains a promising research area.

## DISTINGUISHED LECTURER SEMINAR

Professor Nagui Roupail was this semester's Distinguished Lecturer for the CMS. Roupail's presentation was entitled "Measuring and Modeling Vehicle Emissions: Methodology and Applications."

The seminar was held at the UF Electronic Delivery of Graduate Education (EDGE) facilities. A total of 40 people attended the presentation both in person and remotely via Elluminate (an educational Web-conferencing tool provided by UF). CMS Director Lily Elefteriadou is a friend and colleague of Roupail and feels that faculty and, especially students, benefited from his talk.

"We were very excited about Dr. Roupail's timely presentation on vehicle emissions," Elefteriadou said. "Dr. Roupail represents a tremendous knowledge-base in transportation research and education, and having a person of his caliber talk at our institution

is great exposure for our students. His presentation was very interesting and the topic a very relevant one as we increasingly focus on the environmental effects of transportation."

Professor Roupail presented ongoing research at North Carolina State University in the area of vehicle emissions and fuel use. The study focused on measuring and modeling vehicle emissions in real-world field settings by using a portable emissions measurement system (PEMS).

For a complete abstract on Dr. Roupail's presentation and a bio, visit <http://cms.ce.ufl.edu> and see News & Events. Click on the Distinguished Lecturer Seminar Series link for a video of the presentation.





From Left: John Arrington, Teresa Scott, Lily Elefteriadou, Laura Kelley, Grady Carrick

## 2<sup>ND</sup> CONGESTION MITIGATION STRATEGIES SYMPOSIUM

and representatives from other transportation affiliated centers at UF, such as Janet Degner, director of the Florida Transportation Technology Transfer (T<sup>2</sup>) Center.

“Mica’s involvement the second time around illustrates his continued support and interest in what the CMS UTC is doing,” Degner said. She added that the transportation symposium featured a well-rounded program with excellent speakers who were asked a number of pertinent questions by the audience. She also hopes future events will be broadcast live via Elluminate or other webcasting tools as the topics the CMS presents would benefit many in Florida and nationally.

Genesis Harrod, a graduate student in UF’s transportation and urban planning concurrent-degree program attended the symposium. She said she left the event feeling “invigorated.”

“I greatly value the wealth of information presented at the CMS Symposium,” Harrod said. “It provided a window into various aspects of the transportation profession and presented different approaches to finding transportation solutions. I look forward to sessions to come.”

The CMS and the Transportation Research Center (TRC) at UF wish to thank all the guest speakers for their excellent contributions to the symposium. All presentations are posted online at: <http://cms.ce.ufl.edu>.

About 50 people attended the 2<sup>nd</sup> Congestion Mitigation Strategies Symposium co-sponsored by the CMS on Nov. 6, 2009. The symposium was held in conjunction with the 100 Years of Gator Engineering celebration and with the TRC Alumni & Friends Lunch. Symposium guest speakers included Congressman John Mica (R-FL) via videoconference from Washington, D.C.; John Arrington from the Jacksonville Transportation Authority; Chief Grady Carrick of the Florida Highway Patrol; Laura Kelley of the Orlando-Orange County Expressway Authority and Teresa Scott of Gainesville Public Works.

This was Congressman Mica’s second time as a guest speaker at one of the CMS’s symposiums. During his videoconference, he encouraged researchers at UF and the public alike to provide his office with comments, as the new transportation bill is being written and debated. The congressman is the ranking member of the Transportation and Infrastructure Committee and is extremely knowledgeable on transportation issues affecting our nation and the state of Florida. Transportation faculty at UF were pleased the congressman took time off from his busy schedule to join the symposium via videoconference.

“Congressman Mica’s continued engagement with our center and his willingness to participate in our activities is very telling of his commitment to transportation,” said Lily Elefteriadou, professor and director of the TRC and CMS. “He is very familiar with the transportation issues Florida faces, as well as those at the national level. We appreciate his insights into future research directions, and we hope he can continue to interact with our students and researchers.”

Elefteriadou was also pleased with the presentations of the other guest speakers/panelists. She said the speakers are leaders in the transportation community who provide unique perspectives into congestion mitigation issues. “They did a wonderful job of describing transportation congestion problems and solutions they implemented,” she said.

The symposium was well attended by students, transportation professionals, residents from the local Gainesville, Fla., area

### PANELISTS & TOPICS:

Congressman John Mica (R-FL)  
Topic: *Perspective from Washington, D.C.*

Laura Kelley, Deputy Director/Finance,  
Administration and Planning  
Orlando-Orange County Expressway Authority  
Topic: *The Wekiva Parkway: Breaking New Ground in Florida’s Roadway Development*

John Arrington, Director of Resource Development  
Jacksonville Transportation Authority  
Topic: *Congestion: Multi-Modal Solutions*

Chief Grady Carrick, Florida Highway Patrol  
Topic: *Congestion Mitigation from the FHP Perspective*

Teresa Scott, Director  
Gainesville Public Works  
Topic: *Congestion Management – The Gainesville Way*

# TRC

## ALUMNI & FRIENDS LUNCH

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Alumni and friends of the UF Transportation Research Center (TRC) gathered on Nov. 6, 2009, for a lunch in honor of the center's long-standing legacy as the hub for transportation research at the University of Florida. The lunch was held in conjunction with the UF College of Engineering's 100<sup>th</sup> year celebration activities. The TRC is the "umbrella" center that houses other transportation programs and centers such as the CMS. Former UF transportation alumni and current students, faculty and staff at UF attended. Professor Emeritus Kenneth Courage, a 38-year veteran of the Department of Civil & Coastal Engineering at UF, was the honored guest speaker at the lunch.

"I was very glad that Ken agreed to talk during our luncheon because he is one of the leaders in our profession and has been the leading force behind the TRC for many years," said Lily Elefteriadou, director of the TRC and CMS. "This was also a wonderful opportunity to reconnect with recent alumni and to get acquainted with those who graduated before I arrived to UF."

UF Associate Professor Scott Washburn, a transportation program faculty member in the Department of Civil & Coastal Engineering, has been with TRC for the past 10 years. He has seen many students graduate from the program, and he also knows Courage well. He was also glad that Courage was chosen to be the honored guest speaker.

"Professor Ken Courage's presentation on the history of the TRC was an informative and humorous retrospective of the TRC," Washburn said. "The lunch also provided a great opportunity to reconnect with former students."

During Courage's presentation, he recounted some of the more memorable anecdotes of years past. And as for the academic and research endeavors of the TRC, he believes it will continue to grow strong.

"We've had some excellent faculty and some memorable students in the past 38 years," Courage said. "I'm confident that the people we have now will continue our tradition as one of the nation's leading transportation research and educational institutions."

From Left: Grady Carrick, Bill Sampson, Scott Washburn, Yafeng Yin, Lily Elefteriadou, Ken Courage





# Featured

SIVA SRINIVASAN, PH.D.  
ASSISTANT PROFESSOR

*Becoming a transportation engineer was not in the cards for this UF professor, but graduate school changed all that, transforming him into the passionate teacher and researcher he is today.*

Living in a hustling and bustling city of more than four million people, crowded with every form of transportation imaginable, he relied mostly on the city's bus system for his local travel. He did not own a car and did not know how to drive one. Little did Siva Srinivasan know that one day, he would be a faculty member in a major research institution in the United States, figuring out ways to mitigate the traffic congestion woes affecting most Americans.

Srinivasan, an assistant professor of transportation engineering in the Department of Civil & Coastal Engineering at the University of Florida, arrived at UF in 2005. He is the youngest member of the department's transportation faculty and specializes in travel-demand modeling and travel-behavior analysis, and has also started working in the area of transportation safety. Srinivasan teaches a class on urban transportation planning, which is attended by both graduate and undergraduate students. He also teaches a graduate course on discrete-choice modeling.

Srinivasan is from Chennai, (formerly known as Madras) in India. Srinivasan's hometown is India's fourth most populous

metropolitan area, located on its southeastern coast in the state of Tamil Nadu. It's well-known for its long beaches, fascinating temples, great food and a strong IT manufacturing and services sector.

"I had not traveled much within India, and air travel was not very common," Srinivasan said. "The first time I ever got on an airplane, I flew from Chennai all the way to Austin, Texas, to go to graduate school. It's kind of interesting when you've never flown, and suddenly, you are on a flight for almost a day and a half."

That very long flight from Chennai in 1999 took Srinivasan to The University of Texas at Austin, where he had been accepted into the master's degree program in civil engineering, specializing in transportation. Although he had been exposed to this discipline during his undergraduate studies in civil engineering at the Indian Institute of Technology (IIT) in Chennai, a career in transportation was not necessarily in the cards at that point in his life. It was only when he began to contemplate graduate studies that he

# Researcher

thought of transportation engineering as a possibility. "There were so many factors that influenced my choice of an area of specialization in graduate school, including the funding available for international students," Srinivasan said. "But once I got into graduate school, into transportation, I started liking it very much. I'm very happy about my career choice."

While at UT, his interest for transportation flourished. He was mentored by professor Kara Kockelman and worked on analyzing the economic impacts of highway-bypass roads for his thesis. In 2001, Srinivasan was accepted into the doctoral program in civil engineering at UT. His doctoral adviser was Professor Chandra Bhat, well-known for his work in travel-demand modeling and travel-behavior analysis. In fall 2004, Srinivasan completed his dissertation on incorporating household-interactions in activity-based travel-demand models. Today, he is a full-fledged transportation-engineering expert, passionate about the applicability of mathematics to traveler behavior, demand modeling, urban planning and safety issues.

"I am primarily interested in figuring out how travelers behave, how their behavior changes depending upon the modifications we make to the transportation and urban systems, and how we can quantify all these using mathematical techniques," Srinivasan said. "At the same time, I keep in mind that all the equations are ultimately to help create a safe and efficient transportation system."

Srinivasan is an advocate for interdisciplinary collaboration, particularly between transportation engineers and urban planners. According to him, planners think primarily about policy issues and the "big picture," whereas engineers focus on quantitative problem-solving and the "nitty-gritty" details. The collaboration

can facilitate a holistic approach to solving the urban problems. Srinivasan has already established strong research collaboration with the Department of Urban & Regional Planning at UF.

"Students should have exposure to other disciplines," Srinivasan said. "They should understand that there are other people who use different tools to address similar problems or even look at the same problems from very different perspectives." Srinivasan is excited that transportation-engineering and urban-planning students at UF get to extensively interact by taking classes in each other's departments. The need to facilitate a more formal interdisciplinary study lead him and his colleague, Ruth Steiner, an associate professor in the UF Department of Urban & Regional Planning, to create the concurrent-degree program in transportation engineering and urban planning. Srinivasan thinks the program will make students "bilingual" in the spoken language as well as mathematics when dealing with urban problems.

Srinivasan firmly believes the transportation program at UF is exemplary. "The quality of the transportation program at UF is first-rate," Srinivasan said. "It is a fantastic program, which has been growing significantly. Our students are highly motivated and are doing very well." He also likes that the group is diverse and international.

Looking ahead, Srinivasan has plans to continue his work on understanding activity-travel behavior and creating better ways to forecast travel demand. He also plans to continue his collaborations with the Florida Department of Transportation (FDOT) to implement his research findings. "I don't want my efforts to remain only as research publications," Srinivasan said. "I'm interested in helping the profession by taking advanced methods into the practice."

## WORKSHOP ON ROUNDABOUTS

More than 50 people attended a Workshop on Roundabouts, held at the Sheraton Orlando North Hotel in Orlando, Fla., on Aug. 19, 2009. The CMS co-sponsored the workshop with the UF Transportation Research Center (TRC), *McTrans* and Dowling & Associates, Inc.

The workshop's program consisted of a morning session focusing on transportation planning issues, and the speakers were Dan Burden of Glatting Jackson Kercher Anglin, Inc./Co-Founder of Walkable Communities, Inc.; Mark Doctor of the Federal Highway Administration; Ken Sides of the City of Clearwater; and Michael Wallwork of Alternate Street Designs, P.A. The afternoon sessions focused on demonstrations of the various software programs available to transportation engineers. Afternoon speakers were Rahmi Akcelik of Akcelik & Associates Pty Ltd.; Aaron Elias of the University of Florida; Lee Rodegerdts of Kittelson & Associates, Inc.; and Daniel Shihundu of Transoft Solutions, Inc.

More on the workshop, including presentations and photos are posted at:  
[http://cms.ce.ufl.edu/news\\_events/Workshop\\_on\\_Roundabouts\\_2009.php](http://cms.ce.ufl.edu/news_events/Workshop_on_Roundabouts_2009.php).



From Left:  
 Bill Mann, Kelli Mason, Sandra Winter, Sherrilene Classen, Kiera Gent, Courtney Anderson

## FEATURED CENTER

### Institute for Mobility, Activity and Participation (I-MAP)

Located within the College of Public Health and Health Professions at the University of Florida, the Institute for Mobility, Activity and Participation (I-MAP) was formed earlier this year to support increased driving-related research that expanded beyond projects in older driver safety. The National Older Driver Research & Training Center (NODRTC) previously supported the research at the University of Florida. I-MAP is now the umbrella under which all research related to driver safety and mobility will be conducted.

“We established I-MAP in 2009 to reflect our focus on mobility and transportation through the lifespan, and to bring together professionals and students interested in this area,” said Sherrilene Classen, Ph.D., MPH, OTR/L, director of I-MAP.

The goal of I-MAP is to conduct driver safety research related to all age groups; study the use of alternative transportation options, such as use of scooters or buses; and personal mobility, such as getting around at home and walking. Within I-MAP, researchers will execute these activities as a means to preserve, promote and improve independent, safe and appropriate mobility for individuals and within populations.

“There is a significant need to study all age groups, and we are already engaged in projects that fall outside the scope of research on aging drivers,” Classen said. “For example, we are studying driving safety issues of soldiers, of all ages, returning from the wars in Iraq and Afghanistan.”

Currently, researchers at I-MAP are engaged in projects related to the driving issues of people with seizure disorders such as epilepsy, traumatic brain injury/post traumatic stress disorder/depression, Parkinson’s disease and patients undergoing deep brain stimulation.

“We are also exploring the relationship of personality (for example extroverts vs. introverts) to driving behaviors and driving performance,” Classen said. “Future plans are that this research will extend beyond older drivers.”

I-MAP has pending or funded proposals, which include: 1) a study on transportation planning concerns (for example, emergency evacuation) for the elderly and people with disabilities during natural and man-made disasters; 2) assessing the simulated driving performance of post-deployed military personnel members (all ages, all diagnoses) in rural Florida, via a mobile simulator; 3) the development of a database to provide access to Floridians to alternative transportation options in every county in the state; 4) the evaluation of caregiver responses on their loved ones’ mobility needs and driving behaviors; and 5) validating a measure to predict on-road driving performance.

Researchers at I-MAP are interested in cross-disciplinary collaboration and affiliation with investigators at the University of Florida and beyond its campus borders. In addition to collaborations in the United States, I-MAP has formed partnerships with researchers in Canada, the Netherlands, Great Britain, Australia, Israel and Japan. Its national and international expansion is expected to grow.

“The diversity of thought, experience and training of multidisciplinary team members, the breadth of knowledge from community partners, the wisdom from my advisory

Researchers involved with or interested in research pertaining to the following areas are invited to become an affiliate member and contribute to I-MAP:

- Screening, Assessment and Rehabilitation
- Simulated driving performance
- On-road driving performance
- Instrumented vehicles
- Community mobility
- Driving cessation and counseling
- Special populations in whom driving or community mobility may be affected
- In-vehicle technologies
- Roadway or intersection design
- Walkable communities
- Sustainable transportation
- Mobility through the life span
- Crashes
- Injury prevention
- Personal mobility, including walking and wheelchair mobility

# CMS PROJECTS STATUS

Draft final reports for the projects listed below are in the process of being evaluated by external reviewers, and thus are in the final stages of completion. All completed projects will be posted on the CMS Web site and on TRB's Transportation Research Information System (TRIS), sent electronically to the National Transportation Library and further distributed as required by the USDOT/RITA Reporting Requirements for UTCs. If you are interested in serving as an external reviewer for the CMS, please contact Ines Aviles-Spadoni at [iaviles@ce.ufl.edu](mailto:iaviles@ce.ufl.edu) or at 352-392-9537, Ext. 1409.

## PROJECTS NEARING COMPLETION:

Central Data Warehouse Configuration, Data Analysis for Congestion Mitigation Studies

CMS # 2008-001

Principal Investigator: Kenneth Courage, P.Eng., Professor Emeritus (CCE)

Amount Awarded: \$78,698

Anticipated End Date: Dec. 31, 2009

Simulation-Based Robust Optimization for Signal Timing and Setting

CMS # 2008-003

Principal Investigator: Yafeng Yin, Ph.D. (CCE)

Amount Awarded: \$109,335

Anticipated End Date: Dec. 31, 2009

Characterizing the Tradeoffs and Costs Associated with Transportation Congestion in Supply Chains

CMS # 2008-004

Principal Investigator: Joseph Geunes, Ph.D. (ISE)

Amount Awarded: \$57,475

Anticipated End Date: Dec. 31, 2009

Multimodal Solutions for Large Scale Evacuations

CMS # 2008-005

Principal Investigator: Panos Pardalos, Ph.D. (ISE)

Amount Awarded: \$71,481

Anticipated End Date: Dec. 31, 2009

A Pricing Approach for Mitigating Congestion in Multimodal Transportation Systems

CMS # 2008-006

Principal Investigator: Siriphong (Toi)

Lawphongpanich, Ph.D. (ISE)

Amount Awarded: \$119,023

Anticipated End Date: Dec. 31, 2009

*continued from Page 10*

committee and the selfless giving of research participants, fuel I-MAP's work on a daily basis," Classen said. "The collaboration that I experience through this research culminates powerful synergies with many advantageous outcomes."

As for the NODRTC, Classen said its activities will continue to grow within the larger I-MAP. As such, the center will remain an entity for conducting research, delivering service, and providing training to older adults, their family members/caregivers and/or clinicians.

By funding projects essential to its mission, by tapping into the multi-disciplinary research pool at UF and beyond, by offering pre-doctoral and post-doctoral fellowships, and by using I-MAP's existing infrastructure, support and resources, Classen hopes to establish I-MAP as a University of Florida center of excellence for research in mobility and transportation through the lifespan.

"We are living in a transportation-dependent society, one in which safe and independent mobility are determined by multiple person factors, vehicle factors, other road users, a changing and dynamic environment, or an interaction among all these factors,"

Classen said. "As such studying transportation and mobility is complex, multi-dimensional and dynamic."

I-MAP brings together engineers, occupational therapists, driving evaluators, psychologists, physicians, rehabilitation scientists, social and behavioral scientists, measurement experts, injury prevention specialists, epidemiologists, biostatisticians and public health officials, to fulfill its research, education and service mission.

For information on collaborating with the center, call (352) 273-6062 or e-mail Sherrilene Classen at [sclassen@phhp.ufl.edu](mailto:sclassen@phhp.ufl.edu), or visit the I-MAP Web site at: <http://mobility.phhp.ufl.edu/>.



# Student

## GRADY

*For this non-traditional graduate student, “keeping it together” has a lot to do with serving others, being a lifelong learner and harnessing the pursuit of happiness.*

A typical work day has him traveling to various locations around north Florida to interact with transportation, law enforcement and traffic safety, among other interests. His BlackBerry and laptop

help him bridge communications between FHP headquarters in Tallahassee and the troops on the road. When he is in his Jacksonville office, he is usually meeting with personnel, participating in conference calls, or reviewing reports and operational plans. On any given day, he weighs in on significant arrests made by his troopers, unusual incidents and traffic crashes, as well as a few fatal ones that occur each day. He manages four troops who cover half of Florida’s 67 counties and about 600 personnel.

Grady Carrick is a regional commander in the Florida Highway Patrol (FHP), a duty that stretches all the way from Jacksonville to Pensacola in the Florida panhandle, and as far south as Ocala. He is also pursuing his doctoral degree in the transportation graduate program at the University of Florida. Either challenge would seem daunting by itself, but he is not your typical student.

### **Bridging the communications gap**

Throughout his 27-year career, Carrick has sometimes noticed a disconnection between transportation professionals and law enforcement officials, as they often seem to operate independently of each other. As a student in the University of Florida transportation graduate program, Carrick feels he has a unique vantage point to make a difference.

“I have occasionally observed professional ‘silos’ over the years where engineers, law enforcement and other transportation stakeholders don’t always communicate well,” Carrick said. “The prospect of bridging the

communication between transportation disciplines excites me. I have always viewed work and academia as mutually beneficial, and that view is fulfilled when I help people work together.”

Carrick’s efforts in bridging that gap began in 2004, when he started work on a master’s project in the transportation graduate program at UF. His master’s work, completed in 2006, gave way to a better understanding of work zone crashes and paved the way for changes in crash reporting and data collection. In 2007, Carrick continued his graduate training in the Ph.D. program, and he currently plans to use data from police traffic stops and enforcement for his doctoral research to evaluate how they affect driver behavior and traffic flow in general.

“Traffic enforcement is an important part of transportation safety since most crashes are attributed to drivers and not the roadway,” Carrick said. “Determining when, where and how to reduce crashes with enforcement has always been a challenge for officers and their managers.”

Carrick explained that his work with the FHP allows him to see the transportation system first hand at the roadside, remotely through joint ITS systems with the Florida Department of Transportation (FDOT,) and through access to various types of statistical information.

“If a driver sees a car on a highway that has been stopped by a police officer, what will that driver do? Will the driver switch lanes? Will the driver slow down?” Carrick said. “Moreover, what is the effect on the overall traffic flow and roadway capacity?” Something so innocuous, repeated hundreds of times each day by police officers, rarely prompts such critical thinking. But that is precisely what makes Carrick a unique law enforcement manager, and an even more unique graduate student.

# Spotlight

## CARRICK

Carrick hopes to compare the results of the data collected during his doctoral study with roadway traffic data stored in the UF/FDOT Central Data Warehouse, a clearinghouse for traffic data. The UF/FDOT Central Data Warehouse is a project that was funded by the FDOT and the UF Center for Multimodal Solutions for Congestion Mitigation (CMS). The project was completed earlier this fall under the direction of Kenneth Courage, a professor emeritus at UF.

“Combining and analyzing the two sets of data is where the expertise of the faculty and my research meet,” Carrick said. “The faculty at UF have a strong background and national reputation in the field of highway capacity and traffic flow theory.”

### The lifelong learner

Duty as an FHP manager is demanding, but Carrick is diligent about attending academic and other related functions at UF. He is very active as a graduate student in the transportation program at UF. In addition to several TRB presentations, he has spoken in UF graduate and undergraduate classes and also at a symposium sponsored by the CMS.

“The academic environment is so positive and encouraging,” Carrick said. “All of the professors at UF’s transportation graduate program are extremely supportive, and I have been able to work with each in the classroom and on projects. Dr. Washburn has been my mentor since day one in the master’s program back in 2004, and he has always encouraged me to pursue my dreams and attain excellence.”

The feeling is mutual for Scott Washburn, an associate professor in the transportation program at UF. He shares his perspective on Carrick.

“Grady brings a wealth of experience in law enforcement to the table,” Washburn said. “He often has unique insights and perspectives on the effect that law enforcement activities have on traffic operations and safety, as well as an excellent understanding of how different driver and vehicle characteristics can affect traffic operations and safety.”

Washburn said collaborating with Carrick has opened the door to exciting new research initiatives that otherwise might have been very difficult or impossible to pursue. Washburn currently serves as Carrick’s doctoral program adviser.

A lifelong learner, Carrick is not new to graduate studies. In 1997, he completed a Master of Public Administration (MPA) at Florida International University. Carrick also received a bachelor’s and master’s degree in Criminal Justice from the same institution. He is a graduate of the prestigious FBI National Academy, a three-month executive program in Quantico, Va., credited by the University of Virginia.

### Life, happiness and family

On his time off from work and school, Carrick makes time for his family. He decompresses by catching his favorite shows on TV and doing yard work. He also enjoys searching toy stores for the latest Matchbox cars with his 3-year-old son, Jacob. Recently, Carrick and his wife, Carla, welcomed a new addition to their family – Joshua Grady Carrick, a healthy 9 lbs, 4 oz baby boy born on Sept. 29.

“I’ve spent most of my adult life climbing the professional ladder and collecting degrees as a part-time student,” Carrick said. “Starting a family at 44 makes me a late bloomer, but I find that I am more settled, secure and mature than I was 20 years ago. I can’t wait to see both of my boys grow up and look forward to being a part of that.”

As far as advice for fellow or prospective transportation graduate students, Carrick offers, “Be an effective communicator and always try to help other people be successful. If the people around you are successful, then you likely will be too.”

# TRIP 2009

*This summer, four students were chosen to participate in the CMS's Transportation Research Internship Program (TRIP). Here is their background and plans for the future.*



## AMY CHOW

CLASSIFICATION/MAJOR: Senior, civil engineering  
TRIP ADVISER: Siva Srinivasan, Ph.D., assistant professor  
PROJECT TITLE: Tour Generation Models for Florida

What did you like most about TRIP?

TRIP made it possible to develop close working relationships with professors in the Transportation Engineering Department and to conduct research work in the form of an internship in a relaxed atmosphere. It was also a great learning experience and perfect for undergraduates who are considering graduate school in the future.

What did you like most about working on your project?

I was able to learn a lot about transportation planning and travel demand modeling.

Is graduate school in your future?

Yes.

What are your hobbies?

I like to run, cook, play sports, watch movies, go shopping and travel.



## HEATHER HAMMONTREE

CLASSIFICATION/MAJOR: Senior, civil engineering  
TRIP ADVISER: Scott Washburn, Ph.D., P.E., associate professor  
PROJECT TITLE: Two-Lane Highway Simulation Feature in CORSIM and FREEPLAN

What did you like most about working on your project?

I liked learning how to read C# code and learning a lot about all types of interchanges.

What did you like most about TRIP?

I liked doing the presentation on the projects.

Is graduate school in your future?

I will have four graduate classes already done by the end of the fall semester and have already applied, so hopefully, yes.

What are your hobbies?

I like being on the Steel Bridge Team; watching football, baseball, and basketball; playing sports; and cooking. Go Gators!



## YASHVI PATEL

CLASSIFICATION/MAJOR: Junior, civil engineering  
TRIP ADVISER: Lily Elefteriadou, Ph.D., professor  
PROJECT TITLE: Types of Interchanges & National Highway Capacity Manual 2010

What did you like most about TRIP?

Research on National Highway Capacity Manual 2010, Excel spreadsheet problems

What did you like most about working on your project?

Great advising and graduate student help

Is graduate school in your future?

Yes.

What are your hobbies?

To learn new things, read, to learn computer software

# CHASE WILKINSON

CLASSIFICATION/MAJOR: Junior, civil engineering

TRIP ADVISER: Yafeng Yin, Ph.D., assistant professor

PROJECT TITLE: Robust Signal Timing for Arterials using day-to-day Demand Variations and NCHRP 3-96 Analysis of Managed Lanes on Freeway Facilities

What did you like most about TRIP?

I really enjoyed getting to know Dr. Yin and some of his graduate students (Lihui Zhang in particular) and what projects they were researching. I also enjoyed the summer transportation seminar series so that I could also learn what the other interns, graduate students and professors were working on. It also gave me a great insight into what graduate school may be like for me, and what I could expect to do when I work on a research project.

What did you like most about working on your project?

For the first project, I really enjoyed working with CORSIM and seeing how transportation engineers simulate roadway conditions and signal plans when they do not have the ability to test them in the field. For the second project, I really enjoyed the freedom I had in exploring all the High-Occupancy Toll (HOT) lanes that are currently in use in the U.S. and seeing how different each facility is managed and tolled. Each situation was really unique and had very innovative ideas and technologies to improve tolling and hopefully encourage carpooling.

Is graduate school in your future?

I do not know for sure yet, since I have about a year to apply, but this experience has definitely helped me to understand what I could be doing in graduate school and whether I could see myself in that position.

What are your hobbies?

I really enjoy reading, running, and working with UF's Habitat for Humanity club.



## STUDENT AWARDS

Jessica Alvarez received the Jack R. Gilstrap Scholarship on October 5, 2009 and a check for \$4,000 from the American Public Transportation Foundation (APTF). Alvarez is currently pursuing a master's degree in the Transportation and Urban Planning Concurrent Degree Program at the University of Florida. Her advisor is Ruth Steiner, Ph.D., associate professor, Department of Urban & Regional Planning.

Xiaoyu Zhu received the Anne Brewer Scholarship on December 8, 2009 and a check for \$2,000 from the Intelligent Transportation Society (ITS) of Florida. Zhu is a doctoral student in the transportation program at the University of Florida. Her advisor is Siva Srinivasan, Ph.D., assistant professor, Department of Civil & Coastal Engineering.

Congratulation to both students!



Jessica Alvarez



Xiaoyu Zhu

# Q&A WITH LINDA WATSON CEO, LYNX

*Linda Watson is a member of the CMS's  
External Advisory Board*



What was your career path to your current position?

I started my career at the Fort Worth Transportation Authority as an Administrative Assistant to the General Manager. After three months on the job, he approached me about learning all aspects of transit with the end goal of running a transit system one day. He explained that there would be a large number of retiring General Managers, creating a leadership void. He believed that I had the skills and potential for running a system. I liked the idea and by the time I left the agency, I had either worked in, or been exposed to, every department and function at the transit system. I even drove a bus on every route in the city in training! That kind of practical experience in all areas of transit prepared me for the role I currently have as CEO at LYNX.

What has been the most rewarding experience of your career?

The Transportation Research Board (TRB) Executive Committee elected me Chair two years ago, and that is something I'm really proud of. The people who elected me are my peers and nothing reinforces the feeling of confidence like being recognized by your peers. The TRB is one of, if not the most, distinguished and recognized organizations for transportation research in North America. It is respected worldwide. Their multi-modal work has helped me learn so much about all forms of transportation at a time when transportation is at the top of the regional and national agenda. It has been a truly rewarding adventure.

What is the most challenging aspect of your job?

I fight the love affair with the automobile every day. I also compete for attention from local governments that already have overloaded agendas. That takes patience, relationship-building and perseverance.

What are the major transportation challenges in Florida?

There are three very big transportation issues that need to be addressed: congestion, dedicated funding for transportation and the idea that building more roads will cure all our transportation ills. Many cities around the country are significantly ahead of us in dealing with congestion. They have made considerably more progress than we have on local rail projects that ease congestion and funding issues that support transit. We can't continue to lag behind places like Atlanta, Dallas and Portland in providing public transit and hope to stay competitive economically.

The politics of securing dedicated funding has been very difficult, particularly over the last two years. We must demonstrate

that, as a state, we can successfully deliver commuter rail to our communities – or we won't be able to compete for the billions of federal dollars available for high-speed rail. As DOT Secretary Ray LaHood said in Orlando recently, "missing out on high-speed rail today would be like Florida missing out on the national highway system when it was built over 50 years ago."

The other major challenge for our state is the belief that more roads mean less traffic. Los Angeles, Atlanta and Houston are three of many examples that challenge that belief. Having said that, I have seen a significant shift among important stakeholders on this issue. FDOT is becoming aggressively more multi-modal. People moving here from northeastern cities, where transit is a way of life, are giving us momentum for non-highway solutions. And there are also many people who do not want to "pave over paradise" or see us become the Los Angeles of the east coast.

How can we overcome those?

I believe what we need most is more active support from business and political leaders and grassroots education for everyone. People need to know the facts on what it costs to build a mile of highway and compare that to the economic and environmental value of transit. We are making great progress on this in Central Florida. Orlando Mayor Buddy Dyer has been tireless in his efforts to get commuter rail (SunRail) on track. Jacob Stuart, CEO of the Orlando Partnership, has successfully

educated the community and the business leaders about the importance of commuter rail. The time has never been better or the future brighter for more transit in Central Florida, as well as the [whole] state. In the end, building our infrastructure and improving our transportation network is about jobs and economic growth, which isn't a hard sell anywhere.

How do the demographic changes in our older population and the migration trends in Florida impact our transportation system?

According to the U.S. Census Bureau, by 2030 more than one in every four residents in Florida will be age 65 and older. We owe it to them to provide transit options that make economic and practical sense. At some point, all of them will become transit-dependent. They need choices on how to get to the doctor, the supermarket, church or just another friend's home. Right now, we don't have enough viable choices for them. As more baby boomers hit the senior circuit, I predict the transit industry is going to hear quite a bit more about this issue.

What is being done on a systems level to provide alternative transportation options for older adults to ensure independence in community mobility?

Most transit agencies provide a paratransit service, which generally is door-to-door van or coach service. However, it is VERY expensive to operate. The average paratransit ride on our system costs just under \$30 per passenger. LYNX is developing a community circulator system that will improve service and reduce costs. It is a hybrid system, something that combines the best features of paratransit and regular fixed-route service. Anyone needing service in a designated area can call two hours in advance, get picked up at their home, and taken anywhere in the service area or to a fixed-route location where they can transfer to regular bus service. It's convenient, safe and very popular with seniors.

ITN America is national non-profit transportation system designed specifically for our aging population. In many communities, they allow older people to trade their own cars to pay for rides, and provide volunteer drivers to store transportation credits for their own future transportation needs

How do you see the transportation industry, especially transit, in 10 years and in 50 years?

High-speed rail is the next big thing. It is clean, safe and time-efficient. Trains can reach 200 miles per hour and higher. But many metropolitan areas, like Orlando, are going to have to build the local transit infrastructure, including commuter rail systems, to make this feasible. That way, when someone takes the high-speed rail from Miami to Orlando, for example, they can step off their train, get on commuter rail or another mode, and be at their final destination in a few minutes – without ever having to use an automobile!

What transportation innovation do you think would be most beneficial to reduce congestion?

Dedicated bus lanes on major highways and major arterials would be the most beneficial innovation for transit. If people sitting in their cars watched the bus run by them in

a dedicated lane and get signal priority at intersections, they would jump out of their cars and ride transit to work every day. Another factor that causes congestion is traffic accidents. Embedded chips are coming on cars and buses that will read traffic lights and automatically stop vehicles when the light changes. These same chips will sense pedestrians crossing the street and automatically stop. It will also steer vehicles to more efficient routes to get around bottlenecks and on to their final destination. This will dramatically reduce traffic accidents and the inevitable congestion they create.

How have technological advancements (in telecommunications, vehicle technology, etc.) affected the transit industry, and do you see any such changes due to technology in the foreseeable future?

Technology advancements are why it's getting easier to persuade people to give up their cars. We now have GPS systems that can tell us exactly where our bus is and exactly when it will arrive. We have mobile and wireless communications that allow us to have real-time information about schedules and itineraries at our fingertips. Cashless fare systems, video cameras on buses, and vehicles that self diagnose mechanical problems are all here and improving every day. We even have a machine that we call "The Germinator" that kills viruses in all of our vehicles so you don't have to worry about getting sick when you travel. All of these technologies are transferable to rail systems and the two modes can work hand-in-hand to make travel easier on people and the environment

What will it take to make the United States a more pro-transit society?

The straight answer is high gas prices. That could happen because of increased taxes on gas or increased costs associated with buying foreign oil. There are discussions about "user fees" for automobiles, forcing drivers to pay by the mile to use their cars, but high gas prices are really the surest way to force people to look at transit. It would be great if that were to happen, for all the money generated by increased gas taxes dedicated to public transportation alternatives. We do know this: The current funding mechanisms can't support maintenance of our highway system. It's also worth noting that city planners are pushing dense population centers. In both cases, public transit won't just be a convenient alternative, it will be the practical solution.

How can the University Transportation Centers (UTCs) contribute to increased transit use and a more multimodal society?

The transportation workforce is facing a critical shortage of well trained and passionate professionals. UTCs are going to fill that gap. We need more leaders who are better prepared to address the nation's need for safe, efficient and environmentally sound transportation of people and goods. UTCs can give us the research, facts and data that convince policy makers that there are solutions to the never-ending problem of congestion. Your input is going to have an immediate and immense impact on our industry.



# OUR STAFF...

**DONA MOSS** just celebrated 20 years of service at the University of Florida. For her dedication, service and loyalty, she was presented with a commemorative pin and honored with a reception in the Department of Civil & Coastal Engineering, where she has worked for the past 14 years.

Upon receiving her 20-year-pin, she made sure to thank the academy, “because without you, I would not be here,” she joked.

Moss perhaps has one of the most important and busiest jobs in the department. She is the one who keeps the contracts and grants office in excellent shape. Tracking more than 200 grant-funded projects (and new ones each month), she monitors them closely, from a project’s initiation to its ending date. She has more than 14 years of knowledge in contracts and grants and is an excellent resource to the CMS and to the Department of Civil & Coastal Engineering.

“Assisting with the budgets and preparing the proposals is part of my job and is something I have tried to master over the years,” Moss said. “I want to make sure that the proposal submissions go as smoothly as possible for the faculty as well as for me. We certainly try and get important issues taken care of right away and keep a proactive approach to the maintenance of each project.”

Walk into Moss’ office, and you’re greeted with stacks of documents neatly placed on her desk, along with Gators fanfare displayed on her walls. She claims not to be very organized, but we don’t buy that – her performance speaks volumes of her superb ability to keep the multitude of projects in order.

“I’m really picky about details,” Moss said. “I re-check the proposals a lot. I just do my best to try and get what needs to be done in a very professional and organized way, even though if you look at my desk, it is not very organized. It is somewhat organized in my mind.”

For the past three years, Moss has worked with the CMS, and has done a great job of keeping the center’s fiscal matters on

track. During the center’s request for proposal period, Moss works with civil and coastal engineering faculty during the proposal submission phase, specifically reading through the RFP, making sure the guidelines are being followed and assisting with budgetary matters. The goal is to ensure a smooth submission – there’s a lot of processing to be done, once all the information is received from the faculty, she said.

“When I talk to the faculty about preparing a proposal, I try to stress the importance of starting early and getting all the information together on time,” Moss said. “I feel my job is to assist the faculty with as much of the administrative issues as I can, but to also make them aware of any concerns regarding their research along the way. Between all of us working on the projects, my goal is to be problem-free.”

And problem-free she does keep them, which gives her time enough for her passion: Gators football and family time. You know it’s game week when she is decked out in orange and blue come Friday. This is a personal tradition she has honored for years. Moss never tries to miss a game and would one day like to meet the team’s famed quarterback, Tim Tebow.

“All I have to say is ‘Go Gators!’” Moss said. “My family and I love the Gators. I grew up watching the games with my parents, and I’ll always be a Gator. The Gator Nation is an awesome place to be.”

Twenty years in the Gator Nation, and she is still going strong. Thank you, Dona, for continuously providing the CMS and the Department of Civil & Coastal Engineering with excellent service.



# ASK THE EXPERT!

Do you have a transportation-related question or concern? If so, we want to hear from you. Your question will be assigned to our experts and responses will be posted on the CMS Web site, and a selected few will be published in our newsletter. For more information, visit: [http://cms.ce.ufl.edu/contact\\_us](http://cms.ce.ufl.edu/contact_us).

*(Questions and answers printed with permission.)*

Submitted by: Rod Warner, The City Alliance of Sarasota, Fla.

Subject: Roundabouts and Economic Development Outcomes

Date: 8-24-2009

Question: What evidence do you have of economic development outcomes following and adjacent to the installation of modern roundabouts, particularly multi-lane roundabouts?

Response: (Provided by Dan Burden, Principal and Senior Urban Designer, Glattig Jackson Kercher Anglin with supporting commentary by Ian Lockwood, Principal and Senior Transportation Engineer, Glattig Jackson Kercher Anglin)

## Dan Burden:

There is strong and compelling evidence that well-placed roundabouts do much more to spur on economic and social exchange at levels well beyond a traffic signal's performance at the same location. The Clearwater Beach [Fla.] Roundabout compressed seven signalized intersections into one 2-lane roundabout, which made it possible for as many as 15,000 additional beach goers to get to the beach, spurring a new problem – a need to build massive new levels of parking. In a tight space, roundabouts can deliver more people to a popular destination.

More compelling, in a more average situation, the replacement of four signalized intersections along a strip in Golden, Colo., allowed the merchants in each of the stores to increase their sales during the last recession, the only place in all of Colorado reported to have increased sales.

More recently, in Hamburg, N.Y., the replacement of all five signals with roundabouts on their main street, along with improvements to the main street, has raised their popularity and status among the 12 villages from low in the order, to the No. 2 position. Part of this rise in popularity was how hard everyone worked together to

make their village a better place, but the quieter, more peaceful, less aggressive, driving behavior has added to the charm, dignity, status and income stream of this village.

Finally, the Bird Rock (La Jolla Boulevard), San Diego, Calif., series of five roundabouts have made a dramatic change in the income stream, and the number of new businesses moving into this now popular corridor. All of the businesses – from small coffee shops to large brand new drug stores – are reporting pleasure to extreme pleasure with the results.

## Ian Lockwood:

Roundabouts were usually part of an ensemble of changes to the street that added value to a community. Normally, the value uplift is a result of the advancement of “community” functions along and across the street (such as walkability, safety, better access, on-street parking and improved aesthetics being the key benefits). That being said, a singular change from a signalized intersection to a roundabout normally increases walkability, safety, access and aesthetics locally. Thus, even on its own, a roundabout adds value to a community. Furthermore, if turn lanes were present at the intersection prior to the conversion, then the roundabout does not need turn lanes and, consequently, the on-street parking supply can increase if desired by the community. Lastly, if a community realizes the benefits of a roundabout, they usually recognize the benefits of other supportive street modifications, too.





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