Annual Report 2008-2009

research education outreach

METRANS develops and examines solutions to the transportation problems of major metropolitan areas using a multi-disciplinary approach that blends engineering and the social sciences.

METRANS
Transportation Center
USC | CSULB

"Never doubt that a small group of thoughtful people could change the world. Indeed, it is the only thing that ever has."

Margaret Mead

Table of Contents

Cover Photo credit: John Robinson

Director's Message

We are pleased to present this 2008-09 report of our accomplishments. This has been a very special year for METRANS, as it marked our 10th anniversary. We celebrated with a series of special events. It was both gratifying and exciting to take this opportunity to recognize what we have accomplished since 1998. You will see many examples in the following pages. We are particularly grateful to our sponsors; without their support we could not have succeeded. Caltrans merits special recognition for providing the full UTC match every year since our inception. Highlights of this year include several awards to METRANS faculty and students, our 10th and final Town Hall in its current format, and several collaborations with other UTCs and universities. We continue to build on our strengths and leverage our resources to achieve our goal of excellence in research, education and outreach.

Genevieve Giuliano
METRANS Director

Genevieve Giuliano
METRANS Director

1998	METRANS established as part of TEA-21.
1999	First annual METRANS research conference; First annual Town Hall Meeting; Launch of Global Logistics Specialist (GLS) Program.
2000	Transportation In The Next Millenium, 3-day expo for high school students; Launch of METRANS website.
2001	Building Bridges newsletter first published; METRANS co-hosts FHWA Freight Operations Workshop.
2002	METRANS wins USDOT UTC competition; Debut of Masters of Arts in Global Logistics program; METRANS organizes AASHTO Symposium on Transportation, International Trade and Economic Competitiveness.
2003	METRANS News established; Development of "Monitoring The Ports" Applied Research Program.
2004	Launch of GLS Online; METRANS organizes Alameda Corridor conference.
2005	Launch of new METRANS website; 3-day Goods Movement Workshop developed for Caltrans; Sponsorship of high school Math, Engineering, Science Achievement (MESA).
2006	METRANS wins USDOT Tier 1 competition; National Urban Freight Conference established; Town Hall video wins award from Alliance for Community Media; research featured at Summer TRB Conference.
2007	Launch of freight testbed activity; GLS Outstanding Program award named by University Continuing Education Association; Development of air cargo workshop for COG.
2008	10th Anniversary year; launch of METRANS Transcast and Monitoring the Ports Timeline; papers from the first National Urban Freight Conference in special issue of Transportation Research Part E.

Summary of Accomplishments

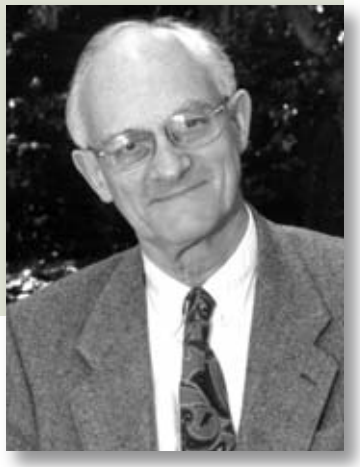
This Annual Report covers the tenth year of METRANS. Here are some of the highlights of the year's accomplishments.

From its first year allocation of about $294,000, METRANS now funds **over $1 million in annual research.**

Research

In response to the 2008-09 RFP, 14 projects were approved with total funding of about $1.1 million. Principal and Co-Principal Investigators represented nine different academic departments, reflecting the multi-disciplinary strength of the METRANS research program. We have now funded nearly one hundred researchers, from more than twenty departments.

Famed Engineer Highlights METRANS Celebration



Prof. David Billington

Princeton University

Structures shape society – and dams may have shaped Los Angeles more than any other structure. Such was the provocative thesis of David Billington, the keynote speaker at the METRANS 10th Anniversary Dinner. Billington compared New York City with Los Angeles. "I'll start with two great American symbols," he noted, "George Washington Bridge and Hoover Dam." How engineers have transformed society is his specialty. He studies engineering innovations and traces the history and role of individual engineers. In his book *Power, Speed and Form: Engineers and the Making of the 20th Century,* he describes what he considers to be the key engineering innovations of the early 20th century. Several are in transportation: oil refining, mass production of automobiles, bridge design, and air transport. A famed chronicler of bridges, dams, and other engineering feats, Billington holds Princeton's Gordon Y.S. Wu Chair of Engineering. He said the transportation field overlooks research on maintenance. As evidence, he cited the recent collapse of a Minneapolis bridge and New Orleans levies. "Billington has a totally different 'take' on what we do," said METRANS Director Genevieve Giuliano, "which is why I invited him. He has a way of thinking about the big picture."

METRANS 10th Anniversary

2008-09 was a year of celebration for METRANS. Starting out as little more than an ambitious idea among a handful of faculty, METRANS has become a nationally recognized center for innovative research, professional development and outreach. We celebrated our accomplishments in several ways, including a gala dinner featuring David Billington of Princeton University, renowned for his research on the role of engineering in the transformation of society, as well as a new 10th anniversary logo that branded all our activities, including this report.

Faculty Awards

One of METRANS' great strengths is the excellence of its faculty. Seven faculty received national or international awards, five faculty received university awards, and one was named to an endowed chair. Recipients of national and international awards include Peter Gordon (USC), Ramesh Govindan (USC), Petros Ioannou (USC), Najmedin Meshkati (USC), Dowell Myers (USC), Alice Parker (USC) and Detlof Von Winterfeldt (USC).

Student Awards

METRANS students also continue to win many awards. This year we take particular note of dissertation awards:

Anupama Mann: Gill-Chin Lim Award, Best Dissertation on International Planning.
Jiyoung Park: USC John Dychman Award, Outstanding Dissertation in Planning.
Yiming Wang: Tiebout Prize, Western Regional Science Association.

Outreach

We reached a milestone with the 10th Annual Town Hall Meeting. After much discussion with stakeholders we decided that it was time to retire the Town Hall in its current format and develop a new signature outreach event. The 10th Town Hall was a great success and a wonderful way to end the series, attracting an audience of over 800 drawn from port management, industry, labor and the local community.

This year also marked more emphasis on collaboration and leveraging of resources. METRANS co-sponsored several activities, including four conferences and one new professional development effort, the Goods Movement Leadership Academy.

The remainder of this annual report provides a detailed description of METRANS activities in research, education, professional development, and outreach and communications.

Town Hall Meeting
More than 800 participants from throughout the region attended the 10th Annual meeting, held in Long Beach, California.

The METRANS Advisory Board, a panel of high-level industry practitioners from the public and private sector, has provided critical support and guidance throughout the history of METRANS.

Director Genevieve Giuliano smiled as she recalled a memorable contribution. "We were presenting our mission statement and Joel Anderson, then Vice President of the California Trucking Association, said 'I guess for you university types, it is OK, but there is no real person in the world who could understand it!' "

She laughed, "So, I cut it in half, and I credit him with the clarity."

Today, Anderson is President of the International Warehouse Logistics Association based in Chicago.

Mission

Solve metropolitan transportation problems through multidisciplinary research, education and outreach.

METRANS Theme

The theme of this Center is, "transportation within large metropolitan areas." METRANS develops and examines solutions to the transportation problems of major metropolitan areas using a multidisciplinary approach that blends engineering and the social sciences. Increasing attention is being paid to "mega-cities" around the world – very large agglomerations – where infrastructure, governance, social and environmental problems are particularly severe. METRANS is especially well positioned to contribute to mega-city transportation research, given its nearly 10 year history of focus on large metropolitan areas.

Our theme defines all aspects of the METRANS program. We conduct research in four topical areas: goods movement and international trade, urban mobility, infrastructure, and safety and security. All are oriented specifically to metropolitan transportation problems. We address many modes: highway (freight and passenger), rail (freight and passenger), bus transit, and non-motorized (pedestrian and bike). We also address surface transportation linkages with ports, airports, and inter-modal facilities. We often use the Los Angeles Region as our laboratory, and our education programs reflect an urban perspective in approach and subject matter. METRANS outreach and tech transfer are informed by our research agenda and are distinctly urban in orientation.

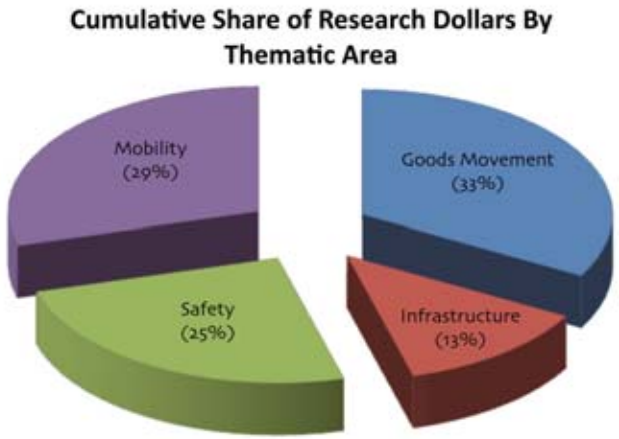
The METRANS theme is fully consistent with the USDOT Strategic Plan, the USDOT Research and Innovative Technology Administration's Transportation Research Development and Technology Strategic Plan, and the Federal Transit Administration's Strategic Plan.

METRANS Research

METRANS conducts research in four thematic areas: **goods movement and international trade, urban mobility, infrastructure, and safety and security**.

Goods movement and international trade is concerned with how crowded and congested cities can efficiently move goods and provide transportation infrastructure to support economic growth. Productivity issues associated with international goods movement are of particular interest. This includes intermodal facilities, port operations and ground transportation within metropolitan regions. Productivity is studied in a variety of ways, such as new technologies that improve cargo handling, information technology to optimize the allocation of resources, and policies that will promote efficient goods movement. This thematic area also includes safety and environmental aspects of goods movement.

continued on next page



METRANS Research continued

Mobility of urban populations addresses mobility problems in large, decentralized metropolitan areas, where many residents do not own automobiles, transit service does not reach all areas and where congestion on roadways is a major problem. Research topics include methods for improving the mobility and accessibility of disadvantaged populations and innovative ways that buses and other vehicles can be used to deliver high-quality transit service. Areas of interest also include improvements in the configuration of public transit services, delivery and efficiency of services, and organizational structure/management of services.

Highway infrastructure is concerned with ensuring and improving the supply of transportation services delivered in metropolitan areas, with an emphasis on providing self-sustaining, environmentally compatible transportation infrastructure that is durable and efficient and that requires fewer human, economic, and environmental resources to produce, operate, and maintain. This area includes research on materials, infrastructure components, systems, and policies.

Safety and security addresses risks associated with large metropolitan areas, where the concentration of modal traffic presents risks to pedestrians, drivers, and transit passengers, and where the concentration of major transportation facilities as well as population now generates significant vulnerability to both natural and man-made disasters.

New Research Projects

In response to the 2008-09 RFP we received 37 proposals. The METRANS RFP solicits proposals in any of the four thematic areas. An outside peer review process is used to evaluate proposals, and final selections are made by the METRANS Executive Committee and approved by Caltrans. This year 14 projects were selected, with total funding of $1,170,000. See Table 1. Funded projects were well distributed across thematic areas, with four each in goods movement, urban mobility, and safety, and two in infrastructure. Descriptions of the funded projects follow.

Table 1: METRANS 2008-09 Research Projects

Area	School	PI	Co-PI	#	Project Title	Funding
Goods Movement	CSULB	Seiji Steimetz	Steven Yamarik	09-01	Accident Rates and Safety Policies for Trucks Serving the San Pedro Bay Ports	$78,441
Safety	USC	Martin Krieger	Ramesh Govindan	09-05	Ten Thousand Eyes on California's Streets, Roads and Infrastructures	$79,650
Goods Movement	USC	Katharine Moore	Andrea Polidori Constantinos Sioutas	09-07	Toxicological Assessment of Particulate Emissions from the Exhaust of Old and New Model Heavy and Light Duty Vehicles	$90,000
Goods Movement	CSULB	I-Hung Khoo	Tang-Hung Nguyen	09-09	Study of the Noise Pollution at Container Terminals and the Surroundings	$89,243
Mobility	CSULB	Fei Wang	Xiaolong Wu	09-11	Microscopic Model of Road Capacity and Risk for Highway Systems in Port Based Metropolitan Areas	$34,852
Safety	CSULB	Chin Chang		09-13	Fiber-Optic Smart Structures for Monitoring and Managing the Health of Transportation Infrastructures	$89,562
Infrastructure	CSULB & USC	Ali Nowroozi	John Kuprenas	09-15	A Framework for Continuous Project Delivery Improvement at the State Transit Agency	$92,627
Infrastructure	USC	Suya You	Ulrich Neumann	09-17	Rapid Extraction and Updating Road Network to Caltrans Database	$90,000
Mobility	USC	Sven Koenig		09-19	Using Auctions to Allocate Transportation Requests for Demand Responsive Transit Systems	$90,000
Safety	USC	Lisa Schweitzer		09-21	No-Notice Evacuations, Urban Form and Environmental Injustice; An Exploratory Study	$89,994
Goods Movement	CSULB	Kristen Monaco	Guy Yamashiro	09-23	Transportation Forecast for Southern California	$74,299
Mobility	USC	Cyrus Shahabi		09-26	A Geospatial Framework for Dynamic Route Planning Using Congestion Prediction in Transportation Systems	$90,000
Safety	USC	Jean-Pierre Bardet	James Moore Petros Ioannou	09-29	Risks and Recoveries from Extreme Disruptions in Freight Transportation System in a Megacity: Case Study for the Greater Los Angeles Area	$90,000
Mobility	USC	Gary Painter		09-30	Spatial Mismatch and Transit Choice Among Immigrants	$90,833

Project 09-01
Accident Rates and Safety Policies for Trucks Serving the San Pedro Bay Ports
Seiji Steimetz, Steven Yamarik, CSULB

Roughly 2,400 accidents occurred within the last year on California's Interstate 710 serving the Port of Long Beach. Of those, about 30% directly involved trucks, in addition to those that may have been caused by debris shed from poorly maintained trucks. In contrast, heavy trucks are involved in only 4% of all highway accidents for the nation as a whole. Should we specifically target port-related travel? If so, which policies are likely to be most effective?

A simple explanation for the large proportion of truck-related accidents on highways serving the San Pedro Bay Ports is heavy exposure to truck traffic. Others argue, however, that fierce competition among drivers serving the ports leads to inadequate maintenance expenditures and thus particularly accident-prone trucks. Indeed, about 87% of these drivers are independent owner operators with a median annual income of $25,000 after truck expenses. As a result, it is argued that these independent owner operators cannot "afford" to adequately maintain their trucks at current pay rates.

This project has two primary objectives. First, it will empirically investigate if trucks on highways serving the ports are indeed more dangerous than on other highways. Second, the project will evaluate two policies proposed to increase truck maintenance by independent owner operators: (i) increased pay (i.e. higher freight rates) and (ii) direct maintenance subsidies.

Project 09-05
Ten Thousand Eyes on California's Streets, Road and Infrastructures
Martin Krieger, Ramesh Govindan, USC

We intend to explore the development of technologies that will dramatically increase the level of video surveillance of our transportation network and its infrastructure. Our technology leverages two key ideas. First, the ubiquity of cell phones permits citizen sensing, in which ordinary citizens can report accurate and timely information using these net-connected mobile devices. Second, the emergence of video capability allows such reports to contain rich visual detail that might otherwise not be available.

We intend to design and develop a real-time information system that allows for dense and widespread surveillance, but centralized evaluation and comparison. Essentially, our system allows citizens to take videos of ongoing traffic and of the transportation infrastructure, and automatically, and almost instantaneously, transmit them to a centralized server. Thus, truckers might report on commercial goods movement problems, and ordinary citizens might capture problems of safety and security. These videos are annotated with position information (through GPS), and they are also time-stamped. Our project leverages our past research efforts in embedded networked sensing, our previous use of video-cellphones as sensors, and our collaborative social science and engineering and computer science capabilities.

Martin Krieger
Professor, USC School of Policy, Planning and Development

"Ten Thousand Eyes" Research to Increase Security Via Cell Phones

A newly funded METRANS research project, "Ten Thousand Eyes on California's Streets, Roads, and Infrastructures," takes advantage of ubiquitous cell phones by turning them into a widespread safety monitoring system. Cell phone and smartphone owners would load the special software, called "vcaps," on their phones, then capture images of emergencies and send them to authorities for response.

The System. Principal Investigator Martin Krieger of USC's School of Policy, Planning and Development notes, "The system was originally meant to document urban life. We envision it will also be used for transportation security at places such as airports and train stations, and then it will be used by law enforcement personnel operating within standard legal protocols." Krieger and research partner Ramesh Govindan, who also serves as chair for the Department of Computer Science in the USC Viterbi School of Engineering, have spent two years developing the software. Said Krieger, it is a "robust and reliable and energy-efficient phone software, and (has) a useful display with secure privacy protection." At the receiving end, security personnel using a centralized server would examine all the photos or videos sent in – potentially hundreds for a major incident – in order to respond appropriately.

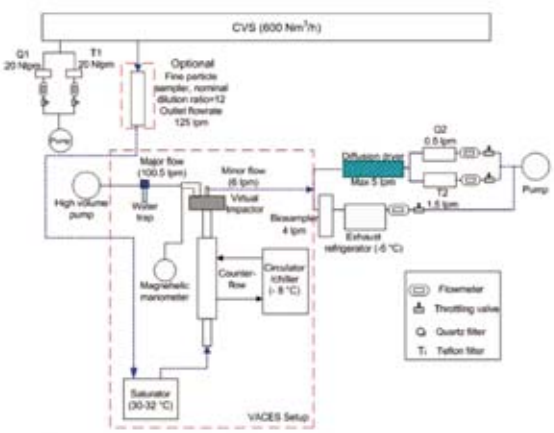
Project 09-07

Toxicological Assessment of Particulate Emissions from the Exhaust of Old & New Model Heavy & Light Duty Vehicles

Katharine Moore, Andrea Polidori, Constantinos Sioutas, USC

The primary objective of this project is to develop an improved understanding of the factors affecting the toxicology of particulate exhaust emissions. Diesel particulate matter is a known carcinogen, and particulate exhaust emissions from both light-duty and heavy-duty vehicles are toxic. In this project, we aim to take advantage of extensive existing particulate exhaust emission samples collected in dynamometer facilities of heavy-duty diesel and light-duty vehicles using a variety of driving cycles, emission controls and fuels. These samples have been collected under existing research programs funded by the Southern California Particle Center through grants from the California Air Resources Board as well as on-going international research collaborations between our Particle Center and European Union (EU) investigators.

Emission controls range from none through compliance with the 2007 and 2010 EPA standards. Physical characterization as well as some chemical characterization of the California samples has already been completed. This project will allow chemical analyses on more samples – principally those from our European collaborators – to be completed as well as biologically-based toxicological assessment of all the available samples. These data, in combination with knowledge of the physical exhaust emission properties, emission control level and driving cycle will permit us to gain insight to the expected toxicological impacts of changes in the vehicle fleet and planned emission control strategies. Further these results will provide the ability to evaluate the effect of fleet turn-over on the air quality impacts in the Los Angeles basin from the heavy-duty diesel vehicles engaged in goods movement.



Project 09-09

Study of the Noise Pollution at Container Terminals and the Surroundings

I-Hung Khoo, Tang-Hung Nguyen, CSULB

Noise mapping is a method of presenting complex noise information in a clear and simple way on a physical map. To generate the noise map, a noise model will be created to take into account all noise sources at the port. Compared to existing noise studies at the port, which are limited to measuring the noise at a few selected locations, the noise mapping approach is more comprehensive and will show the noise distribution throughout the area. In addition, the noise model can also predict the noise levels when the operational information such as the level of activities changes. The noise maps generated from this study will be used to analyze the noise impact and identify noise hot spots in the port and surroundings. Based on the noise analysis, mitigating measures will be recommended if the noise exceeds the relevant guidelines or regulations.

Project 09-11

Microscopic Model of Road Capacity and Risk for Highway Systems in Port Based Metropolitan Areas

Fei Wang, Xiaolong Wu, CSULB

In this project, a unique microscopic simulation model is proposed to assess the highway capacity and risk measure when lane blockage is necessary. The model is devised for highway systems in seaport - based metropolitan areas, such as those surrounding the Ports of Long Beach/Los Angeles by specifically considering the impact of container trucks. ARENA software will be used in the design. Highway capacity is captured using percent time spent following (PTSF) and we also suggested a measure to capture the risk of collision during merging. Highway capacity and risk measure will be studied as a function of a variety of factors, such as effective length of lane blockage and cargo truck distributions, to name a few.

continued on next page

Existing sea-based ports are typically surrounded by major metropolitan areas, which results in movement of cargo containers through those areas. Mostly, transportation simulations do not address the level of risk associated with the design and usage of various highway resources. The proposed simulation model not only considers the impact of cargo truck on traffic congestion, but also suggests a way to assess the risk measure.

The results of this study will:

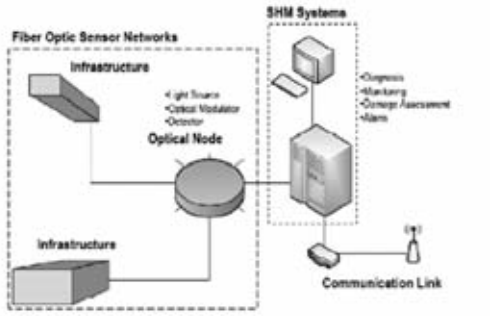
- provide suggestions for construction zone (lane closure) design.
- provide evidence to justify the impact of various proposals aiming to redirect the cargo truck traffic; be compatible with the ARENA optimization module, which could be added in the future to compare the economical efficiency of different container evacuation options to optimize the usage of current highway resources.

Project 09-13

Fiber-Optic Smart Structures for Monitoring and Managing the Health of Transportation Infrastructures

Chin Chang, CSULB

The problem to be addressed in this proposal pertains to the monitoring and management of transportation infrastructural health that is essential to safeguarding the lives of the general public living in major metropolitan areas. The proposed research project will investigate the feasibility and economics of a fiber-optic smart structure for the Transportation Infrastructural Health Monitoring (TIHM) system. The goal of the feasibility study primarily focuses on performance evaluation for various fiber-optic sensor technologies, design and analysis of conceptual smart panels, multiplexing and networking of fiber-optic sensors, and performance analysis of conceptual TIHM systems. The economics analysis may justify the cost-effectiveness of the proposed approach. The proposed fiber-optic smart structure for the transportation infrastructure may greatly improve public safety with significant maintenance cost reduction.



Project 09-15

A Framework for Continuous Project Delivery Improvement at the State Transit Agency

Ali Nowroozi, John Kuprenas, CSULB

As public agencies undertake various construction projects from simple resurfacing to complex bridge and tunnel projects, they experience numerous effective and ineffective management practices that can differentiate a *successful* from a *failed* project. To improve the project delivery efficiency for the rapid repair, rehabilitation, renewal, and retrofit of transportation infrastructure, we propose development of a framework and initiation of data collection and analysis for an internal process benchmarking study at the state level with the California Department of Transportation (Caltrans). The proposed model will be comprised of an automated data collection module, an interactive database, and a statistical analysis tool to analyze performance data and their linkage with the process data. The immediate product of this study will be a series of recommendations for best and worst management practices that can immediately be used by Caltrans managers to save hundreds of thousands of dollars in capital construction project costs and to improve schedule delivery of construction projects by hundreds of days. The long-term product of this study will be the framework and the associated tool which can be periodically populated by additional data to provide updated improvement recommendations instantaneously. The study can be also taken to a second level in the future to perform intra-agency benchmarking studies beyond Caltrans.

Project 09-17

Rapid Extraction and Updating Road Network to Caltrans Database

Suya You, Ulrich Neumann, USC

Creating and maintaining an accurate and up-to-date road infrastructure database is crucial to many transportation applications including transportation infrastructure management, traffic situational awareness, safety analysis, and mission planning and tactical decision-making for incident and emergency responses.

continued on next page

Project 09-17 continued

Nowadays, Intelligent Transportation Systems (ITS) continuously gain ground in transportation management. A digital topographic database is an essential part of the ITS, which requires accurate, high-density spatial models of road infrastructures. In addition, accurate road maps and databases are in high demand for travel planning, route guidance, and real-time travel navigation. However, current road infrastructure databases and the methods to produce such as databases are insufficient to meet these needs in terms of accuracy, confidence, completeness, and automation. The research goal of this proposal is to pursue a step change in the approach and technique for improving and extending the capabilities of creating, modeling and maintaining accurate and up-to-date road infrastructure models and databases for transportation managements and services. Our research efforts are to assess, define, and use the unique spatial and spectral characteristics of the new, advanced sensor techniques from aerial imagery and LiDAR for automated road extraction and road quality mapping.

Project 09-19

Using Auctions to Allocate Transportation Requests for Demand Responsive Transit Systems

Sven Koenig, USC

There is a need for a transit system that provides flexible service at a cost efficient price. Fixed-route bus transit systems are much more cost efficient than Demand Responsive Transit (DRT) systems, with an average cost per passenger trip of $2.19 and about $17.00 respectively. However, as an alternative to private automobiles, fixed-route bus transit systems have a major deficiency. The general public considers the service to be inconvenient because either the locations of the pick-up and drop-off points do not, or the schedule of the service does not, match the individual rider's desires (lack of flexibility). Also, the total time for a trip is perceived as being greater than that of a private auto and trips covering more than 10 miles require transfers between vehicles. This may explain the small number of people who use some form of public transit system to work (4.7 percent as reported by the 2000 U.S. Census Report).

DRT systems provide greater flexibility but are largely limited to specialized operations such as dial-a-ride service mandated under the Americans with Disabilities Act (paratransit DRT) since they tend to be much more costly to deploy as a general transit service than fixed-route bus transit systems. Thus, their deployment and operating costs need to be reduced to make them viable as a general transit service. We propose to use modern technologies to create DRT systems that are cost-efficient, distributed and adaptive, by exploiting the fact that buses are starting to be equipped with multi-way communication devices, on-board computers, sensors and data centers.

This proposed research is among the first initiatives to harness the maturing information infrastructure, especially ITS technologies, for transit applications. We strongly believe that the proposed research has the potential to spur the transit industry's migration towards real-time coordination to meet the future demands of modern urban transit networks.

Lisa Schweitzer

Cities have always fascinated Lisa Schweitzer. She attributes this to her small-town Iowa origins. As a youngster, she was drawn to the mystique of transportation, and how it could lead her to big cities. She tells it this way, "I was picking up litter with the sheriff of the small county where I lived and we were near Highway 20. I asked him where it went and he told me, and then I asked where did that road go. He said it was Interstate 80 and it went all the way to San Francisco." Enthralled, she wanted to visit California.

She is now one of the METRANS faculty. Among her more intriguing research topics is the incidence of hazardous materials spills. "Most spills are generated either onsite or within two kilometers of an intermodal facility," she notes. "People are starting to pay more attention to them because of the diesel trucks, train traffic, etc. When we talk about Homeland Security we are talking about environmental justice as well. The likelihood of new incidents is a function of previous incidents."

The safety risk information gathered from this study will be invaluable to planners. This information is now only available to risk specialists, for example the insurance industry. Schweitzer hopes to give planners the tools they need. She admits "the method I use, a Bayesian approach, will over-predict a little, but I'm making the argument that land-use planners should be taking into account all of this."

Project 09-21

No-Notice Evacuations, Urban Form and Environmental Injustice: An Exploratory Study

Lisa Schweitzer, USC

The first objective of the proposed research is to collect into one georeferenced data system all data on chemical releases from transport. Then it will be possible to examine the geography of evacuations caused by hazardous and toxic materials releases from 1990 to 2008. Distinctions will be made between minor and serious releases. Distinctions will also be made between spills that happen on intermodal or shipping sites, those that happened off-site and in-transit, and those that happened on-site.

The second objective of the study is to examine the socio-economic make-up of the groups and individuals who live next to those release and evacuation locations. In this way, it will be possible to compare whether evacuations have occurred in areas occupied primarily by groups with lower socioeconomic status both nationally and regionally in Southern California. Previous research has found that releases are disproportionately located in communities of color throughout the US. Disproportionate impacts on Latino communities from factories, intermodal facilities, and freeways have been documented extensively throughout Southern California, but as yet no studies have examined the distribution of hazardous materials spills that caused evacuations.

The final objective of the study is to examine the relationships between infrastructure, land use, and the likelihood of evacuation from a hazardous materials release. Previous research on hazardous materials has established that in addition to routing variables, land use is also a strong predictor of where spills will occur. This part of the study will contribute substantially to important contemporary debates about the safety and security of proposed new freight infrastructure throughout California.

Project 09-23

Transportation Forecast for Southern California

Kristen Monaco, Guy Yamashiro, CSULB

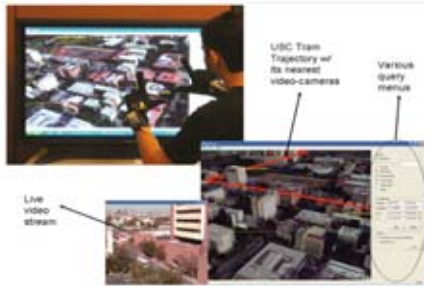
Though there are many forecasts of the U.S. macroeconomy, the regional economy of Southern California, and the volume and value of trade through the Ports of Los Angeles and Long Beach, there is no extant forecast that combines all of these components into one comprehensive forecasting model that links these interdependent forecasts. The goal of this research project is to develop such a model, and make the forecast data and results publicly available through a website that will be updated regularly.

Project 09-26

A Geospatial Framework for Dynamic Route Planning Using Congestion Prediction in Transportation Systems

Cyrus Shahabi, USC

In this proposal, we propose to extend GeoDec, which we originally built as a generic system for decision-making in geospatial environments, to support decision-making in transportation systems with *dynamic* and *real-time* data. Towards this end, we need to both conduct fundamental research at the data-tier of GeoDec to design new dynamic index structures and develop new services and interfaces at the integration and presentation tiers of GeoDec to support fusion and querying of real-time data. Consequently, GeoDec can operate as a datadriven spatiotemporal decision-making framework for real-time visualization, monitoring, querying, and analysis of transportation systems. Furthermore, we will develop a novel proof-of concept application, namely a dynamic vehicle route planner using congestion prediction, to demonstrate the benefits of our new framework. This application will exploit the real-world California transit data from RIITS (Regional Integration of Intelligent Transportation Systems), and will be released for public use.



Project 09-29

Risks and Recoveries from Extreme Disruptions in Freight Transportation System in a Megacity: Case Study for the Greater Los Angeles Area

Jean-Pierre Bardet, James Moore, Petros Ioannou, USC

There are currently 15 megacities in the world, i.e., metropolitan areas having more than 10 million inhabitants. Los Angeles and New York are in this category. Most megacities are exposed to natural hazards such as earthquakes, and, when located in coastal regions, are also vulnerable to hurricanes and tsunamis. Megacities have increasingly complicated transportation systems exposed to unprecedented pressures from population growth, energy and environmental impacts, and risks from natural and manmade hazards. Indeed, the transportation systems in megacities have become so complicated that very few organizations can understand their response to extreme events (EE) such as earthquakes, or can effectively mitigate the impacts from EEs. In the aftermath of recent major disasters in the United States such as 9/11 and Katrina, the pressing questions to be addressed for the future of transportation in Megacities are (1) How do complex transportation systems respond to EEs such as earthquakes? (2) How can we improve the recovery time and resiliency of transportation systems in case of major disruptions? (3) How are major stakeholders economically affected by major disruptions to transportation?

Project 09-30

Spatial Mismatch and Transit Choice among Immigrants

Gary Painter, USC

While there have been numerous tests of the spatial mismatch hypothesis among racial minorities, only recently has research (Aponte 1996; Pastor and Marcelli 2000; Preston et al 1998; Parks 2004a, 2004b; Painter et al, 2008, Liu, 2008) began to consider tests of the implications of the spatial mismatch hypothesis among immigrants. At present, the results for immigrants are mixed, and show a lot of heterogeneity with respect to country of origin, time in the United States, and status as a first or second generation immigrant. At the same time, the literature on the transit choice of immigrants (Myers, 1996; Blumenberg and Shiki, 2007) is much more sparse than the literature on transit mode choice overall.

This study proposes to analyze the role of transit mode choice and residential location on the job market outcomes of immigrants. Building upon the work of Ong and Miller (2005), who study the role of transit choice on spatial mismatch among minority groups, and on the work of Painter et al (2008) and Liu (2008), who study the role of spatial mismatch among immigrants, this study will estimate how transit mode choice interacts with spatial mismatch across several metropolitan areas. The proposed study will analyze these interactions in two gateway metropolitan areas (Los Angeles and Chicago) and four emerging immigrant gateways (Washington, DC, Atlanta, Seattle, and Denver) to discover if living in immigrant enclaves across different parts of a metropolitan area (central city, inner ring suburbs, and outer ring suburbs) differentially affect immigrants in areas with more or less established immigrant populations and in places with different transportation infrastructures.


2
3

Recently Completed Projects

Over the past year, 27 research projects were completed in either draft or final form. Of these, eleven were in goods movement, five in infrastructure, three in mobility, three in safety and security, and five from our applied research program. Projects are first submitted in draft form for peer review before being produced in final form. Completed projects are listed in Table 2.

Table 2: Completed Research Projects, 2008-09

Area	Principal Investigator	Co-PI	Project Title
Goods Movement	Genevieve Giuliano	Joseph Magaddino Tom O'Brien	Evaluation of Extended Gate Operations at the Ports of Los Angeles and Long Beach (Pier Pass)
Applied Research Program	Suzanne Wechsler		Development of a Lidar Derived Digital Elevation Model (DEM) as Input to a METRANS Geographic Information System
Goods Movement	Hamid Rahai	Bei Lu	Reducing Diesel NOx and PM Emissions of Diesel Buses and Trucks
Infrastructure	Jefferey Sellers		Sources of Electoral Support for Transportation Funding
Mobility	Christian Redfearn	Genevieve Giuliano	Network Accessibility and the Evolution of Urban Employment
Applied Research Program	Melody Kiang	Robert Chi	A Cargo Security Early Warning System - The Application of Neural Networks to Detect Cargos with Potential Security Fraud
Goods Movement/ Infrastructure	Kristen Monaco		Inter-county Spillovers & Ports and Roads Infrastructure Investment
Mobility	Resa Toossi		Efficiency Improvements by Passive Control and Optimization of the Combustion Process and Engine Cooling
Goods Movement	Alice Parker		Solving Metropolitan Transportation Problems Using Autonomous Ground Vehicles with Computer Vision
Goods Movement	Maged Dessouky	Fernando Ordonez	Strategies for Effective Rail Track Capacity Usage
Infrastructure	Kenneth James		Dual Use of Electric Utility Rights of Way by Integration of an Urban Maglev Container Corridor and Gas InsulatedTransmission Lines
Goods Movement	Shui Lam	Cheryl Pruitt	On Sequencing of Container Deliveries to the Over-the Road Trucks from Yard Stacks
Goods Movement	Harry Richardson	Peter Gordon	Adding a Freight Network to an Interstate Input - Output Model: Implications for California

Table 2: Completed Research Projects, 2008-09 continued

Area	Principal Investigator	Co-PI	Project Title
Safety and Security	Tridib Banerjee		Pedestrian Safety of School Children: Toward Improving Walkability of Inner City Neighborhoods
Applied Research Program	Hamid Rahai		Assessment of Ring Injectors for Reducing NOx and PM Emissions of Diesel Engines
Applied Research Program	Robert Friis		Health Effects Associated with Goods Movement in the Los Angeles Basin
Applied Research Program	Bradley Maples		Wireless Ad Hoc Sensor Networks: Applications, Evaluation and Security
Goods Movement	Fokion Egolfopoulos	Theodore Tsotsis	Combustion and Emission Characteristics of Biofuels Used for Transportation
Safety and Security	Hossein Hashemi		Low-Cost Object Detection RF CMOS Sensor Development for Active Safety Systems
Goods Movement	Viktor Prasanna	Amol Bakshi Garrett Asay	Integrated Modeling and Simulation Framework for Freight Transportation in Metropolitan Areas
Safety and Security	Detlof von Winterfeldt	Christopher Lee	Estimating Behavioral Changes for Transportation Modes after Terrorist Attacks in London, Madrid and Tokyo
Goods Movement	Burkhard Englert		XML Based Supply Chain Integration at the LA / LB Ports
Mobility	Kostantinos Psounis		Efficient Routing for Safety Applications in Vehicular Networks
Infrastructure	Sami Masri	Roger Ghanem	Identification and Evaluation of Major Issues Involving the Impact of Global Climate Change on Transportation Systems
Goods Movement	Kristen Monaco		Labor Markets in Good Movement Occupations in Southern California
Goods Movement	Katharine Moore	Andrea Polidori Constantinos Sioutas	Toxicological Assessment of Particulate Emissions from the Exhaust of Old and New Model Heavy and Light Duty Vehicles
Infrastructure	Suya You	Ulrich Neumann	Rapid Extraction and Updating Road Network to Caltrans Database

METRANS Research Impacts

The scholarly significance of METRANS research is reflected in publications. In 2008-09, METRANS research resulted in 27 transportation research reports and 93 refereed publications. Research results were presented at engineering, urban planning, regional science, political science, logistics, and transportation conferences. Publications appear in an equally broad range of scholarly journals.

METRANS research also informs practitioners and policy-makers. Research results are disseminated at professional meetings and conferences, through *METRANS News*, our website, and distribution of reports to federal and state government agencies.

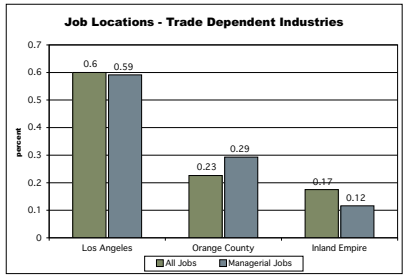
Summaries of selected completed projects are at right. Final reports from all completed projects are available on our website.

A record 27 research reports were completed over the past year. The following section highlights just a few.

Thematic Area: Goods Movement and International Trade

Labor Markets in Good Movement Occupations in Southern California

Kristen Monaco, CSULB



Using data from the decennial Census as well as the American Community Survey, we examine the earnings and employment in manufacturing, retail trade, transportation, and wholesale trade in Southern California. We find that the labor markets show evidence of limited job ladders without significant educational investment (including language skills) and that there are clear patterns in the types of jobs held by residents of the communities in which new logistics facilities are being built; low skill/low pay jobs tend to be held by individuals who live and work in the Inland Empire and the high skill/high pay jobs tend to be held by workers who live in Los Angeles and Orange Counties.

Strategies for Effective Rail Track Capacity Usage

Maged Dessouky, Fernando Ordonez, USC

In the United States, railways are the major means to trans-continentally move goods from ports to the various inland destinations. Due to mergers and abandonment of rail lines, there has been a reduction in the track capacity, concentrating rail traffic to fewer lines. In addition to this, increased international trade with Pacific Rim nations has greatly increased cargo volumes. Average transit times have stretched out in many corridors.

There is clearly a need among US freight railroads for better analytical tools to manage their capacity and scheduling. A challenging problem is determining the effect of shipments on a railroad, including estimation of the travel times and delays in the network plus determination of the most efficient method of scheduling these loads. This entails the ability to assign trains to routes based on the statistical expectation of running times in order to balance the railroad traffic, and to reject or defer shipment requests that would overload the network. In the first year of this research, we used mathematical modeling techniques to perform the former, that is, to be able to route and schedule trains on a railway network so as to minimize the travel time delays. In the second year we developed a simulation-based delay estimation methodology that would be able to estimate the travel-time delay over any given single-track or double-track rail network. These estimates can be used to reject or defer shipments that could cause congestion in the network.

Efficient solutions to the above problems are necessary to obtain an effective capacity planning and scheduling system for train networks. As a whole, this research represents an original effort in developing the first quantitative model to accept, defer or reject shipments on a railroad, with decisions based on an accurate representation of the delays these shipments cause on the railroad and the possibility of real-time rerouting trains to alternative tracks.

Thematic Area: Goods Movement and International Trade continued

Reducing Diesel NOx and PM Emissions of Diesel Buses and Trucks

Hamid Rahai, Bei Lu, CSULB

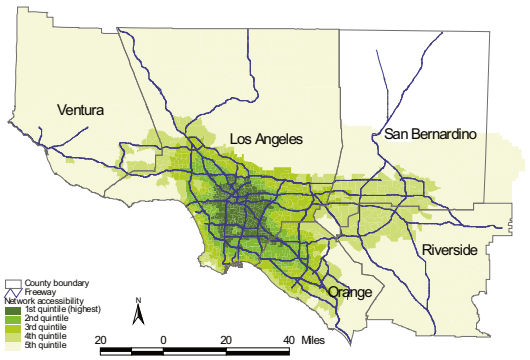
The objective of the present investigation was development of a high efficiency selective catalytic reduction (SCR) system for reducing diesel nitrogen oxides (NOx) and particulate matters of diesel trucks. The investigation was divided into two parts. First the flow characteristics of a coil-shaped injector were investigated using a turbulent jet facility at the Center for Energy and Environmental Research and Services (CEERS) laboratory. For this part of the investigation, air was used as both injection and exhaust gases. Results indicate that the coil injector enhances the mixing process between the axial flow and the injecting flow. However, due to the asymmetry of the injection process, the mixing is not uniform and may result in ammonia slippage during the exhaust after treatment process. In part two of the investigation, an SCR system with a separate injector and mixer was developed and the system was tested on the exhaust of a 3-cylinder diesel engine under a moderate load condition, using 36% by weight urea as the reducing agent. Results show 81% reduction in NOx emissions. The present investigation provides information on a coil-shaped injector-mixer device as part of an SCR system that can be scaled for different size diesel engines for significant reductions in NOx emissions.

Thematic Area: Urban Mobility

Network Accessibility and the Evolution of Urban Employment

Christian Redfearn, Genevieve Giuliano, USC

This research examines the impact of accessibility on the growth of employment centers in the Los Angeles Region between 1980 and 2000. There is extensive empirical documentation of polycentricity – the presence of multiple concentrations of employment – in large metropolitan areas. However, there is limited understanding of the determinants of growth of employment centers. It has long been held that transportation investments influence urban structure, particularly freeways and airports. Using data on 48 employment centers, we test the effects of various measures of accessibility on center employment growth: network accessibility and two measures of labor force accessibility. We also test the relevance of access to airports. We find that after controlling for center size, density, industry mix, and location within the region, only labor force accessibility is significantly related to center growth.



Thematic Area: Urban Mobility continued

Sources of Electoral Support for Transportation Funding

Jefferey Sellers, USC

This Report analyzes local variations in voting on transportation referenda at the state and county level over 1998-2006 in five metropolitan areas (Fresno, Los Angeles and San Francisco/San Jose in California, along with Seattle, Washington and Cincinnati, Ohio) to explore the sources of electoral support for transportation funding. The analysis employs several types of variation in voting patterns: (1) variations in support for successful ballot measures according to the ecological characteristics of communities, (2) comparison over time between results of successful and unsuccessful ballot measures in the same places, and (3) comparison of the ecological correlates of voting between successful and unsuccessful referenda in different counties or states.

The results confirm several hypotheses about effective electoral coalition-building in support of ballot measures.

- Support for transportation funding measures tends to be higher in regions with higher levels of congestion as well as rapidly increasing congestion, and lowest in regions with little congestion.
- Successful highway funding referenda depend on support from urban, minority, relatively disadvantaged communities.
- With the partial exception of areas where mass transit is more available (in this study, San Francisco and Seattle), successful transit funding referenda depend on attracting support from suburban, affluent and nonminority communities with little local interest in transit.
- In areas where mass transit use is widespread, successful electoral coalitions can center around more urban, more transit-oriented communities. Even when this occurs, affluent and middle class users remain crucial constituencies for a transit ballot measure to succeed.
- Successful referenda to fund mixed modes of transportation combine the coalition-building tendencies of highway and transit funding referenda. In doing so these measures build electoral coalitions across the class, ethnic and spatial divides that have often frustrated the governance of metropolitan areas.
- Ballot measures that frame funding decisions in regulatory rather than allocational terms can attract support through appeals to collective rather than local goods.

The results suggest that transportation ballot measures have added new dynamics of metropolitan coalition-building that may qualify as well as reinforce the role of middle class, suburban, white communities as influences on transportation policy.

Thematic Area: Safety

Pedestrian Safety of School Children: Toward Improving Walkability of Inner City Neighborhoods

Tridib Banerjee, USC

The proportion of children walking or biking to school has decreased significantly over the past decades. The purpose of this study is to identify safety issues perceived by children and associated measures that might promote children walking to school. The study focused on schools in inner city Los Angeles in the USC neighborhood. Study subjects included six 5th grade classes from 5 elementary schools accounting for 104 children, 87 parents, 122 Kid Watch volunteers.

Summary findings from the research are:

- The majority of parental attitudinal and perceptual factors were significantly associated with how children travel to/from school. However, when parental perceptions were compared with those of their child, they did not appear to be in concordance.
- Among objective environment measures, only the density of crime along children's school travel routes was found significantly inversely related to both walking to and from school.
- Both barriers to and attractors of walking were more closely related to social milieu for the child participants in this inner city area than traffic or other environmental features.
- Children in this study expressed a high level of safety hazards in their neighborhoods and along their school travel routes, which were highly associated with gang related activities.
- When crime and violence were major concerns, commercial place played an important role, perceived by children as stimulating and safe, while parks or recreation centers were often perceived as unsafe or unfriendly.
- Children had an acute sense of place based knowledge about safety issues in their neighborhoods.
- Children demonstrated their capacity not only to observe and understand the environment but also to evaluate and reflect on making their neighborhood safer and walkable on their own terms.

The study points to the need for an ecological and child-centered approach in research and policy making on active school travel. We find that policy measures based on parents' perceptions may not appeal to children in the same way as adult parents. And any policy responses aimed at promoting walking among children should be responsive to children's concerns about gangs, drugs, and crime as they pertain to how children experience and use their local environments in low income inner city area.

New Faculty Hires

- Burcin Becerik Gerber, Civil and Environmental Engineering, USC
- Christine Jocoy, Geography, CSULB
- Lisa Schweitzer, School of Policy, Planning, and Development, USC
- Antonella Sciortino, Computer Engineering and Computer Science, CSULB
- Seiji Steimetz, Economics, CSULB
- Cheng Feng Ng, Economics, CSULB

L to R: Larry Orcutt, Division Chief, Division of Research and Innovation, Caltrans; Genevieve Giuliano, Director, METRANS; Marianne Venieris, Deputy Director, METRANS; Jeet Joshee, CSULB Dean, College of Continuing and Professional Education.

METRANS Faculty

One of METRANS' great strengths is the excellence of its faculty. Affiliated faculty, defined as those who have received research funding from METRANS, number 104, with 62 at USC and 42 at CSULB. These faculty affiliates are drawn from 9 schools and 20 departments, attesting to the multidisciplinary nature of METRANS research. Quality of METRANS faculty is reflected in awards they receive. In 2008-09, 7 faculty received awards from national or international organizations, 5 faculty received university awards, and one was awarded an endowed chair. In addition, several have been appointed to editorial boards, major professional committees, and other positions. METRANS funding has expanded transportation research activity at both USC and CSULB, and has led to new faculty hires.

National and International Awards

Peter Gordon, School of Policy, Planning and Development, USC was named a Fellow of the Regional Science Association International.

Ramesh Govindan, Department of Computer Science, USC won the Best Paper Award, IEEE Symposium on Information Processing in Sensor Networks.

Petros Ioannou, Ming Hsieh Department of Electrical Engineering Systems, was awarded the IEEE Intelligent Transportation Systems Society Best Practice Engineer for his work on Adaptive Cruise Control.

Najmedin Meshkati, Department of Industrial and Systems Engineering, USC was named a Jefferson Science Fellow, US Department of State, where he will spend one year working as a member of the Office of Science and Technology where he will be assigned to the U.S. Agency for International Development.

Dowell Myers, School of Policy, Planning and Development, USC received the best paper award in the Journal of the American Planning Association for his research "Aging Baby Boomers and the Generational Housing Bubble."

Alice Parker, Department of Electrical Engineering Systems, USC, received the Sharon Keillor Award for Mentoring, American Society of Engineering Educators.

Detlof Von Winterfeldt ISE and SPPD, USC, was awarded the MCDM Gold Medal, International Society on Multiple Criteria Decision Making.

University Awards

Anastasios Chassiakos, Dept. of Electrical Engineering, CSULB, received the University Distinguished Faculty Teaching Award. This is the third of three awards honoring CSULB faculty and he is one of only a few professors at CSULB who have received all of the three major University-wide awards - Outstanding Professor, Distinguished Faculty and Distinguished Faculty Teaching Awards. Chassiakos is a member of the METRANS Executive Committee.

Burkhard Englert, Dept. of Computer Engineering and Computer Science, CSULB, also received the University Distinguished Faculty Teaching Award.

Sven Koenig, Dept. of Computer Science, USC, and David Sloane, SPPD, USC received USC's Mellon Mentoring Award for faculty-mentoring-students and faculty-mentoring-faculty respectively.

Henry Yeh, Dept. of Electrical Engineering, CSULB received the Distinguished Faculty Scholarly and Creative Achievement Award.

Genevieve Giuliano, METRANS Director, SPPD, was awarded the Margaret and John Ferraro Chair in Effective Local Government for her record of achievement in research and outreach on transportation planning in metropolitan areas.

Anastasios Chassiakos, CSULB

Other Recognition

Many METRANS affiliated faculty are recognized leaders in their fields. This year **Fokion Egolfopoulos**, Dept. of Aerospace and Mechanical Engineering, USC, was appointed Editor-in-Chief of Combustion and Flame, the journal of the Combustion Institute. **James Moore, II,** ISE, USC was elected President of INFORMS Transportation Science and Logistics Society and was named Senior Vice President for Continuing Education in the Institute of Industrial Engineers. He also serves as president of the INFORMS Transportation Science and Logistics Society. Moore is a member of the METRANS Executive Committee. **Harry Richardson** was appointed Distinguished Scholar, Seoul National University and was inducted as a fellow of the Regional Science Association International and a fellow of the Western Regional Science Association.

Visiting Faculty

This year was the first time METRANS hosted visiting faculty. We are proud to have hosted three international scholars over the past year. **David Huang**, visiting scholar from Schenzhen Polytechnic, China, teaches and conducts research in port logistics. **Miquel-Àngel Garcia-López**, Assistant Professor of Applied Economics, Universitat Autonoma de Barcelona, Spain, received a scholarship from the Spanish Government to study the role of transportation in the evolution of metropolitan areas. **Andres Tolli**, visiting scholar from Tallinn University of Technology, Estonia, is a doctoral student who completed part of his doctoral research on Chinese container flows under the guidance of the USC Epstein Department of Industrial and Systems Engineering.

"I came to USC because some of the most relevant researchers in this subject are in this university"

Miquel-Àngel Garcia- López

Adam Gardner, USC
Student of the Year 2008

Adam Gardner, a Masters in Public Administration student at USC, was named 2008 METRANS Student of the Year. As a result, he attended the Transportation Research Board meeting in Washington, D.C.

Growing up in the D.C. suburbs, Gardner first became intrigued with transportation while riding the city's METRO for lunch downtown with his father. Later as a minor league baseball pitcher, he gained "professional experience" while "seeing a lot of the country from the backseat of a minor league bus!"

Today, he says, "I am really interested in the administrative side of transportation and also the financing side. I would like to be a senior executive at a transportation agency-federal, state, or local."

Following graduation in May, Gardner hopes to be selected for the Presidential Management Fellowship. "It's a great opportunity to get work in public service," he noted.

The excellence of our students is demonstrated by the many awards they receive each year. Listed below are award recipients for 2008-09.

National and International Awards

Adam Gardner, Master of Public Administration at USC is the 2008 - 2009 METRANS Student of the Year. Mr. Gardner received his award at the Transportation Research Board Annual meeting in Washington DC in January. Adam was also named a Presidential Management Fellow.

Sylvia He, USC SPPD PhD student, received the Eisenhower Scholarship, the USC Academic Achievement Award as well as a scholarship to attend the Fulbright Summer School at Vienna University for Economics and Business Administration in Austria.

Jiyoung Park, USC SPPD PhD student, received the John Dyckman Award in Recognition of the Outstanding Dissertation in Planning. He also received the 2008 Eisenhower Transportation Fellowship and was honored at the Dwight David Eisenhower Transportation Fellowship Program for his research.

Yiming Wang, USC SPPD PhD student, won the Tiebout Prize from the WRSA for best paper submitted by a graduate student.

Tristin Hatch, USC Engineering undergraduate student, has spent a semester abroad at the National University of Ireland, and while there was awarded the "Ideas of the Year Award" by Ireland's Chartered Institute of Logistics and Transport.

Tristan Hatch, USC Engineering student, receives award from Irish Senator Rónán Mullen.

State Awards

Marie Valentine, USC Master of Planning student, **Alan Huynh** and **Lily Aung**, USC Engineering students, were selected to attend the California Transportation Foundation's annual education symposium. Marie Valentine and Alan Huynh's team won the mock RFP competition.

Lily Aung, USC Engineering undergraduate student, received a California Transportation Foundation Scholarship.

Marie Valentine, lower left, and Alan Huynh, front center, with their winning CTF team.

Local Awards

Elena Maggioni, USC SPPD PhD student, received the Global Conference Travel Scholarship from the CSCMP Southern California Roundtable.

Mohja Rhoads and **Yiming Wang**, USC SPPD PhD students, **Nora McIntyre**, USC Master of Civil Engineering student, **Lily Aung**, **Tianqi Gao**, **Viridiana Martino**, **Janelle Patterson** and **Catherine Ricafort**, USC Engineering undergraduate students, received WTS scholarships. **Angela Goyette**, CSULB MAGL student, and **Inggrid Limoseputro**, CSULB GLS student, were also honored by WTS.

Pavan Murali, USC PhD student, was awarded a Haynes Doctoral Dissertation Fellowship.

Romeo Casco, **Yajaira Sandoval** and **Lizene Zwick**, CSULB GLS students, received Harbor Transportation Club Scholarships.

Kenneth Duncan, **Murat Koksel** and **Claudia Lopez**, CSULB MAGL students, and **Kevin Beymer**, **Romeo Casco** and **Robin Pitts**, CSULB GLS students, received Los Angeles Transportation Club scholarships.

Angela Goyette, CSULB Master of Arts in Global Logistics student and **Cynthia Castillo, Angelo Lopez, Michael Maricic, James Miller** and **Patricia Uzes**, CSULB GLS students, were awarded scholarships from the Port of Long Beach.

Egle Viliute, CSULB GLS student, was awarded the Mary Bleming Memorial Scholarship.

University Awards

Mohja Rhoads, USC SPPD PhD student, received a USC Provost Fellowship.

Anupama Mann, USC DPDS student, received the Gill-Chin Lim Award for Best Dissertation on International Planning.

Jeff Jacobsen, USC Master of Planning student, received top honors for his transportation and land use comprehensive exam.

Jeff Sparks, USC Master of Planning student, received the Academic Capstone Award for his work on the Parks and Recreation Master Plan for the City of San Gabriel.

Linda Bohlinger, President of CTF, presents scholarship check to Lily Aung in Sacramento.

WTS-LA Chapter Scholarship Winners, L to R: Lawanna Broussard, CSU Dominguez Hills; Tianqi Gao, USC; Viridiana Martino, USC; Inggrid Limoseputro, CSU Long Beach;Catherine Ricafort, USC; Sara Hajiamiri, Pardee RAND; Angela Goyette, CSU Long Beach.

Sean Fergus, CSULB

Student of the Year 2007

Today's real estate crisis and the run-up in oil prices have challenged recent CSULB graduate Sean P. Fergus in his new role as a consultant for John Burns Real Estate Consulting in Irvine. "We conduct housing market research for home builders and for financial firms," he explained. "The biggest issue now is finding the bright spots. I was so impressed with all the faculty in the program," he recalled. "It has been a privilege to speak with them and get a whole new perspective on transportation." On being chosen Student of the Year he said, "It was a major honor, and it provided great opportunities, like getting this job!"

METRANS Education

The Master of Arts in Global Logistics (MAGL) at CSULB is oriented to those with some industry experience. It is a multidisciplinary degree that draws from economics, engineering, information systems, and management. It is aimed at providing a broad foundation in logistics, including supplier relations, electronic commerce, and transportation and inventory management. Eleven students completed the program this year, and 28 students are currently enrolled.

The urban planning, public policy, and public administration masters programs in the USC School of Policy, Planning and Development offer a concentration in transportation. Three students took the Urban Planning comprehensive exam in transportation. One hundred forty two students graduated in these programs. The USC Viterbi School of Engineering offers an MSCE with transportation concentration. Forty eight students graduated with the MSCE this past year.

PhD studies with a concentration in transportation are available at USC in SPPD and VSOE. This year had a particularly large cohort of graduating PhDs.

Nasser Al-Rifai, Industrial and Systems Engineering
Dissertation: Optimizing a Lean Logistic System and the Identification of its Breakdown Points.

Mohammad Arhami, Environmental Engineering
Dissertation: Exposure Assessment and Source Apportionment of Size Fractions of Airborne Particulate Matter, accepted appointment as Assistant Professor, Tehran University.

Hwan Chang, Engineering
Dissertation: Reconfiguration Strategies for Mitigating the Impact of Port Disruptions.

Pei-Wen Chen, Civil and Environmental Engineering*
Dissertation: Vibration of Nearby Structures Induced by High-Speed Rail Transit.

Apoorva Jindal, Electrical Engineering*
Dissertation: Random Access is Good Enough to Build Wireless Multi-Hop Networks.

Lingqian Hu, Urban Planning and Development*
Dissertation: Urban Spatial Transformation and Job Accessibility: Spatial Mismatch Revisited.

Tae Wook Kim, Chemical Engineering
Dissertation: Studies of Transport Phenomena in Hydrotalcite Membranes, and the Possibility of Their Use in Direct Methanol Fuel Cells.

Anupama Mann, Urban Planning and Development
Dissertation: A Megaproject Matrix Ideology, Discourse and Regulation in the Delhi Metro Rail.

Tieshan Sun, Urban Planning and Development
Dissertation: Population and Employment Distribution and Urban Spatial Structure: An Empirical Analysis of Metropolitan Beijing, China in the Post Reform Era, Sun has accepted an appointment as Assistant Professor in the School of Government, Peking University, Beijing.

Jung A. Uhm, Urban Planning and Development*
Dissertation: Walkability as "Freedom": The Ecology of School Journey in Inner City Los Angeles Neighborhoods, Uhm has accepted a position at the Southern California Association of Governments (SCAG).

Federico Viva, Chemistry
Dissertation: Studies on Direct Methanol, Formic Acid and Related Fuel Cells in Conjunction with Electrochemical Reduction of Carbon Dioxide.

Cara Jane Wallis, Communications
Dissertation: Techno-Mobility in the Margins: Mobile Phones and Rural-to-Urban Migrant Women in Beijing.

Haojun Wang, Computer Science
Dissertation: MOVNet: A Framework to Process Location-Based Queries on Moving Objects in Road Networks.

Xiuying Xing, Civil and Environmental Engineering
Dissertation: Computer Modeling for Wave Oscillation Problems in Harbors and Coastal Regions.

Marat V. Zanov, Psychology
Dissertation: In Flight Turbulence: An Articulated Thought in Simulated Situations (ATSS) Investigation of Air Travelers' Experiences.

*Dissertation research supported in part by METRANS research grant

It is often the case that PhD students move to postdoctoral or other temporary positions while completing the dissertation, and then move to tenure-track positions. Yiming Wang (Urban Planning, 2008) has been appointed Lecturer in Spatial Analysis and GIS, at the School of City and Regional Planning, Cardiff University. Ajay Agarwal (Urban Planning, 2008), has been appointed Assistant Professor, School of Urban and Regional Planning, Queens University.

JiYoung Park, USC

Student of the Year 2006

The University at Buffalo is the new academic home of JiYoung Park, who completed his Ph.D. at USC. His research centers on responses to man-made and natural disasters in the context of urban economics and transportation modeling. "The education I received at METRANS and USC is different from other planning schools' education, I learned to develop many logical ideas into research topics with the help of great faculty and colleagues at METRANS and the School of Policy, Planning and Development." Without that advantage, Park doubts he would have gone into academia. "Certainly, the experiences led me to join the academic world," he said. "The past four years with METRANS are a cornerstone of my life."

Goods Movement Leadership Academy

This year METRANS joined with the CSULB College of Continuing and Professional Education to fund the development of a Goods Movement Leadership Academy. It is designed as a week-long training program aimed at improving understanding of international trade among public policy decision-makers. It will bring top scholars, industry representatives, and junior to senior-level civil servants together. Academy fellows will interact with key industry players and regulators, as well as with CSULB faculty members. Field visits to nearby ports, the Alameda Corridor, and distribution centers will provide fellows with a firsthand look at these ideas and practices in action. Curriculum development is underway and it is expected that a pilot program will be offered in the first half of 2011.

Math, Engineering and Science Achievement (MESA) Program

The Math, Engineering and Science Achievement (MESA) program seeks to attract more young disadvantaged students into engineering professions. In 2008, METRANS and CITT partnered with the Gateway Cities Partnership, Inc. (GCPI), Paramount Unified School District, and CSULB's College of Engineering in sponsoring the MESA Program.

Professional Development and Executive Education

Continuing education is essential in a rapidly changing work environment. Building upon its signature programs, METRANS continues to strengthen its professional development and executive education programs through CSULB's Center for International Trade and Transportation.

METRANS has also offered another round of Caltrans Goods Movement Workshops. They provide training in goods movement and international trade to state, regional, and local public agency staff. Classes were held in both Northern and Southern California.

Global Logistics Specialist Professional Training

The Global Logistics Specialist (GLS) program continues to attract students, both in the classroom and online. It provides training in all aspects of the supply chain and international trade and is oriented to mid-level industry professionals and public agency staff. Since its inaugural class in January 1997, well over 1100 people have attended classes in the GLS program; over 850 have earned the Global Logistics Specialist designation. In 2008-2009, more than 145 students took part in at least one of the six modules. 56 of these students were awarded the Global Logistics Specialist professional designation – 15 from the online program and 41 for the on-ground program.

The GLS specialist designation is only conferred after successful completion of all six modules and a capstone project. The project is designed to test the conceptual, analytical, teamwork, and presentation skills the students have developed throughout the program. Deliverables include a written Strategic Supply Chain Management Plan and an oral presentation.

Most of the students in the GLS online program are California-based students from outside the immediate CSULB service area. Domestic students have also come from as far as New York and Florida, and international students have come from the Dominican Republic, Canada, Vietnam, Mexico, the Philippines, Romania, India, Nigeria, and Brazil.

In 2008-09, the online curriculum was revised to more closely mirror the on-ground curriculum while still respecting the unique needs of the online learner. Enrollment has continued to increase. There were 20 students who graduated from the program in 2008, the highest number since the inception of the program, and 14 more joined them in 2009. As of July 2009, 145 students have enrolled in various modules of the GLS Online – 56 of these have completed the entire online program.

Events

2008-09 was a year of celebration for METRANS. Starting out as little more than an ambitious idea among a handful of faculty, METRANS has become a nationally recognized center for innovative research, professional development and outreach. Affiliated faculty now number more than one hundred, many are among the leaders of their field. Literally thousands of people have attended our annual Town Halls and other events. Presence of METRANS has led to new faculty hires, growing the transportation research and teaching strength at both its partner universities. We celebrated the entire year with a new logo that branded all events, publications and communications throughout the year, including this annual report.

Our major celebration event was a gala dinner in October featuring David Billington of Princeton University. Professor Billington, Gordon Y. S. Wu Chair of Engineering and member of both the National Academy of Engineering and the National Academy of Sciences, studies engineering innovations and traces the history and role of engineering in the transformation of society. Over 200 colleagues, supporters and sponsors gathered at the reception and dinner, where posters displayed the history and accomplishments of the center. METRANS received congratulatory proclamations from local and state elected officials, reflecting the widespread recognition and support METRANS has achieved.

Our major spring celebration was a Distinguished Lecture presented by José A. Gómez-Ibáñez, Derek C. Bok Professor of Urban Planning and Public Policy, Harvard University. Gómez-Ibáñez, an internationally renowned transportation policy scholar, spoke on the transportation infrastructure crisis and privatization.

METRANS 10th Anniversary Keynote Speaker
David P. Billington
Gordon Y.S. Wu Professor of Engineering
Department of Civil & Environmental Engineering,
Princeton University

The Galen Center at USC was the setting for METRANS 10th Anniversary Gala Dinner.

Maya Hotel, Long Beach was the site chosen for METRANS' 2009 National Urban Freight Conference.

Town Hall Themes

2007
"Port Security: Guarding America's Front Door"

2006
"Evolving Goods Movement Solutions: Balancing the Economy and the Environment"

2005
"Lessons Learned: Peak Season 2004 – Causes, Impacts, Solutions"

2004
"Quality of Life and Port Operations: Challenges, Successes and the Future"

2003
"What's in it for Me? Collaborative Strategies for New Transportation Infrastructure in California"

2002
"Time of Transitions: New Priorities and Challenges for Trade and Transportation in California"

2001
"Solutions: Perspectives on the Future of Goods Movement in Southern California"

2000
"Modernization & Mechanization: A Tradition in Partnerships"

1999
"Global Connectivity and Collective Responsibility for the Future"

10th Annual Town Hall Meeting

The Annual Town Hall Meeting is intended to foster education, research and information exchange that positively contributes to resolution of port-related conflicts. In its infancy, the Town Hall approach was designed to make sure that the rank and file members of the longshore union were included in any debate surrounding port growth. Over time, the Town Hall evolved to include a wide array of stakeholders interested in the relationship between the ports and the community.

The 2009 Annual Town Hall meeting was unique because it was the last in the existing Town Hall format, i.e., a combination of formal presentation, video, and Q&A with a panel of experts. We have reached our goal of bringing together all the trade stakeholders including labor, ports, terminal operators and others in the international trade supply chain to discuss the issues that face them. When the first Town Hall was held, there were few other forums, and none offered by an educational institution. In the decade since, there have been more opportunities for industry stakeholders and the community to gather to discuss their concerns over the state of the industry. As a result we are now considering how to fulfill our education and outreach goals in new and unique formats.

The Tenth Town Hall addressed an obvious topic given the current economic climate. It was titled "The Decade Ahead: Jobs, Cargo, Competition, and You" and was held on March 11, 2009 at the Carpenter Center on the CSULB campus. This year the Town Hall featured respected economist Paul Bingham who provided an overview of international trade and the economic recession. The expert panel included Dan Meylor, Carmichael International Service; David Arsenault, Hyundai Merchant Marine; Alan McCorkle, APM Terminals; Scott Moore, Union Pacific Railroad; and Patty Senecal, International Warehouse Logistics Association, and was moderated by Dr. Joseph Magaddino, CSULB. This year's video was a pictorial summary of trends and issues that have impacted trade through Southern California's ports over the past decade. The 2009 Town Hall attracted more than 800 industry and community stakeholders and received financial sponsorships from several organizations.

Town Hall Sponsors

US Department of Transportation (USDOT)
California Department of Transportation (Caltrans)
Port of Los Angeles
Port of Long Beach
Alameda Corridor Transportation Authority
USC Sea Grant Program
BNSF Railway
Long Beach Business Journal
Harbor Transportation Club
Long Beach City College
Union Pacific Railroad
International Longshore and Warehouse Union (Locals 13, 63, and 94 and the Southern California District Council)

Seminar Series

METRANS holds a seminar series that features METRANS sponsored research and guest seminars. It provides a venue for sharing new research with faculty, students and local industry and agencies. Seminars are typically held via teleconference. Seminars are open to the public and are advertised to local public agencies and industry.

The following seminars were offered over the past year.

Special METRANS 10th Anniversary Seminar, October 31, 2008
Infrastructure of Rivers & Highways: Dams, Levees & Bridges
David Billington, Ph.D. Gordon Y. S. Wu Professor of Engineering, Professor of Civil and Environmental Engineering, Princeton University

Potential for Inland-Port Development in LA Basin Freight Transportation, November 19, 2008
Mansour Rahimi, Associate Professor, Department of Industrial and Systems Engineering, USC Viterbi School of Engineering

Transportation Taxes and Social Equity: An Overview, January 28, 2009
Lisa Schweitzer, Assistant Professor, USC School of Policy, Planning, and Development

Modeling & Software Tools for Corridor Management, February 18, 2009
Alex Kurzhansky, Ph.D., Electrical Engineering & Computer Science Department, University of California, Berkeley

METRANS 10th Anniversary Spring Distinguished Lecture, March 12, 2009
The Infrastructure Crisis and Private Highways
José A. Gómez-Ibáñez, Ph.D., Professor of Urban Planning and Public Policy, Harvard Kennedy School of Government

Co-sponsored Events

METRANS seeks to leverage resources by joining with other universities and professional organizations to sponsor events.

This year METRANS co-sponsored the following:

October 2008 Distinguished Lecture
Sonny Astani Department of Civil and Environmental Engineering, USC

November 2008 Conference
Tackling Congestion in an Era of Climate Change
California University Transportation Centers (UC Berkeley, UC Davis, San Jose State University, CSU San Bernardino, METRANS) and Partners for Advanced Transit and Highways

February 2009 UCTC Annual Student Conference
University of California Transportation Center

March 2009 Southern California Roundtable of the Council of Supply Chain Management Professionals
Supply Chain: Green, the Business Case
Business Center for Global Logistics and Supply Chain, USC Marshall School of Business

METRANS will also partner with the International Federation on Automatic Control to sponsor the 12th International Symposium on Control in Transportation Systems (CTS'09) to be held in September 2009. The conference will be organized by Petros Ioannou, METRANS Associate Director for Research.

Finally, METRANS will join the Transportation Research Board and several other organizations in sponsoring TRB's 4th International Conference on Women's Issues in Transportation, to be held in October 2009.

José A. Gómez-Ibáñez
Harvard University's Derek C. Bok Professor of Urban Planning and Policy

"The Infrastructure Crisis and Private Highways" METRANS' 10th Anniversary Spring Distinguished Lecture was presented by José A. Gómez-Ibáñez, the Derek C. Bok Professor of Urban Planning and Public Policy at Harvard University.

Gómez-Ibáñez explored a dilemma of U.S. infrastructure policy – the need for more investment and the public reluctance to increase taxes and fees. While some have argued for private financing of private highways, Gómez-Ibáñez finds such a position unpersuasive. He explained that the country needs to find ways to harness private forces to reduce real costs or provide better service. "His topic was perfect for our 10th Anniversary Distinguished Lecture – provocative viewpoints on a critical topic," said Genevieve Giuliano, METRANS Director. "We were delighted when Prof. Gómez-Ibáñez agreed to travel here for this occasion."


METRANS NEWS

Christian Redfearn Studies Cities, Climbs Mountains

Inside this issue


BuildingBridges

Veterans to Receive Benefits While Learning about Logistics

Dear Readers:

Inside this Issue

Communications

METRANS News features METRANS researchers, conferences and other events, recent publications, interviews with key individuals involved in METRANS, and other newsworthy activities and events. Two to three 8 page issues are published each year. It is distributed electronically to the national research community, federal, state and local leaders, industry leaders, and federal, state and local transportation agencies. Of the 1,000 copies that are printed, around 500 are distributed to the METRANS Advisory Committee and researchers, public agency managers, and elected officials. The newsletter is also posted on the CITT website with a link to the METRANS website. Email announcements of new issues are sent to about 350 contacts in industry, public agencies and academia. As of June 2009, 17 issues have been published. Two issues were published this year, one in October of 2008 (a special 12-page issue for the METRANS 10th Anniversary) and the second in April 2009.

Building Bridges seeks to provide a neutral communications channel on industry issues, to lead to fruitful and open dialogue, and to encourage closer cooperation among all industry stakeholders. Of the 1,750 copies of each issue that are printed, approximately 1,200 are mailed to ILWU local members, industry leaders, and government agencies. The remaining issues are distributed at other venues. Each issue is also posted on the METRANS website. About 500 individuals and organizations receive email notification of new issues. We continue to encourage readers to download copies from the website. As of June 2009, 30 issues have been published. Issues were published in August and November of 2008 and in January and May of 2009.

Town Hall Videos

The Town Hall videos have become popular teaching and training tools at schools and at trade association meetings. Produced by CCPE's Advanced Media Production at CSULB, they are available for viewing on the METRANS websites; videos and CDs are available for purchase. Town Hall videos are regularly nominated by the national Alliance for Community Media (ACM) for a Western Access Video Excellence (WAVE) award for Best Community Issues Production in the ACM's Western Region. The video from the Seventh Town Hall, *Lessons Learned from the 2004 Peak Season Crisis: Causes, Impacts, Solutions*, also produced by AMP, won the Alliance award. As of June 2009, about 50 copies of the Town Hall videos have been sold or distributed to educational institutions.

Website

The METRANS website is the primary means of dissemination of information on METRANS activities. The METRANS Strategic Plan, Annual Reports, and Semi-Annual Reports are available in downloadable form. All research project final reports, conference summaries, and technology transfer reports are also available. The *Building Bridges* newsletter and *METRANS News* are also available. The website also provides links to USC and CSULB transportation-related educational programs, identifies educational programs in transportation and links to 120 sources of transportation information. The UTC search engine locates documents on all other UTC websites by keyword. The METRANS website is also used to coordinate paper submission for the 2009 National Urban Freight Conference and to promote the conference and provide up-to-date information on the event. Event and hotel registration, corporate sponsorships is also coordinated through the website.

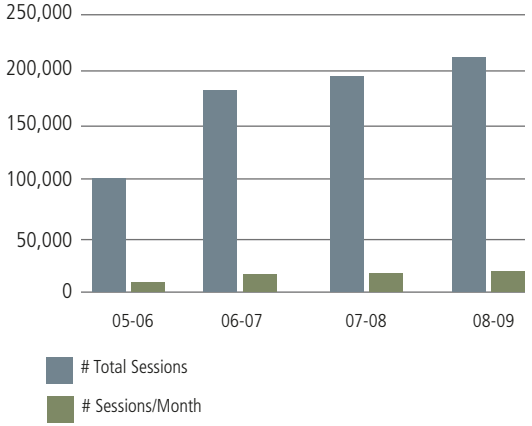
With the rapid growth of the internet as a primary source of information, website communications are increasingly important. We continue to experiment with various media and technologies to enhance the utility and attractiveness of the website. In addition to providing all the information required of UTCs, METRANS offers additional services, and provided links to other relevant web pages.

- The **METRANS Timeline** is an interactive and searchable timeline of goods movement related legislation, actions, and events. The timeline begins in 2000, and is updated weekly. The purpose of the Timeline is to build an historical record of goods movement policy and outcomes. As the Timeline expands, it will become an increasingly valuable source of information for researchers and others.

- The **METRANS TransCast** features podcasts of expert interviews. We developed the TransCast to feature some of transportation's best practitioners and researchers. The interviews typically focus on the perspectives and views of those interviewed.

- The **2009 National Urban Freight Conference** is using the website for coordination of paper submissions.

METRANS website statistics continue to show an impressive level of website traffic. The total number of visits for 2008-09 was over 15,000 visits per month. Visitors represent numerous countries; and the largest percentage goes directly to the site, i.e. they are not referred from another Internet location.



Management Structure

University of Southern California holds the prime grants that fund METRANS from the US DOT and CALTRANS. Center administration is the responsibility of the USC Principal Investigator, but all policy matters are jointly decided by USC and CSULB through the METRANS Executive Committee. A full-time staff member serves as METRANS Administrator. Staffing for CSULB activities is allocated on a task specific basis.

Genevieve Giuliano
Director, METRANS, USC

Marianne Venieris
Deputy Director, METRANS, CSULB

Executive Committee

The Executive Committee is responsible for all METRANS project selections (research, education, and technology transfer) and for setting METRANS policies. Executive committee membership is a voluntary (unpaid) service activity. The level of leadership, expertise and dedication of the METRANS Executive committee is exemplary. Not only are these faculty leaders in their respective fields of research, all have significant administrative responsibilities at their respective universities. Current membership is:

Mahyar Amouzegar, Associate Dean for Research and Development, College of Engineering, CSULB

Anastasios Chassiakos, Professor of Electrical Engineering, Executive Director of Assessment, College of Engineering, CSULB

Maged Dessouky, Professor of Industrial & Systems Engineering, School of Engineering, USC

Genevieve Giuliano, Professor and Senior Associate Dean of Research and Technology, and Margaret and John Ferraro Chair in Effective Local Government, in the School of Policy, Planning, and Development, USC

Petros Ioannou, Professor of Electrical Engineering Systems and Director, Center for Advanced Transportation Technologies, USC

Joseph Magaddino, Professor of Economics and Chair, Department of Economics, CSULB

James E. Moore II, Professor of Industrial and Systems Engineering, and Public Policy and Management and Chair, Department of Industrial and Systems Engineering, USC

Marianne Venieris, Executive Director, Center for International Trade and Transportation, CSULB

Director

Genevieve Giuliano, Professor and Senior Associate Dean of Research and Technology, and Margaret and John Ferraro Chair in Effective Local Government, in the School of Policy, Planning, and Development is Director of METRANS. The Director is responsible for the overall management of METRANS, including reporting, matching fund solicitation, outreach, publications, education, supervision of the METRANS Administrator and other staff, project management and development of the center research agenda, and requests for proposals/qualifications. The center director is responsible for chairing meetings of the Executive Committee (joint USC/CSULB) and the Advisory Committee.

Deputy Director

Marianne Venieris serves as METRANS Deputy Director. Ms. Venieris has been responsible for the CSULB technology transfer activities since METRANS' inception. She is an experienced manager and the leading force behind METRANS' goods movement outreach activities. Ms. Venieris is Executive Director of CITT. The Deputy Director is responsible for collecting performance statistics related to CSULB activities, distributing information to CSULB faculty and students and overseeing the METRANS technology transfer program. The Deputy Director works under the direction of the Executive Director.

Associate Director of Research

Petros Ioannou serves as Associate Director of Research. He is responsible for the Los Angeles testbed research effort and the research proposal review process. The Associate Director of Research works under the direction of the METRANS Director.

Associate Director of METRANS-CSULB

Thomas O'Brien has been appointed Associate Director of METRANS-CSULB. This position replaces the Applied Research Program Manager position, which Dr. O'Brien also held. This position is responsible for managing METRANS research activities at CSULB, communications and outreach. The Associate Director is also involved in the development and implementation of professional training programs coordinated through CSULB.

Center Administrator

METRANS administrative tasks are divided between two positions. The METRANS Administrator, **Victoria Valentine**, is responsible for all Center administration except budgeting and accounting. The METRANS Account Coordinator, **Elizabeth Gatchalian**, handles all budgeting and accounting responsibilities. The Account Coordinator is part of the SPPD Business Office and reports to the SPPD Business Office Manager. Ms. Valentine is assisted by a part-time student assistant who serves as liaison for all student-related activities and coordinates the METRANS Seminar Series.

CSULB Administrator

Alix Traver serves as CSULB Administrator. The position is responsible for the collection of performance data at CSULB, and for communicating METRANS information to CSULB faculty, staff, and students. The position is also responsible for assisting with the METRANS Annual Conference, with the publication of METRANS News, and for developing center promotions. The CSULB Administrator works under the guidance of the Deputy Director and the Center Administrator.

Webmaster

The website is hosted by Urban Insight, the firm that redesigned the website. Our administrative staff has capability to update the website, making changes and updates in an efficient and timely manner.

Advisory Board

The Director has formed an Advisory Board composed of representatives from agencies and companies that participate in center activities. The Advisory Board is used to solicit suggestions for research, to assist in student job placements, and to assist in outreach and technology transfer activities. The Advisory Board meets annually.

Thomas O'Brien

Associate Director of METRANS, CSULB

METRANS Student of the Year, 2002, Tom O'Brien, now serves as METRANS Associate Director at CSULB. As a student, he recalls the chance to work on a 2000 METRANS goods movement conference as most pivotal in his career decision. "I was asked to help produce the proceedings. That research dealt with many of the same issues we face today, such as efficiency and accommodating growth, etc., and I became hooked. The type of work I wanted to do changed!" Previously, O'Brien's research interests had centered on the use of technology in urban development and how government agencies work together. "I'm still dealing with technology in urban development and government agencies working together, but my arena has changed to trade and transportation," he said. "So, my METRANS involvement has given me a lot of focus."

Randell Iwasaki
Director of Caltrans

Director of Caltrans, Randell Iwasaki has more than a personal interest in METRANS. "Caltrans provides full matching dollars to METRANS," he notes. "My job is to help shape transportation policy, so it was only natural for me to join the Advisory Board and be a part of the cutting-edge work METRANS is doing. I particularly enjoy the collaboration between the disciplines of engineering, policy, planning and public administration."

He is also especially proud of METRANS' research. "METRANS' work is related to the Los Angeles and Long Beach ports is truly incredible," he said. "METRANS' research is priceless because of the economic impact that vehicle delay has on the effectiveness of the ports." Noting a looming retirement epidemic among Baby Boomers, Iwasaki also values the professional training METRANS has provided, noting, "Through CITT, METRANS offers very progressive professional development programs."

METRANS Affiliated Research Faculty

METRANS has funded a total of 112 faculty at USC and CSULB, 104 of which are faculty affiliates of the METRANS Center (the remaining 8 are no longer at USC or CSULB, due to retirement or move). This number includes faculty who have received funds either through the regular research program or the applied research program. Keeping to the METRANS interdisciplinary theme, faculty are drawn from four branches of engineering (civil, electrical, industrial, and mechanical), computer science, as well as the social sciences, business, health sciences, public policy, planning, and public administration. These faculty serve as principal investigators on METRANS-funded projects, and have responsibility for overseeing individual research projects.

California State University, Long Beach

Dan Barber
Tracy Bradley Maples
Chin Chang
Anastasios Chassiakos
Robert Chi
Burkhard Englert
Mohammed Forouzesh
Robert Friis
Darin Goldstein
Lisa Grobar
Karl-Heinrich Grote
Min He
Ken James
Christine Jocoy
I-Hung Khoo
Melody Kiang
Shui Lam
Christopher Lee
Bei Lu
Joseph Magaddino
Wade Martin
Kristen Monaco
Tang-Hung Nguyen
Ali R. Nowroozi
Tom O'Brien
Emelinda Parentela
Cheryl Pruitt
Hamid Rahai
Grace Reynolds
Shadi Saadeh
Antonella Sciortino
Tariq Shehab-Eldeen
Seiji S.C. Steimetz
Reza Toossi
Jalal Torabzadeh
Fei Wang
Suzanne Wechsler
Xiaolong Wu
Steven Yamarik
Guy Yamashiro
Henry Yeh
Hsien-Yang Yeh

University of Southern California

Garrett Asay
Amol Bakshi
Tridib Banerjee
Jean-Pierre Bardet
Burcin Becerik-Gerber
Satish Bukkapatnam
Hanh Dam Le-Griffin
Maged Dessouky
Michael J. Driver
Fokion Egolfopoulos
Roger Ghanem
Genevieve Giuliano
Peter Gordon
Ramesh Govindan
Martin Gundersen
Randolph Hall
Hossein Hashemi
John Heidemann
Petros Ioannou
Erik Johnson
Behrokh Khoshnevis
Sven Koenig
Elias Kosmatapoulos
Martin Krieger
Bhaskar Krishnamarchari
John Kuprenas
Bumsoo Lee
LaVonna Lewis
Sami Masri
Najmedin Meshkati
Katharine Moore
James Elliott Moore II
Dowell Myers
Ulrich Neumann
Josh Newell
Fernando Ordonez
Gary Painter
Kurt Palmer
Qisheng Pan
Alice Parker
Andrea Polidori
Viktor Prasanna
Konstantinos Psounis
Mansour Rahimi
Christian Redfearn
Harry Richardson
Paul Ronney
Sheldon Ross
Lisa Schweitzer
Jefferey Sellers
Cyrus Shahabi
Constantinos Sioutas
David Sloane
Millind Tambe
Maria Todorovska
Mihailo D. Trifunac
Theodore Tsotsis
Detlof Von Winterfeldt
Chris Williamson
Hung Leung Wong
Maria Yang
Suya You

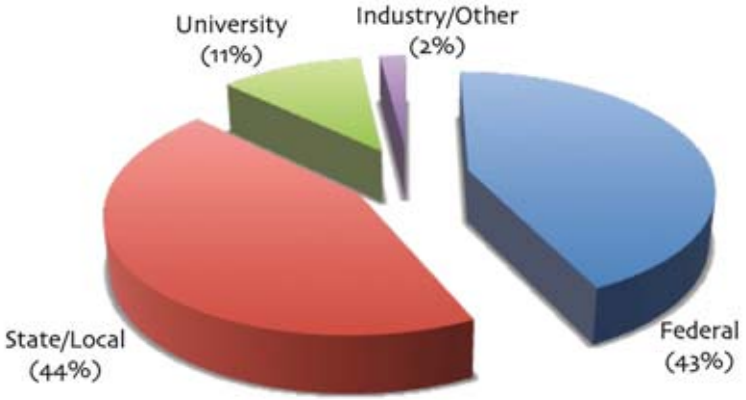
Finances

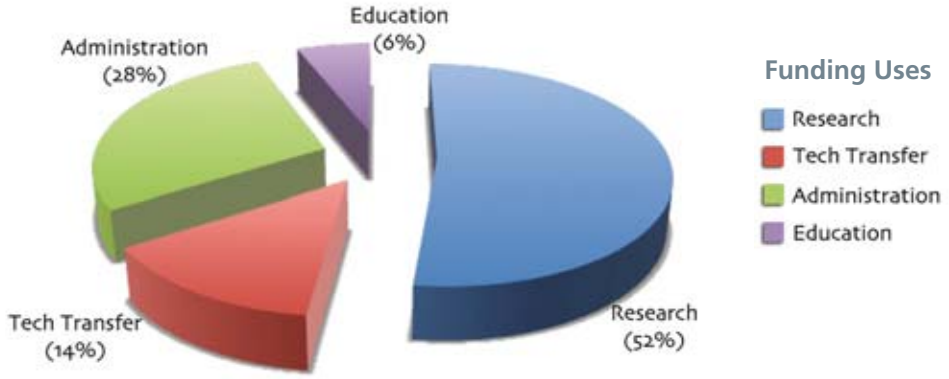
Funding Sources

METRANS received a total of $2,728,612 from all sources during this reporting period; the USDOT share accounts for 43 percent. The largest share continues to come from state and local sources: the full dollar-for-dollar match from the California Department of Transportation, plus additional contributions from state and local agencies. University matching funds account for 11 percent, with the remainder from private industry and other sources. The ratio of match to USDOT funding for 2008-09 is $1.33, compared to $1.55 in 2007-08.

Funding Uses

The chart below is based on allocated budget expenditures and includes budgeting of surplus funds from previous years. The total is about $1.8 million. This year research accounts for 52% of the allocated budget. Education accounts for a small proportion of funds because, as METRANS does not have a scholarship program, students are supported on research grants. Roughly ¼ of the research budget of a typical project is for student support, not including tuition contributions.





Often called America's front door, Southern California is home to the largest port complex in the United States, handling 40% of the nation's containerized trade. The Ports of Los Angeles and Long Beach offer a rich urban laboratory for METRANS researchers, drive many of our public outreach efforts, and provide internships and other educational opportunities for our students, the next generation of leaders in trade and transportation.

METRANS Advisory Board

Name	Title	Organization
Doug Beal (Emeritus Member)	Principal	Transportation Policy Consulting
Doug Failing	Director, District 7	Caltrans
Stephen Finnegan	Manager, Government Affairs and Public Policy	Automobile Club of Southern California and AAA Hawaii
Michael Flanigon	Director, Office of Technology	Federal Transit Administration
Anthony Furst	Director, Freight Management and Operations	FHWA
Fran Inman	Senior Vice President	Majestic Realty Co.
Hasan Ikhrata	Executive Director	Southern California Association of Governments
Randell Iwasaki	Chief Deputy Director	Caltrans
Gloria Jeff	Consultant	
Geraldine Knatz	Executive Director	Port of Los Angeles
Stephen Lantz	Director of Communications and Development	Metrolink (Southern California Regional Rail Authority)
Arthur Leahy	Chief Executive Officer	Los Angeles County Metropolitan Transportation Authority
Jack Levis	Director of Process Management	United Parcel Service
Domenick Miretti	ILWU Senior Liaison	Ports of Long Beach and Los Angeles
Glen Pentimonti	Former Vice President, Government Affairs	Maersk, Inc. (retired)
Mark Pisano	Senior Fellow, School of Policy, Planning and Development	University of Southern California
Richard Powers	Executive Director	Gateway Cities Council of Governments
Cindy Quon	Director, District 12	Caltrans
Barry Wallerstein	Executive Officer	South Coast Air Quality Management District

METRANS Transportation Center
USC | CSULB

650 Childs Way, RGL 238
Los Angeles, CA 90089-0626
213.821.1025
www.metrans.org

USC
UNIVERSITY
OF SOUTHERN
CALIFORNIA