

METRANS NEWS



CALIFORNIA STATE UNIVERSITY
LONG BEACH

Dedicated to solving metropolitan transportation problems through
research, education, and outreach.

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METRANS, a partnership of the University of Southern California and California State University, Long Beach, is a US Department of Transportation designated University Transportation Center. Its mission is to solve transportation problems of large metropolitan areas through research, education, and outreach.

METRANS RESEARCH

METRANS I-NUF 2015 Conference Engages 21st-Century Challenges and Technologies

In the opening plenary session for the 2015 International Urban Freight Conference, Greg Winfree, Assistant Secretary for Research and Technology at the U.S. Department of Transportation (DOT), urged attendees to “move beyond the approaches of the 20th century” to address future urban freight challenges.

Throughout the three-day event, scholars, policymakers, and industry leaders from 18 different countries revisited that theme from a range of perspectives to identify ways to make the movement of urban freight more efficient and sustainable.

In the Beyond Traffic framework, the DOT has identified 11 mega regions in the U.S. that need significant optimization, Winfree said in his prerecorded video presentation. “As more people and goods travel through those corridors,” he said it was critical to find greater capacity, efficiency, and sustainability. Winfree cited intelligent transportation systems (ITS) as a key to addressing future challenges. Connected vehicles will set the stage for autonomous vehicles in the next 20 years, he remarked, noting that there were autonomous vehicle pilot programs underway.

The topic of the following plenary session was supply chain optimization and collaboration in Southern California. There was consensus from all four panelists that access to accurate data was critical to improving supply chain efficiency. Kerry Cartwright, Director of Goods Movement for the Port of Los Angeles, said that truck trips to and from the Los Angeles and Long Beach ports would grow exponentially by 2035. He stressed that the problems in goods movement will be much more challenging in the future than they are today and in recent history. “The goods movement system at the ports is antiquated and in need of a true paradigm shift,” he said, adding that such a system would reflect best practices used by private firms like UPS and FedEx.



The 2015 I-NUF Middle Harbor Tour

Significant supply chain optimization would require the implementation of new “push,” “peel off,” or “free flow” systems, said Mike Christensen, Supply Chain Optimization Senior Executive Lead for the Port of Long Beach. Push, peel off, and free flow are terms used to describe processes of aggregating containers taken off ships into single stacks to make it more efficient for trucks to pick up and deliver containers to one customer or a group of customers who have coordinated their freight deliveries.

Establishing “a chassis pool of pools” was another top priority for the Port of Long Beach, Christensen said. Over the last three years, ocean carriers have largely ceased their practice of providing chassis with their containerized freight – opting to divest the equipment to intermodal providers or third party chassis management companies. In the aftermath, new chassis providers have struggled to meet the demand as new mega ships bring even more containers to the San Pedro Bay ports. (For further information about the chassis pool of pools concept, see related article in this issue on page 7.)

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Eleven New Tier One Research Projects Awarded

The METRANS Tier One University Transportation Center recently funded eleven new research projects totaling approximately \$870,000. Awards were selected from proposals submitted in response to its December 9, 2014, and March 24, 2015, requests for proposals (RFP). Each project is intended to increase U.S. economic competitiveness by improving transportation system performance in large metropolitan areas. The RFP specifically called for projects that sought to provide solutions to metropolitan transportation programs through development of improved technology, policies, operations, or management practices. The projects are as follows:

Theme	Project	Department	PIs/Co-PIs	Funding Amount
Understanding Passenger-Freight Interactions	15-01: Investigations of the Effect of Humid Air on NOX & PM Emissions of a CNG Engine (Caltrans)	CSULB College of Engineering, Department of Mechanical & Aerospace Engineering	Hamid Rahai	\$89,991
Achieving System Efficiencies	15-02: Simulation of liquefaction-induced damage of the Port of Long Beach using the UBC3D-PLM model (Caltrans)	CSULB College of Engineering, Department of Civil Engineering and Construction Eng. Management	Luis G Arboleda-Monsalve Tang-Hung Nguyen	\$34,999
Achieving System Efficiencies	15-03: Development of an Economic Framework to Evaluate Resilience in Recovering from Major Port Disruptions (Caltrans)	USC Sol Price School of Public Policy	Dan Wei Adam Rose	\$78,148
Achieving System Efficiencies	15-04: Integration of Passenger and Freight Rail Scheduling (Caltrans)	USC Viterbi School of Engineering, Daniel J. Epstein Department of Industrial & Systems Engineering	Maged Dessouky	\$99,975
Achieving System Efficiencies	15-08: Application of a Regional Multi-Modal Transportation System Performance Monitoring Framework (DOT)	USC Sol Price School of Public Policy	Gen Giuliano	\$100,000
Understanding Passenger-Freight Interactions	15-10: Route Choice Characteristics of Owner-Operated Trucks in Southern California Freeways (Caltrans)	CSULB College of Engineering, Department of Civil Engineering and Construction Engineering Management	Jin-Lee Kim	\$35,000
Achieving System Efficiencies	15-12: Optimum Routing of Freight in Urban Environments under Normal Operations and Disruptions using a Co-simulation Optimization Control Approach (DOT)	USC Viterbi School of Engineering, Hseih Department of Electrical Engineering	Petros Ioannou	\$100,000
Achieving System Efficiencies	15-13: Developing Affordable Housing Guidelines Near Rail Transit in Los Angeles (Caltrans)	USC Sol Price School of Public Policy	Raphael Bostic Marlon Boarnet	\$99,983
Achieving System Efficiencies	15-14: Quantifying the Impact of Next-Generation Modes of Delivery (DOT)	USC Viterbi School of Engineering, Daniel J. Epstein Department of Industrial & Systems Engineering	John Gunnar Carlsson	\$34,033
Understanding Passenger-Freight Interactions	15-15: The Decline in Inter- and Intra-Urban Mobility and its Impact on Passenger Travel (Caltrans)	USC Sol Price School of Public Policy	Gary Painter	\$99,945
Understanding Passenger-Freight Interactions	15-27: Spatial Dynamics of Warehousing and Distribution in California (Caltrans)	USC Sol Price School of Public Policy	Gen Giuliano	\$99,500

METRANS Expresses Appreciation to Reviewers

METRANS follows a rigorous peer review process in evaluating and selecting proposals for funding. The peer review process depends on reviewers from around the world. We would like to express our sincere appreciation to the more than 50 reviewers who contributed to our first round of year-two proposal reviews. For a full list of the reviewers, go to: <https://www.metrans.org/news/metrans-expresses-appreciation-reviewers>

METRANS Launched its First Research Seminar Series Event on September 16



Susan Handy

METRANS launched its 2015-16 Research Seminar Series with “The Future of Travel Demand,” presented by Susan Handy, Director of the National Center for Sustainable Transportation (NCST) and Professor in the Department of Environmental Science and Policy at the University of California, Davis. The event was jointly sponsored by METRANS and NCST.

Handy shared the soaring global demand for vehicles (projected to nearly double between 2010 and 2030) with the audience, and the resulting pollution, congestion, and safety impacts, among other concerns. She also shared the good news that vehicle miles

traveled (VMT) in the U.S. have shown a slight decrease in the past decade, but cautioned that we do not know why or if it will last. To effect and ensure lasting change, Handy suggested we work to discover “how we as individuals and households make choices about travel, and how and why these choices change” so that we can consider viable substitutes to vehicle use. Handy noted that this is particularly timely for California Metropolitan Planning Organizations and others who are charged to meet targets set by the State to reduce greenhouse gas emissions by reducing VMT. She concluded with the most effective strategies currently available to reduce VMT, including encouraging active transportation options such as bicycling.

The complete list of METRANS Fall 2015 Research Seminars can be found here: <https://www.metrans.org/seminars>

Six METRANS Researchers Awarded NCST Grants

The National Center for Sustainable Transportation (NCST) recently funded the research projects of six METRANS scholars. The grants, totaling approximately \$410,000, were selected from proposals submitted in response to NCST’s March 24, 2015, request for proposals (RFP). Projects are intended to advance NCST’s research program that targets “high-priority transportation issues for government, industry, and community leaders” in four topic areas: low-carbon infrastructure and efficient system operation, low-impact travel and sustainable land use, toward zero-emission vehicle and fuel technologies, and institutional change.

Topic	Title	Department	PIs/Co-PIs	Funding Amount
Resiliency of urban transportation systems	15-22: Introducing the Resilience into the State Transportation Network (Caltrans)	CSULB College of Engineering, Department of Computer Engineering and Computer Science	Xiaolong Wu	\$11,153
Resiliency of urban transportation systems	15-23: Sustainable Mitigation of Stormwater Runoff through Fully Permeable Pavement (Caltrans)	CSULB College of Engineering, Civil Engineering and Construction Engineering Management	Shadi Saadeh	\$99,986
Efficiency and Sustainability of Urban Freight	15-24: Analysis and Optimization Methods for Centralized Processing of Chassis (DOT)	CSULB Department of Engineering, Department of Electrical Engineering	Anastasios Chassiakos	\$90,000
Spatial patterns and the sustainability of passenger and freight transport	15-25: The Sustainability of Building Affordable Housing in Transit Oriented Developments (TODs), white paper (Caltrans)	USC Sol Price School of Public Policy	Raphael Bostic Marlon Boarnet	\$12,000
Spatial patterns and the sustainability of passenger and freight transport	15-26: Sustainability and Displacement: Assessing the Spatial Pattern of Residential Moves near Rail Transit (DOT)	USC Sol Price School of Public Policy	Marlon Boarnet Raphael Bostic	\$100,000
System management strategies to facilitate truck movements	15-28: Congestion Reduction through Efficient Empty Container Movement (Caltrans)	USC Viterbi School of Engineering, Daniel J. Epstein Department of Industrial & Systems Engineering	Maged Dessouky	\$99,998

New Video Highlights NCST Research and Objectives

The National Center for Sustainable Transportation recently developed a new video that showcases its research agenda and primary objectives. The video was produced and narrated by David Kelly, Director of Advanced Media Production at California State University Long Beach. Kelly filmed the video during Asilomar 2015 – the 15th Biennial Conference on Transportation and Energy: Transportation and Energy Policy in a Volatile World – at the Asilomar conference grounds in Monterey Bay, California.

The conference was hosted by UC Davis Institute of Transportation Studies. Roland Hwang, Transportation and Energy Program Director for the Natural Resources Defense Council, notes in the video that 40% of carbon pollution is caused by transportation and the goal should be to reduce that by 80% if we are to “avert dangerous global warming.” The video centers on how an effective relationship between academia, industry representatives, and regulators is crucial towards achieving sustainability goals. A link to the video will soon be posted to www.metrans.org.

Lee Kindberg, Maersk Director of Environment and Sustainability for North America, brought a shipping perspective to the panel. Maersk's number of ship trips has declined due to larger vessels, she said, noting that her firm had achieved a "40 percent reduction in the energy required to move one container per kilometer." Maersk's new target is a 60 percent reduction, she added.

Big data will play a profound new role in the delivery of goods and supply chain optimization in the years ahead, Kindberg said. Mark Hirzel, from the Los Angeles Customs Brokers and Freight Forwarders Association, shared the view that data is the key to making the supply chain more efficient. Customs brokers and freight forwarders seek predictability when it comes to the delivery of freight, he said, adding that data is the most important element in optimizing the supply chain.

"Moving the data is as important as moving the cargo," said Caryn Blanc, Owner and Managing Director of The Triangle Group, during a subsequent plenary session titled "The Sharing Economy and Urban Freight: Using Technology to Unlock Capacity at the Ports." Blanc said that her firm now free flows "10 percent" of their goods. "A year ago that number was zero," she said.

Brett Parker, President and Cofounder of Cargomatic, noted that peel off and free flow processes are available for companies with large container volumes but not for smaller clients. "How do you democratize the peel off and free flow process?" he asked, noting that there is not currently a technological layer in place to facilitate that process. "It is very difficult to track a container once it leaves the port," Parker said. Current transportation management systems have proprietary issues preventing sharing, he explained. "The technology is available now to create visibility in the future where there is none today."

Parker's firm, Cargomatic, offers a mobile application designed to connect shippers with qualified carriers who have unutilized capacity on their trucks. The application serves as a private-sector example of the emerging trend of the sharing economy in the goods movement sector.

Richard Backlund, Associate Division Administrator for the Federal Highway Administration, presented a demonstration of the Freight Advanced Traveler Information System (FRATIS), which is an appointment-based application that

provides freight-specific travel planning and performance information to optimize drayage operations. FRATIS, which will be fully deployed in 2018, serves as an example of a government-supported application to ensure that load movements are coordinated between freight facilities to reduce empty-load trips. Backlund said that dependability was essential for FRATIS and other systems to build a loyal base of customers.

The concluding plenary session for the conference, titled "Omni-channel Distribution, Fulfillment and the Last Mile: What's Happening on the Ground," gave attendees a long-range view of the impact that e-commerce will have on the last-mile delivery of urban freight. "Sixty five percent of shoppers research online before purchasing an item," said Ben Conwell, American Practice Leader of Cushman & Wakefield's eCommerce and Electronic Fulfillment Specialty Practice Group. To put that figure in perspective, he noted that there are more mobile devices on earth than there are humans.

Conwell then displayed a series of slides that conveyed the sea change in the way that people buy and receive goods. He showed the transition from a brick-and-mortar shopping experience to a world where the consumer is engaged in an online world with many portals for consumer information and consumer purchasing options. "The changes that we've seen over the last two years will pale in comparison to the changes we will see in the next three to four," Conwell predicted. Such changes will include new remote delivery partnerships, he said. "We're going to see a lot of multiparty fulfillment."

The boom in e-commerce will divert retail tax revenues away from municipal coffers, which will impact future land use decisions by city planners, noted Dr. Christian Redfearn, USC's Borstein Family Endowed Professor of Real Estate. Redfearn added that "cities are much denser than they were 20 years ago," which will impact last-mile delivery of urban freight. He also noted that Tesla Motors will break the U.S. car dealer mold with its plan to eliminate the traditional car dealership model in lieu of a strictly online model.

E-commerce-driven changes in last-mile delivery are problematic from a velocity standpoint," said Dr. Michael Browne from the University of Gothenburg. Policymakers will need to catch up,

he said, adding that the additional packaging materials associated with e-commerce deliveries will also raise additional environmental and related policy impacts. Conwell agreed that e-commerce "creates a lot more detritus." Throughout the conference, panelists and presenters from industry, government, and the private sector emphasized the need for access to urban freight data to improve communication and coordination and to enhance economic and environmental efficiencies. And while access to such data is currently hampered due to proprietary and interoperability issues, most in attendance agreed that information technology and automation innovations held considerable promise for the future of urban freight domestically and internationally.

I-NUF 2015 attendees experienced the future of automation first hand with a site tour of the state-of-the-art Middle Harbor project at Long Beach Container Terminal at the Port of Long Beach. "The facility sets the standard for technologically advanced and environmentally friendly marine terminals moving forward," said METRANS Director Genevieve Giuliano.

"This year's level of international participation and number of registrations exceeded all prior I-NUF numbers," Giuliano said. "By all metrics, I-NUF has reached a new critical mass and has established itself as the key conference for industry, governmental, and academic leaders who seek the most current research on international urban freight."

Other featured speakers at I-NUF 2015 included: Randell Iwasaki, Contra Costa Transportation Authority and Chair of the National Freight Advisory Committee; Laetitia Dablanc from The French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR); Mathieu Gardrat from Laboratoire d'Economie des Transports (LET-Lyon).

I-NUF took place October 21-23, 2015 in Long Beach, California. The conference was established in 2006 and is held every two years. Organized by the METRANS Transportation Center, the purpose of I-NUF is to provide a forum for multidisciplinary research on all aspects of urban freight. For further information about I-NUF 2015, go to: <https://www.metrans.org/2015-i-nuf-overview>

METRANS EDUCATION

METRANS Students Present Transportation Research at I-NUF 2015

Nine METRANS students presented their transportation research at the METRANS International Urban Freight Conference (I-NUF).

Doctoral students Quan Yuan, Sanggyun Kang, and Nathan Huston, from the USC Price School of Public Policy, shared their research on warehouse locations in urban metropolitan areas. Quan Yuan presented "Location of Warehouses and Environmental Justice" as part of the Hub & Network Strategies track, moderated by Philip Davies, Principal at Davies Transportation Consulting.

Sanggyun Kang's project, "Unraveling Warehousing Decentralization Trends in U.S. Metropolitan Areas," showcased in the Last Mile Case Studies track, moderated by John Keisler, Innovation Team Director at the City of Long Beach.

Nathan Huston presented "Examining Tradeoffs between Drayage Costs, Travel Time Reliability and Warehousing Costs in Determining Warehouse Locations in Relation to the Ports of Los Angeles and Long Beach" during the Planning Models track moderated by University of California, Davis Transportation Engineering Professor Miguel Jaller.

Han Zou, a fourth year Ph.D. student working with Dr. Maged Dessouky in the Department of Industrial and Systems Engineering, USC, presented "A Look-ahead Solution Framework for the Dynamic Vehicle Routing Problem."

Yihang Zhang presented "Highway Traffic Flow Control with High Volume of Trucks." Zhang is currently working toward a Ph.D. degree at the University of Southern California. His research focuses on control of transportation systems and nonlinear systems.

Doctoral students from the USC Viterbi School of Engineering, Lunce Fu, Yihuan Shao, and Yanbo Zhao, presented their research as part of the Assessment Tools and Technology track, moderated by Ömer Benli, Associate Dean of the College of Business Administration and Professor in the Department of Information Systems at California State University, Long Beach.

Masters student Varun Sharma from CSULB presented "Energy Scavenging Using Piezoelectric Sensors to Power in Pavement Intelligence Vehicle Detection Systems," in a session on New Technology moderated by CSULB CECS professor Dr. Burkhard Englert. Sharma works on this project with PI Dr. Mohammad Mozumdar from the CSULB Department of Electrical Engineering.



METRANS OUTREACH

Dablanc Presents VREF Urban Freight Initiative at UNCTAD Meeting

Laetitia Dablanc, the Research Director at the French Institute of Science and Technology for Transport, Development and Networks (IFSTTAR) and the Paris team leader for MetroFreight, presented the Volvo Research and Educational Foundations (VREF) Urban Freight Initiative at the United Nations Conference on Trade and Development (UNCTAD) Expert Meeting on Sustainable Freight Transport on October 14-16, 2015, in Geneva. The discussion addressed challenges and opportunities for urban freight systems, and how those changes can be best addressed to

seize opportunities, particularly in developing countries' megacities. Delegates from several countries (e.g. China, several Latin American countries, and Morocco) expressed specific interest in urban freight issues at the conference, and NGOs such as Climate & Clean Air Coalition, The Partnership on Sustainable, Low Carbon Transport (SLoCaT), The International Council on Clean Transportation (ICCT), and the Smart Freight Centre expressed interest in further developing contacts with VREF.



METRANS EDUCATION

Conway Discusses New Urban Freight Course on TransCast

MetroFreight researcher Dr. Alison Conway recently joined TransCast host Mat Kaplan for a conversation about a pioneering urban freight pilot class she developed and taught. Dr. Conway, an Assistant Professor in the Grove School of Engineering at City College of New York (CCNY), successfully offered the course online to Ph.D., masters, and senior undergraduate Civil Engineering students from CCNY and masters and Ph.D. students in Urban Planning from USC in Spring of 2015.

Lectures were webcast between classrooms in New York and Los Angeles, allowing students to interact with each other in real time. The class was developed in response to a comprehensive study conducted by the MetroFreight team to assess gaps in training and education in the study of urban freight transportation. To listen to a recording of the TransCast interview, go to: <https://www.metrans.org/transcasts#sthash.IFoV5gC4.dpuf>

METRANS RESEARCH

METRANS Researchers Awarded Multidisciplinary Research Grant from NSF

METRANS Associate Director of Research Petros Ioannou, METRANS Associate Director of Special Programs Maged Dessouky, and METRANS Director Genevieve Giuliano received an \$800,000 research award from the National Science Foundation (NSF) Cyber-Physical Systems program entitled, "Cyber Physical Regional Freight Transportation System." The research will focus on optimization and control techniques (together with real-time simulation models) to improve performance of complex networks, specifically freight transportation systems. The fundamental idea is to balance demand across routes, time periods, and modes (rail and truck). This research will also incorporate policy and institutional constraints directly into the optimization models. Ioannou, Professor, Electrical Engineering Systems and Director, Center for Advanced Transportation Technology, Viterbi School of Engineering (VSoE), University of Southern California (USC), will serve as Principal Investigator (PI).

The grant "represents the best of what can happen when we foster and support multidisciplinary research," remarked Co-PI Giuliano, Professor and Ferraro Chair in Effective Local Government at the USC Price School

of Public Policy. "Through our years working together in METRANS we have learned a lot about our respective fields, and that has led to ideas about how we might pool our knowledge and perspective to address new problems," she said. "This grant award is testimony that working across disciplines can pay off. One of the great things about cross-school research centers is the environment they provide for these types of collaborations."

Dessouky, Co-PI, Professor at the USC Daniel J. Epstein Department of Industrial and Systems Engineering (VSoE), finds this research particularly timely. "Today's logistics environment is very fragmented resulting in a number of system wide inefficiencies. Taking a systems perspective and balancing the freight workload across mode and time has the potential to significantly reduce congestion and bottleneck points in the transportation network. A number of policy issues (e.g., what incentive structure must be created for participation) must be addressed by the research for the developed optimization and control algorithms to be applicable to the freight operating environment."

New Faces at METRANS

METRANS Welcomes Visiting Scholar from China



Dr. Peijun "Paige" Zhuang

Dr. Peijun "Paige" Zhuang recently joined the METRANS team as a visiting scholar from China. During her one-year residence, Zhuang will work out of the CSULB METRANS offices, where she will conduct research on the ports of Long Beach and Los Angeles within the context of the global supply chain.

Dr. Zhuang's research interests are port and urban geography with a focus on maritime logistics.

"I am very interested in maritime logistics issues

and how they relate to economic and governance policy," she said, adding that she is also interested in the impact of goods movement on nearby communities. An author of several books and textbooks and a range of peer-reviewed articles, Dr. Zhuang is a professor in the Logistics Department at Maritime College at Ningbo University. Ningbo, a city two hours south of Shanghai, is home to the second largest port in China. Dr. Zhuang earned her Ph.D. in Human Geography from the School of Resources and Environment Science at East China Normal University, Shanghai. Her dissertation was titled "Port City-Region in the Network of Global Maritime Logistics."

He served as project manager of a committee to modernize the Journalism and Mass Communication Department at CSULB as part of a successful reaccreditation campaign. He also served as a consulting editor for the book manuscript *Educating the Excluded: What Led to the Mandate for Educational Opportunity at California State University*, which will be published by the CSU Board of Trustees later this year. He was contracted by the Ukleja Center for Ethical Leadership to serve as communications director to create common cause for collaborative ethical research involving faculty across all departments on campus.



Dr. Sandip Chakrabarti

Chakrabarti Appointed METRANS Postdoctoral Scholar – Research Associate

METRANS recently selected Dr. Sandip Chakrabarti as its first Postdoctoral Scholar – Research Associate. Dr. Chakrabarti was awarded a Ph.D. in Urban Planning and Development from USC's Sol Price School of Public Policy in 2015. His dissertation was titled "The Demand for Reliable Travel: Evidence from Los Angeles and Implications for Public Transit Policy." His postdoctoral research will include:

enhancement of the Archived Data Management System (ADMS), a data archive drawn from real-time traffic information sources in the Los Angeles region; the application of a regional multi-modal transportation system monitoring framework; and an analysis of the decline in inter- and intra-urban mobility and its impact on passenger travel.

Dr. Chakrabarti came to USC from India. He received a master's degree in city planning from the Indian Institute of Technology Kharagpur in 2008 and a bachelor's degree in architecture from Jadavpur University, Kolkata in 2006. He worked as a planning consultant in New Delhi between 2008 and 2010.

Reeb Named CITT's New Director of Research

Dr. Tyler Reeb was recently named CITT's Director of Research. In his new role, Dr. Reeb will facilitate research efforts conducted by METRANS scholars and also serve as the Associate Director of the Southwest Transportation Workforce Center, one of the four METRANS research centers. He previously served as a Project Manager for CITT and as the editor of *METRANS NEWS*. He has served as a consulting editor, project manager, and communications



Dr. Tyler Reeb

director for a range of business, governmental, and educational clients.

METRANS OUTREACH

SCAG: A Longstanding METRANS Partner in Research and Student Engagement



Hasan Ikhata

With the Southern California Association of Governments (SCAG) celebrating its 50th anniversary this year, it is an apropos time to also highlight the Joint Powers Authority's longstanding commitment to the METRANS Associates Program.

"SCAG is proudly celebrating its 50th anniversary this year," said Hasan Ikhata, Executive Director of SCAG. "In those 50 years, we've learned that building partnerships is critical to solving our region's transportation and air quality challenges."

METRANS Director Genevieve Giuliano, who served as Ikhata's advisor during his graduate studies at USC, shares the same enthusiasm for the SCAG-METRANS partnership. "SCAG has been a tremendous partner in terms of sharing data and in engaging METRANS students by providing internship and job opportunities," she said. Several of our METRANS graduates have taken positions as members of SCAG's transportation modeling division," she added. In total, nearly 100 METRANS students have been or are currently involved in internship or employment opportunities at SCAG.

The SCAG region encompasses six counties – Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura – and 191 cities in an area covering more than 38,000 square miles. This vast Southern California region contains virtually every major transportation challenge facing the nation – making SCAG an ideal research partner for METRANS. Under federal law, SCAG is designated as a Metropolitan Planning Organization and under state law as a Regional Transportation Planning Agency and a Council of

Governments. Additionally, SCAG includes six County Transportation Commissions, which are responsible for developing and implementing transportation projects, programs, and services throughout the six-county region. SCAG also represents Native American tribes and Air Quality Districts.

The partnership with SCAG gives METRANS researchers access to important policy discussions and to information about the development of studies and reports in response to new government requirements including, but not limited to, critical long-range regional transportation plans, sustainable community strategies, growth forecasts, regional transportation improvement programs, regional housing needs allocations and a portion of the South Coast Air Quality management plans. Founded in 1965, SCAG has expanded its governing Executive Committee and developed regional districts over the years to provide more broad-based representation of Southern California's cities and counties.

"We're happy to have built a relationship with METRANS, and SCAG's participation in the Associates Program is forging stronger linkages between universities, local governments and businesses," Ikhata said. "We look to METRANS especially to help nurture the coming generations of regional transportation planners and innovative thinkers that will help improve the quality of life for all of Southern California."

Since 2013, the METRANS Associates Program has promoted collaboration between leaders in academia, industry, and governmental leaders to share new trends and best practices in all modes of transportation. For additional information about the METRANS Associates Program, contact Susan Bradforth at 213-821-3650 or bradfos@price.usc.edu. For further information about SCAG, go to: www.scag.ca.org.



METRANS RESEARCH

Forthcoming METRANS Report to Assess Benefits of Port-wide Chassis Pools

A team of researchers led by CITT Executive Director and METRANS Associate Director Thomas O'Brien and CITT Director of Research Tyler Reeb are nearing completion of a report on the potential benefits of the port-wide chassis pools at the ports of Los Angeles and Long Beach. The study is also examining incentives for truckers, terminal operators, and ocean carriers to take part in shared equipment management strategies.

Traditionally, ocean carriers operating in the U.S. have owned their own chassis and provided them to truckers for their use in transferring containers between the ports, distribution and intermodal facilities as part of local trips (or drays). However, in recent years, ocean carriers have divested themselves of those chassis – leaving the terminals, truckers, and the ports to figure out alternative systems. In response, private-sector third-party providers implemented the port-wide pool of pools system. The pool of pools system enables truckers to pick up and drop off chassis at terminals served by the three gray pool contributors: Flexi-Van Leasing, TRAC Intermodal, and Direct Chassis Link. Those gray pool contributors, which operate the majority of chassis used at the ports, have established a cooperative system to ensure the interoperability of chassis across the terminals at the ports.

"Our goal is to assess the impacts of the new chassis management system on the various freight stakeholders, including implications for local supply chains," said O'Brien, who is the principal investigator for the report.

"We are surveying a variety of key stakeholders such as truckers, terminal operators, the ports, rail, and gray chassis pool operators, who have first-hand experience with the transition from ocean carrier provision of chassis to the new port-wide pool of pools," O'Brien added.

Over the last several years, shipping lines have increasingly invested in megaships to increase profitability, which has increased the volume of containerized cargo when each ship arrives at the ports of Long Beach and Los Angeles. That trend has put additional strain on the chassis management systems at both ports. Assessing the impact of chassis management is important because chassis facilitate the movement of intermodal cargo from the ocean vessel to truck and freight rail. Inefficient chassis management can greatly slow down the productivity at the ports and cause unwanted congestion.

"Preliminary findings from the study highlight that stakeholders now have a better understanding of ways that impacts in one segment of the supply chain affect other segments," O'Brien said. "The study is also revealing that industry will likely move toward chassis owner-operator models because it is more financially sustainable, which means the pool of pools system would be a short-term intervention to an evolving situation at the Long Beach and Los Angeles ports."

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To learn more about MAP and its benefits, see www.metrotrans.org/metrans-associates-program

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