

METRANS NEWS



CALIFORNIA STATE UNIVERSITY
LONG BEACH

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

Summer 2016 Volume 15 Issue 2

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METRANS OUTREACH

CUTC 2016 Summer Meeting

Convenes Transportation Leaders from Across the Nation

The 2016 Council of University Transportation Centers (CUTC) Summer Meeting was hosted by METRANS in June. CUTC is the national association of university transportation research centers.

The meeting is held jointly with the U.S. Department of Transportation (USDOT) sponsors of the University Transportation Centers (UTC) program. It brought together leaders from throughout the transportation sector to discuss issues ranging from civic marketplaces and transformational technologies to UTC management and data sharing policies. "Innovation was the word of the day; the speakers made clear that our traditional models of education and research need an overhaul to meet the needs of the future transportation system," said METRANS Director Genevieve Giuliano.



METRANS Director Genevieve Giuliano addresses CUTC attendees.

The first day of the meeting included the UTC Directors meeting, as well as a tour of Hyperloop One's campus in the Los Angeles Arts District. The CUTC meeting began on day two, with introductions from Giuliano, Dean Jack H. Knott of the USC Sol Price School of

Public Policy, and METRANS Associate Director, CSULB Thomas O'Brien. Kevin Womack of the USDOT welcomed attendees to the conference and stressed the importance of bringing together research centers in order to be prepared for shifting transportation trends.

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METRANS OUTREACH

SWTWC Workforce Summit

Addresses Critical Advanced Transportation Issues

The Southwest Transportation Workforce Center (SWTWC) and the Mineta Transportation Institute co-hosted an exciting lineup of keynote speakers and panelists to address how to prepare the national workforce for the tremendous changes underway in the transportation sector. The April 29, 2016, summit was titled "Faster, Smarter, Cleaner, Greener: Developing the Transportation Workforce of the Future."

It convened thought leaders in transportation technology and workforce development to discuss career pathways in transportation and how to prepare the next generation of workers.

Dan Richard, Chair of the California High-Speed Rail Authority, was the keynote speaker for the morning session of the summit, and Carolyn Flowers, Acting

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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 Researchers Create Algorithms to Predict the Spatiotemporal Impacts of Traffic Incidents



Cyrus Shahabi



Ugur Demiryurek

METRANS researchers Cyrus Shahabi and Ugur Demiryurek of the Integrated Media Systems Center at USC's Viterbi School of Engineering published their most recent METRANS research in a report titled "Analysis and Prediction of Spatiotemporal Impact of Traffic Incidents for Better Mobility and Safety in Transportation Systems." The study used current and historical data from installed traffic sensors (known as loop detectors) to create models that predict the impacts of traffic incidents (collisions, road work, etc.), chiefly looking at both the severity and duration of resulting congestion. More than 15,000 loop detectors are installed on the Los Angeles County roadway network, and the study used information from the past five years to develop its algorithms. Traffic sensors collect crucial real-time traffic data, but are subject to rigorous wear and tear and frequently fail as a result. The algorithms offer a solution to this problem by filling in the gaps created when sensors fail, allowing for informed responses and improved planning.

Shahabi and Demiryurek's approach used Latent Space Modeling for Road Networks (LSM-RN), which utilizes both topology similarity and temporal correlations to create more accurate predictions. Additionally, the algorithms were designed to engage in both global and

incremental learning, making it a much more scalable system because it not only draws from a deep pool of data, but also manages that data more efficiently. Under the new paradigm, the algorithms would simultaneously receive new data from sensors and make forecasts while also incorporating the new data into the historical data, making future projections increasingly effective. The longer the algorithm is utilized, the more efficient it becomes.

Applications for these algorithms can be found in both the public sector and the private sector. State and municipal authorities are constantly trying to improve their ability to respond to traffic events and reduce the resulting congestion. By drawing from a deep pool of traffic data and continually adding new data into that pool, DOTs and other government authorities would be able to respond to traffic events more efficiently and offer more viable re-routing options. On the private end of the spectrum, this software could see countless uses, particularly in terms of navigation applications. While existing apps select routes by either using geographic distance alone or a snapshot of information, these algorithms enable the user's route to be optimized on the fly in response to traffic incidents and congestion.

METRANS OUTREACH

SAVE THE DATES: METRANS Fall Seminar Series Begins on September 7

METRANS has scheduled an exciting seminar series for the Fall Semester. Dates and presenters are listed below. Seminars are held at noon on the USC campus, and lunch is served. Seminars are recorded and available via YouTube. Watch for more information at www.metrans.org/seminars.

SEPTEMBER 7 – "Have App Will Travel: Comparing the Price & Speed of Fifty CTA & UberPool Trips in Chicago"
Jointly Sponsored by the American Planning Association USC Student Chapter (APA USC)

Speaker: Joseph Schwieterman

Visiting Scholar from DePaul University School of Public Services; Director, Chaddick Institute for Metropolitan Development

OCTOBER 12 – "Supply Chain Consolidation and Cooperation in the Agricultural Industry"

Speakers: Maged Dessouky

Professor of Industrial and Systems Engineering, USC Viterbi School of Engineering; Director, The Daniel J. Epstein Institute

Wentao Zhang

Ph.D. Candidate, Industrial Systems and Engineering, USC Viterbi School of Engineering

NOVEMBER 10 – "Case Studies on Land Use Effects of Rail Transit in China"

Jointly Sponsored by IPPAM Graduate Students Association

Speakers: Haishan Xia

Professor/Dean, School of Architecture and Design, Beijing Jiaotong University

Chun Zhang

Associate Professor/Vice Dean, Dept. of Urban Planning, School of Architecture and Design, Beijing Jiaotong University

NOVEMBER 16 – "Mitigating Urban Freight Through Effective Management of Truck Chassis"

Jointly Sponsored by the Center for International Trade and Transportation (CITT)

Speaker: Thomas O'Brien

Executive Director, Center for International Trade and Transportation; Associate Director of CSULB Programs, METRANS

METRANS OUTREACH

2016 Town Hall Meeting Brings Together Government, Industry, and Academia

Leaders from the San Pedro Bay port complex convened to discuss collaboration that enhances the efficiency and economic competitiveness of the supply chain at the “Partners in Innovation” Town Hall meeting on March 30, 2016. The night began with introductory remarks by METRANS Associate Director, CSULB Thomas O’Brien, who noted that leaders from various facets of transportation “need to recognize the importance of innovation and collaboration in a constructive way.”

U.S. Congressman Alan Lowenthal then took the podium, emphasizing the progress the ports have made. “In 1992, there were million-pound piles of coal dust and dirty practices that endangered local communities and made business less efficient,” he noted, but added that “though we have come a long way, we still need more of a commitment to national infrastructure and stable funding for projects that will improve efficiency and productivity.”

The agenda included a tribute to Domenick Miretti who passed away in February. Miretti was a long-time contributor to the international trade community and International Longshore and Warehouse Union Liaison to the ports of Long Beach and Los Angeles. He was one of the founders of the Town Hall and one of its biggest champions. O’Brien pointed out that the theme of this year’s Town Hall, Partners in Innovation, was one that Miretti strongly endorsed.

Bill Mongelluzzo, Senior Editor of the *Journal of Commerce*, moderated a panel discussion that included: Tracy Burdine, Director of Client Services, Yusen Terminals; Michael Christensen, Senior Executive Lead, Supply Chain Optimization, Port of Long Beach; Fred Johring, President, Golden State Express/Logistics; Steve Miller, Chief Procurement Officer, P.F. Chang’s; and Paul Trani, President, ILWU Local 63, Marine Clerks Association. The panel discussion centered around pushing freight out of the terminals in order to respond to increased freight volume and the rise of megaships like the CMA CGM Benjamin Franklin. Among proposed solutions were peel-off systems, increased use of automation, and the establishment of



From left to right: Omeed Tabiei, Hyperloop One; Eric Shen, Maritime Administration (MARAD) of the U.S. Department of Transportation (USDOT); Lauren Brand, MARAD USDOT; U.S. Congressman Alan Lowenthal; Amy Grat, ITEP CEO; and METRANS Director Genevieve Giuliano.

24/7 terminals. Miller encapsulated the discussion by pointing out that “the best solution is a combination of human and automated labor. Not tech or no tech. We need to work together and use a variety of methods to attain efficiency goals.” When the formal panel discussion ended, the audience asked questions pertaining to the topics discussed.

METRANS Director Genevieve Giuliano closed off the night’s proceedings, summarizing the evening’s discussions. In particular, she encouraged leaders from both ports and the various silos of transportation to continue their efforts towards sharing information and working together to confront common obstacles. Though she applauded the sense of community and cooperation, she also emphasized a need to delve deeper into contentious issues in the future.

Both the event video presentation and the footage of the proceedings are available for viewing online at <http://www.amp.csulb.edu/CCPE/CITT/>.

METRANS EDUCATION

METRANS Debuts Student Podcasts



Rodd Amos

Podcasts have become a regular component of METRANS media offerings, but have primarily included the voices and insights of practitioners, professors, and researchers. In an effort to incorporate a more diverse selection of viewpoints, these podcasts feature METRANS students and their guests explaining METRANS transportation research and other transportation issues in their own words. Three podcasts have been produced so far, and the intent is that they become a regular feature on the METRANS website. The first podcast featured 2015 METRANS Student of the Year Arnold Valdez as he analyzed USC Professor Lisa Schweitzer’s recent work, “Planning

and Social Media: A Case Study of Transit Stigma and Twitter.” The study focused on figuring out why public transit services have been stigmatized, and how organizations can improve their perception. Lynn Feng, a second year master’s student at the USC Price School, sat in for the second recording, which highlighted UCLA Professor Evelyn Blumenberg’s research, “The Travel Behavior of Millennials,” and how changing attitudes toward vehicle ownership will change the face of urban transportation. Finally, the METRANS Student Podcasts host, Rodd Amos, brought in second-year Master’s student Arpita Sharma. She talked about The Green Streets Initiative created by Los Angeles Mayor Eric Garcetti, focusing on the support of LADOT General Manager Seleta Reynolds and continuing efforts to reduce speeding, improve road infrastructure, and increase bike accessibility.

Quan Yuan Awarded Volvo Research & Educational Foundations Study Visit Grant



Quan "Jack" Yuan

Quan "Jack" Yuan, Ph.D. candidate in Urban Planning and Development at the University of Southern California, was recently awarded a study visit Grant from the Volvo Research & Educational Foundations (VREF). Yuan is currently conducting research at the MetroFreight Center of Excellence, working under the direction of Professor Genevieve Giuliano. He is examining the environmental impacts of warehouses and distribution centers on local communities in Southern California.

and coordinate the spatial distribution of logistics facilities. He attended the Innovative Urban Freight Management Systems event in Paris on May 26 and met with Professor Laetitia Dablanc at the French Institute of Science and Technology for Transport, Development and Networks (IFFSTAR) at University of Paris-Est, in Paris; He also learned how urban freight practices in Europe, such as the development of urban consolidation centers and green logistics schemes, contribute to mitigating environmental externalities of urban freight activities.

Highlights of Yuan's planned efforts include a literature review, field trip reports and interviews with relevant stakeholders to understand how local government and/or communities deal with warehousing development and potential environmental impacts of freight activities. Now that the study visit has concluded, a formal report will be produced on the spatial patterns and regulations of warehousing location. According to Jack, "The VREF Study Visit Grant offers me a great opportunity to work with other researchers in different countries and cultures, to develop an effective network of sharing new ideas and research progress, and to observe how our research efforts could possibly make the world better. It would be a wonderful experience for every freight researcher."

For this prestigious VREF study grant, Yuan visited Gothenburg Urban Freight Platform in Gothenburg, Sweden between May 2 and June 2, 2016. He worked with Michael Browne, Professor of Logistics and Urban Freight Transport, and other colleagues on urban freight research, especially on the spatial location of warehouses and distribution centers. Yuan visited European cities including Gothenburg, Stockholm, Copenhagen, and Paris to study how researchers and planners help plan, regulate

METROFREIGHT UPDATE

Gothenburg VREF Conference Demonstrates Global Emphasis on Urban Freight

Inspired by the METRANS biennial International Urban Freight (I-NUF) conferences, the Volvo Research and Educational Foundations (VREF) is hosting a conference on urban freight in Gothenburg, Sweden from October 17 through 19, 2016. The conference will have two parts: formal research presentations on current issues in urban freight, and panels and break-out sessions on planning for the future, with participants drawn from academia, government, and industry. Researchers and graduate students of the MetroFreight Center of Excellence, one of the METRANS centers, will present their research and participate in panel discussions. Researchers and students from MetroFreight partner organizations will also present at the conference. Those partnering organizations are: USC/CSULB METRANS, the University Transportation Research Center (URTC), a consortium of 17 universities in the New York Region, housed at City College of New York (CCNY); the French Institute of Science and Technology for Transport, Development and Networks (IFFSTAR) at University of Paris-Est, in Paris; and the Korea Transport Institute (KOTI) in Seoul.



METRANS OUTREACH

METRANS Connects Students with Professionals in "Lunch with a Practitioner" Series

METRANS' "Lunch with a Practitioner" series has featured leaders from industry, government, and academia, and the series will continue in the fall.

California High Speed Rail Project (CHSRP) planners presented at a student seminar co-sponsored by METRANS on February 19, 2016, along with the USC chapters of the American Planning Association, and the Institute of Transportation Engineers. The presenters first discussed the progress of the CHSRP and the challenges of routing through the San Gabriel Mountains. The team compared CHSRP to nascent technologies like Hyperloop and maglev, noting that though these new developments are exciting, high-speed rail has a longer history of use, better safety ratings, and higher passenger capacity. Finally, they addressed the most often asked questions about the CHSRP, including the projected speeds, cost of tickets, and scheduling of the project.

METRANS also hosted Micheal Lin, Ph.D., a research analyst at the Milken Institute, on April 7, 2016. Lin specializes in the fields of human capital

and regional economics, and has published two book chapters on community planning and shrinking cities while contributing to multiple policy reports on green buildings, sustainable development, and informal housing. His current research explores the connection between talented individuals and urban development. Lin received his Ph.D. from USC.

"These meetings provide valuable resources to students interested in breaking into the transportation industry," said METRANS Assistant Director Victoria Valentine Deguzman. She noted that at those lunches "students can compare their theoretical knowledge with practical experience gained in the field, and get to ask both topic specific questions and broader inquiries about finding employment and building their appeal to firms."

As the fall approaches, further "Lunch with a Practitioner" meetings will continue to provide students with access to officials and business leaders who offer valuable knowledge and expertise.

METRANS OUTREACH

SWTWC Workforce Summit

Addresses Critical Advanced Transportation Issues *continued from Page 1*



Administrator of the Federal Transit Administration, keynoted the afternoon session. Panelists included elected officials, directors from public transportation agencies, and leaders from industry and academia. SWTWC Director and

METRANS Associate Director CSULB Thomas O'Brien also played a major role in the proceedings, providing both an introductory overview for the day and moderating the panel discussion in the afternoon.

The prestigious lineup of participants engaged a range of pressing workforce questions including: How can schools work with industry leaders to ensure relevant education and training programs? What specialized skills will be needed to plan and construct a world-class transit system? Which technologies will be critical in developing clean, efficient freight transportation systems that can compete at the regional, state and national levels? The key takeaway from the discussion was that workers will need to be technologically savvy, while working in capacities that break down traditional workplace siloes. O'Brien noted that "the transportation worker of the future will have an integrative skillset which brings together IT, project management, and problem solving in order to keep up with rapidly changing technologies."

The Mineta Transportation Institute is based at San Jose State University and the Southwest Transportation Workforce Center is located at the California State University, Long Beach METRANS offices.



SWTWC Director Thomas O'Brien





Radhika Naik

METRANS EDUCATION

CSULB MSSCM Student Awarded World Trade Week Scholarship

The Los Angeles Area Chamber of Commerce recently awarded student scholarships during its World Trade Week (WTW) event. Radhika Naik, a student in the CSULB Master of Science in Supply Chain Management (MSSCM) program, was the recipient of the University Level Scholarship. She was previously recognized for her commitment to transportation as she was awarded a scholarship by the Los Angeles Transportation Club in January.

The WTW awards are presented to students who show outstanding promise and commitment in the classroom along with involvement in their field of study. Naik hopes to make a positive impact on the transportation sector by "building models which optimize all variables to make the transportation industry more effective and efficient."



Thomas Check

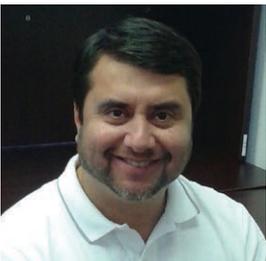
METRANS OUTREACH

METRANS Students Awarded Scholarships

Numerous METRANS Students were recognized for awards and scholarships in the Spring, including: **Fred Chang** (Bachelor of Science, Price School of Public Policy; Emery E. Olson Award), **Nathan Hutson** (Ph.D., Price School of Public Policy; Railway Association of Southern California Scholarship, \$5,000), **Thomas Check** (Progressive degree, Bachelor and Master of Science in Civil Engineering with Transportation Engineering Focus, Viterbi School of Engineering; RASC Scholarship, \$3,000), **Lynn Feng** (MPL, Price School of Public Policy; 2015 WTS Scholarship, \$4,000), **Braulio Hoyos Monti** (Bachelor of Science, Price School of Public Policy; RASC scholarship, \$3,000), **Eun Jin Shin** (Ph.D., Price School of Public Policy; Dissertation Completion Fellowship), **Jack Yuan** (Ph.D., Price School of Public Policy; VREF Study Visit Grant), **Arnold Valdez** (MPL, Price School of Public Policy; METRANS Student of the Year and Eno Future Leaders Development Conference Fellow), **Axel Hellman** (MPL, Price School of Public Policy; American Public Transportation Foundation Scholarship), **Edward Loera** (Bachelor of Science, Price School of Public Policy; 2015 WTS Scholarship, \$6,000), **Rachel Junken** (MPL, Price School of Public Policy; Dean's Certificate of Merit, Gordon Whitnall Award), **Justin Bleeker** (MPL, Price School of Public Policy, Lowdon Wingo Prize), **Emily Finkel** (MPL, Price School of Public Policy; AICP Outstanding Planning Student Award), **Benjamin Frazier** (MPL, Price School of Public Policy; Price Graduating MPL Student Award), **Arpita Sharma** (MPP, Price School of Public Policy; Robert P. Biller Award).



Lynn Feng



Jaime Vasquez

Mai Farrag, a student in the Masters of Science in Supply Chain Management (MSSCM) program at CSULB, received a \$1,350 scholarship to attend the Institute of Supply Management's 2016 Annual Conference in Indianapolis sponsored by Capital One. The scholarship covered her conference registration and \$1,000 was awarded to Mai at the Connection Reception on Tuesday, May 17, 2016. Additionally, the Port of Long Beach awarded \$15,000 in scholarships to students in the Global Logistics Specialist (GLS) and MSSCM programs during their annual Celebrating Education event. Two MSSCM students, **Evelyn Kim** and **Wilson Ton**, received \$5,000 each, while two GLS students, **Ligia Fitzgerald** and **Jaime Vasquez**, received \$2,500 each. Michelle Morales, a Bachelor of Business Administration student, also won a \$3,000 Cal RASC Scholarship.

METRANS EDUCATION

Arnold Valdez Participates in ENO Future Leaders Development Conference



Arnold Valdez

METRANS student Arnold Valdez recently represented METRANS at the ENO Future Leaders Development Conference. Every year, the ENO Center for Transportation hosts 20 of the nation's strongest graduate students as "ENO Fellows" for a week. Students meet with leaders from industry, government, and non-profit organizations for a rare opportunity to network and build professional relationships. Candidates are nominated early in the year and are evaluated based upon their academic achievements, degree program, achievements outside of the classroom, leadership abilities, and commitment to attaining a career in the field of transportation. Valdez, who was also awarded METRANS Student of the Year at this year's TRB Conference, said that "the conference provided an excellent opportunity to receive much needed exposure to the federal role in transportation. My education thus far has been focused on local, regional, and state policy and issues, [but] as my future career takes me back east, this will help me familiarize myself with the national policy context and processes of transportation." Valdez will be attending The Ohio State University in the fall to pursue a Ph.D. in City and Regional Planning.

METRANS ASSOCIATES PROGRAM

METRANS Partners with Aerospace Corporation

Aerospace Corporation joined the prestigious ranks of the METRANS Associates Program earlier this year. Aerospace Corporation is a large aerospace firm that employs over 3,500 people, 70 percent of whom are technical specialists with advanced degrees (700 with Ph.D.'s). Aerospace Corporation is involved in numerous transportation ventures, both as consultants and contractors.

Though based in El Segundo, California, Aerospace has offices throughout the country. In 2012, Aerospace worked with San Jose's Mineta International Airport, along with METRANS Director Genevieve Giuliano, on its "Automated Transit Network Feasibility Evaluation." Furthermore, the Vaeros division of Aerospace researches green technology, critical infrastructure resiliency, remote sensing technologies, and carries out technological consultation,



all crucial to transportation innovation. Though often not geared directly toward the transportation sector, the technologies and best practices developed by Aerospace Corporation frequently intersect with transportation oriented developments.

In addition to contributions to research and technological development, Aerospace Corporation also funds affinity groups to promote diversity in the workplace, organizes an annual toy and gift drive for underprivileged children, offers youth internships for inner-city students, and has created a green initiative to make its facilities as efficient and clean as possible. Giuliano noted that "we look forward to working with Aerospace and are grateful for the support. They will be a valuable partner in the pursuit of improving transportation education and research."

METRANS OUTREACH

CUTC 2016 Summer Meeting

Convenes Transportation Leaders from Across the Nation *continued from Page 1*

After Womack's remarks, the podium was opened to presentations, featuring: Alasdair Cain, Santiago Navarro, Denise Dunn, Lydia Mercado, and Alex Schroeder of the USDOT; and a panel featuring Stan Caldwell, Carnegie Mellon University; Ugur Demiryurek, USC; and Ali Maher, Rutgers University.

The conference keynote speaker was Joshua Schank, Chief Innovation Officer for LA Metro's new Office of Extraordinary Innovation (OEI). Schank highlighted many themes in his presentation, but most significant was the notion that public transit provider's will need to take proactive steps to maintain relevance as private options like Uber, Lyft, and Zipcar gain prominence. In his words, "radical change requires radical action." He also explained the role of the OEI, noting that institutional inertia is the greatest impediment to necessary developments, and that creating specialized units for enacting innovation is a crucial step towards overcoming that obstacle.

Following the keynote address, sessions continued with presentations from: Janet Daly, Transportation Research Board; Hau Hagedorn, Portland State University; Robin Kline, USDOT; Caesar Singh, USDOT; Amy Stearns, USDOT; and Dawn Tucker-Thomas, USDOT. The day concluded with an L.A. by Transit tour; attendees viewed L.A.'s most recent transit-oriented developments and their impacts. The tour ended at City Hall, where the CUTC dinner took place on the 27th floor of the Bradley Tower overlooking the city.

The final day of the conference began with remarks from outgoing CUTC President Joel Volinski of the University of South Florida and incoming CUTC President Jill Hough of North Dakota State University. Those remarks were followed by two panel discussions featuring: Tyler Reeb, CSULB; Lily Elefteriadou, University of Florida; Jim Misener, Qualcomm Technologies, Inc.; Santiago Navarro, USDOT; Jody Bohn Baldock, North Dakota State University; Valerie Flefer, Integrated Global Dimensions;

Karen Philbrick, San Jose State University; and Melissa Tooley, Texas A&M University. After lunch, Giuliano moderated a panel on transformational technologies, which featured: David Kuehne, Federal Highway Administration; Joe Crabtree, University of Kentucky; and Shashi Nambisan, University of Tennessee. As these panels came to a close, the remaining time was spent with the CUTC Business Meeting and the Research Education and Training Reauthorization Coalition (RETRC) meeting. The day ended with the Executive Committee Dinner held at the Biltmore Hotel.



Joshua Schank, Chief Innovation Officer for LA Metro's new Office of Extraordinary Innovation

"The event's offering of panel discussions, individual presentations, and site tours made the time both productive and enjoyable for attendees," said Giuliano.

The 2017 CUTC Summer Meeting will take place in Buffalo, New York.

METRANS Transportation Center

Sol Price School of Public Policy
University of Southern California
Ralph and Goldy Lewis Hall 107
Los Angeles, CA 90089-0626

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Sol Price School of Public Policy
University of Southern California
Ralph and Goldy Lewis Hall 107
Los Angeles, California 90089-0626

Phone: 213-821-1025 Fax: 213-740-0001
Email: giuliano@usc.edu

CSULB Phone: 562-985-2872
Fax: 562-598-0684
Email: thomas.obrien@csulb.edu



CALIFORNIA STATE UNIVERSITY
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VISIT US ON THE WEB
WWW.METRANS.ORG

METRANS News Editor: Tyler Reeb
Design: Dann Froehlich Design

METRANS MANAGEMENT TEAM

Genevieve Giuliano, *Director*

Professor, Ferraro Chair in Effective Local Government, Price School of Public Policy, USC

Marlon Boarnet, *Associate Director, National Center for Sustainable Transportation*

Professor, Chair, Dept. of Urban Planning and Spatial Analysis, Price School of Public Policy

Maged Dessouky, *Associate Director of Special Programs*

Professor, Epstein Dept. of Industrial and Systems Engineering, USC

Petros Ioannou, *Associate Director of Research*

Professor, Electrical Engineering Systems; Director, Center for Advanced Transportation Technology, Hsieh Dept. of Electrical Engineering, USC

Thomas O'Brien, *Associate Director, CSULB*

Executive Director, Center for International Trade and Transportation, College of Continuing and Professional Education, CSULB

Seiji Steimetz, *Member*

Professor and Chair, Dept. of Economics, College of Liberal Arts, CSULB

METRANS STAFF

Victoria Valentine Deguzman, Assistant Director, victoriv@price.usc.edu

Catherine Showalter, MetroFreight Project Manager, cshowalt@price.usc.edu

Alix Traver, METRANS Project Administrator, alix.traver@csulb.edu