# METRANS NEWS

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## METRANS RESEARCH: Josh Newell Remapping Commodity Chain Consequences



Josh Newell

Josh Newell is an urban geographer focused on sustainability. To remap the causal connections between conurbations in the age of global trade and global warming, he uses commodity supply chains to link spaces of consumption to spaces of production.

"I was always fascinated with where goods came from.

Linking together the different actors and stakeholders along supply networks all the way back to the raw materials, transport and manufacturing is the only way these commodity chains can have transparency," he explains. For example, his 2008 dissertation at the University of Washington traced the wood supply chains of do-it-yourself retailers like IKEA and Wal-Mart.

#### **Carbon Footprints and Public Policy**

A Research Assistant Professor at USC's School of Policy, Planning, and Development during the 2009-10 academic year, he was also Program Manager at the Center for Sustainable Cities. Newell gave a METRANS-sponsored research seminar March 11 at the Center titled "Carbon Footprints and the Shaping of Public Policy." Despite the explosion in methods and tools to calculate greenhouse gas emissions (GHG) such as those for households, buildings, cities, products and processes, policy

makers are inevitably limited to decisions based on their particular perspectives and priorities. "Crucial decisions about the scale and scope of the 'system boundaries' can fundamentally shape the outcomes," Newell says.

To illustrate, Newell offers examples at different levels of a geographer's local/global spatial scale. Paper is considered one of the most energy intensive industries. Newell's life cycle analysis comparing coated-paper production in the United States and China demonstrated significant differences in the resulting carbon footprints based on the sources and amount of energy consumed in the manufacturing and transport phases. However, neither phase compared to the impact of lost biomass in the timber harvest phase, which was 2.5 times higher than the production phase in the US and 3.7 times higher in China.

"A lot of times, policies are developed based on understanding at a certain scale without understanding the whole picture," he explains.

Consider another example: the politics of local optimization illustrated by port electrification.
California's Global Warming Solutions Act (AB 32) requires the state to reduce GHG emissions by 30 percent regardless of container throughput growth. However, the Port of LA's strategy of replacing diesel-powered yard tractors with electric ones does not fully account for indirect emissions associated with the electricity generation. "The only way that you can say that electricity doesn't generate

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## METRANS Participates in DOT Reauthorization Roadshow

METRANS helped organize an unprecedented meeting to gather federal, state and local government officials, transportation system managers, commuters and other stakeholders to discuss needs, priorities and constraints for the upcoming surface transportation reauthorization.

US Department of Transportation Secretary Ray LaHood brought his leadership team to the Los Angeles meeting for the third stop on the Surface Transportation Reauthorization Outreach Tour.

"I'd never seen this before — to bring your entire leadership team on the road," said Genevieve Giuliano, METRANS Director and Senior Associate Dean for Research and Technology at USC's School of Policy, Planning, and Development.

The February 19 meeting, held in the Los Angeles County Metropolitan Transportation Authority's

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

## METRANS OUTREACH METRANS Leadership

METRANS has been fortunate in having a stellar leadership team. Our accomplishments are the result of dedication and commitment by everyone involved. We want to take this opportunity to recognize and thank Joe Magaddino, longtime member of the METRANS Executive Committee, who ended his service this year. As Chair of the Department of Economics at CSULB, Joe pursued the development of the Master of Arts in Global Logistics degree. He convinced his dean and the University that transportation education and research were worthy areas for investment,



Joe Magaddino

and the presence of METRANS helped him make the argument. As a result, he was able to hire three faculty in transportation economics during his tenure. We wish Joe all the best as he begins his move to retirement.

We welcome Joe's Economics professor

Kristen Monaco to the Committee. Kristen has been a valuable member of our METRANS Research Faculty for many years, and was recently elected to the Association of Public Policy and Management's Policy Council. We are delighted to have her, and look forward to her contributions to the Committee.

The METRANS Advisory Board met at USC April 5. Topics included education and training for workforce development; outreach efforts including CITT's Point/Counterpoint event, the DOT Reauthorization Tour, and blending old and new media; and highlights from METRANS-funded research. The meeting concluded with a strategic planning session.

We note the accomplishments of two of our Board members who have accepted new positions over the past year. Board Member Gloria Jeff joined the Washington DC District Department of Transportation as Associate Director of Transportation Operations Administration, and Board Member Randell Iwasaki is the new Executive Director of the Contra Costa Transportation Authority.



USDOT Secretary Ray LaHood, US Senator Barbara Boxer and Los Angeles Mayor Antonio Villaraigosa.

Photo by Gary Leonard - Courtey of Metro 2010 LACMTA

### **METRANS OUTREACH**

## DOT Reauthorization Roadshow, continued

Board Room at One Gateway Plaza, was an invitation only session headlined by LaHood, as well as LA Mayor Antonio Villaraigosa, Representative Lucille Roybal-Allard and Senator Barbara Boxer.

Federally funded surface transportation programs throughout the United States, which include rail, highway, inland waterways, and intermodal facilities are covered by the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (Public Law 109-59; SAFETEA-LU). The legislation covers operation of the entire federal transportation system and allocates funds from the highway trust fund collected through fuel taxes and tire excise taxes. (It also underwrites university transportation centers such as METRANS.) This bill expired in 2009 and operates on a continuing resolution until the end of this year. The reauthorization process – writing the next surface transportation bill – is the complex reformulation of national transportation policy with the inevitable negotiation over competing visions and inadequate resources.

The DOT's six-stop "listening tour" also included events in New Orleans, Minneapolis, Houston, Bismarck ND and Washington DC between December 2009 and July 2010. "USDOT is particularly interested in ideas that will improve the effectiveness of transportation programs with respect to safety, livability, economic competitiveness, environmental sustainability and the state of good repair of transportation

infrastructure," read the invitation letter to the LA meeting.

After a morning Plenary Session covering Issues for Reauthorization, Secretary LaHood and Senator Boxer led a Town Hall discussion, facing rapid-fire questions and comments from audience members representing groups such as the Move LA Coalition, Rail Passengers Association of California and Nevada and Bus Riders Union. The audience was hand-picked, but hardly designed for preaching to the choir. There were comments on the need to raise the fuel tax (against the Obama Administration's current position) and the need for more transit subsidies. Even the \$2.25 billion California received for its high speed rail program was questioned as being not enough to be able to build the system.

The luncheon panel discussed issues related to goods movement and economic development. In the afternoon, two panels focused on livability and sustainability, and human factors and safety.

Giuliano sees the Obama Administration's approach to surface transportation as very urban, shaped by the experience of eastern cities with long histories of public transportation, strong downtowns and walkable neighborhoods. She says, "Coming to LA — the second largest metropolitan region in the country — is symbolic of that. They came here because this is a hotbed of urban transportation problems and creative solutions, in terms of both passenger and goods movement."

#### **METRANS OUTREACH**

## CITT Point/Counterpoint Considers Local Impact of Panama Canal Expansion

The first METRANS/CITT Point/Counterpoint Dialogue took place at CalState Long Beach on October 6. At issue was the expansion of the Panama Canal and what impact it might have on Southern California as a destination for local and discretionary cargo. The format of this event replaced the annual Town Hall, which was our signature outreach effort for 10 successful years.

The decision to end the Town Halls was not made lightly. "It was discussed over nearly two years with the METRANS Executive Committee and Advisory Board and the CITT Policy and Steering Committee," explains Genevieve Giuliano, Director of the METRANS Transportation Center. "Ultimately, however, we were determined to find a new format that would attract and engage a broader audience."

Point/Counterpoint was the result: a format that illuminates all the aspects of a critical issue by presenting two different perspectives on a topic relevant to all of Southern California."

As the Panama Canal approaches its centennial, Panamanians have committed an estimated \$5.25 billion to expand the canal by widening and deepening navigation channels and adding a larger, third set of locks at both the Atlantic and Pacific entrances. According to the Panama Canal Authority, the expansion program more than doubles the tonnage capacity over current "Panamax" vessels, from 5,000 to 12,000 TEUs. Just as the opening of the Panama Canal in 1914 fundamentally altered the patterns of trade and economic development around the world, some believe the reopening of an expanded

canal in 2014 will cause another fundamental shift in global goods movement.

What will this mean for the San Pedro Bay ports of Long Beach and Los Angeles, which have greatly benefitted from exponential growth in trans-Pacific trade over the last 30 years? From its deep waters and landside infrastructure to an expansive rail and highway network outside the gates, the ports' advantages have created a global powerhouse and hundreds of thousands of jobs throughout Southern California. Infrastructure investments in harbor, freight, warehouse and distribution facilities have made the San Pedro Bay one of the world's preeminent cargo destinations – both to feed local consumer demand and facilitate efficient handling of discretionary cargo for the rest of the nation and even other parts of the world.

An expanded canal will offer new options for retailers and other beneficial cargo owners (BCOs) to ship goods via other ports along the Atlantic Seaboard or on the Gulf of Mexico or at least to spread their risk by diversifying the routes they choose. Besides possible cost calculations for all-water routes, other factors will figure into their decisions. On one hand, there is new competition from ports in Canada, Mexico and the US Pacific Northwest, which are investing billions of dollars in new infrastructure. So have East Coast port complexes and railroads. Meanwhile, there are indications that manufacturing patterns are shifting some of the production away from China and Southeast Asia to India and Latin America, which will change cargo patterns as well (some of these new patterns may still favor Southern California). "Panama Canal Expansion: The Battle for Jobs and Cargo. Who Wins? Who Loses? Who Decides?" offered educated and unique perspectives that challenged existing assumptions about the implications for West Coast ports, jobs and cargo volume. Discussing possible implications of the canal expansion this year were speakers Paul Bingham of Wilbur Smith Associates in Arlington, Virginia, and Dr. Mary Brooks from Dalhousie University in Halifax, Nova Scotia. Todd Thomas of Expeditors International provided industry commentary before an audience Q&A session. METRANS Associate Director and CITT Director of Research Thomas O'Brien served as moderator.



METRANS holds monthly research seminars at USC. The seminars present results from METRANS projects and bring in leading transportation scholars and practitioners as guest speakers, such as the two well-known experts who presented this past spring.

American Public Transportation Association (APTA) President William Millar discussed "The State of Public Transportation" at a METRANS seminar February 11, 2010. He covered issues ranging from different modes of public transit and high-speed rail to the economic, environmental and energy-independence arguments for increased investment in public transportation.

Marlon Boarnet, Professor of Planning, Policy, and Design and Economics at UC Irvine, presented the METRANS Research Seminar "Retrofitting the Suburbs to Increase Walking: Evidence from a Land Use-Travel Study" on March 9, 2010. Boarnet reported the results from a detailed travel diary survey of 2,125 residents in the South Bay area of Los Angeles County, which found substantial variations in the amount of walking trips between compact development centers and linear corridors.





An audience of more than 700 turned out for the October 6 event. Panelists Dr. Mary Brooks from Dalhousie University (L) and Todd Thomas of Expeditors International (R).

Photo credits: Robert Huizar and Steve Barth

#### **METRANS RESEARCH: Josh Newell**

## Remapping Commodity Chain Consequences continued

emissions is to only count things within a narrow geographic boundary. When you broaden the scale and think about where the coal is mined and burned to generate electricity, for example, obviously those emissions are significant. They have local impact elsewhere," Newell explains.

The emissions associated with moving a 20-foot container from Point A to Point B within the LA basin, are very significant at the local scale in terms of 'criteria' air pollutants, which have been shown to cause cancer and other health problems. Emerging green practices such as cold ironing (shore-side power) and local clean truck measures have a major local impact. "But when you think about the container moving all the way from China to the East Coast, the emissions that actually are occurring in port operations are very small in comparison to that global footprint," Newell says. "Reducing greenhouse gas emissions globally means encouraging rail rather than truck transport for long hauls whenever possible and, most importantly, finding ways to reduce the emissions associated with shipping. It is the most efficient mode of transport per mile, but you are talking about huge distances, so shipping makes up the majority of the container's carbon footprint."

#### Modeling Time, Cost and Carbon in Transportation Decisions

Historically, time, cost and reliability have been the key variables for decisions about shipping goods. But increasingly, a product's carbon footprint is becoming a factor for many manufacturers and retailers. Accounting for a container's carbon footprint was the subject of Newell's 2010 METRANS project, "Moving Containers Efficiently with Less Impact: Dynamic Modeling and Decision-Support Architecture for Clean Port Technologies" (Project No. 10-06, with Co-PI Mansour Rahimi).

It has long been assumed the most efficient way to move goods in containers from China to various destinations in the US is via the Ports of Los Angeles and Long Beach. Based on Newell's research, that is generally true even when greenhouse gas emissions are added to the equation — but not always. Newell used data from an American toy company that identified where its products are manufactured, which

ports they ship through and where the company's own — and its major retailers' — distribution centers are located. "So we played with scenarios for six destination zip codes to ask what would happen to the variables of time, costs and carbon if we routed through, for example, the Port of Houston or an East Coast port instead of the Port of LA," Newell explains.

It was indeed more efficient in terms of cost, time and GHG emissions, for example, to transport goods via LA/LB to zip codes in places such as Ohio or Arkansas, when the variables are modeled based on multi-modal transport of ship, train and truck. On the other hand, when Newell looked at destinations in New Jersey and compared transshipment through San Pedro with direct shipping through the Panama Canal to Port Newark, there actually was no appreciable difference in terms of transit time or cost. However there was a significant reduction of emissions taking the latter route — about 20 percent. As such, the work suggests GHG can sometimes be reduced by bypassing manufacturer distribution centers and shipping directly to retailer distribution points.

The results are important not only for the toy company. Manufacturing in southeast China, shipping to LA and continuing by train or truck through the rest of the US is a predominant business model for many companies. Based on the results of this research, Newell and colleagues are designing the basic interface and architecture of a web-based intermodal goods movement visualization application that will allow decision-makers such as port officials, retailers, and shippers to test transportation scenarios in terms of time, costs and emissions based on points of origin and destination, different ports and different modes of transportation.

Newell's work is intrinsically about integrating the local and the global. "My hope is that we'll have a much better understanding of where our things come from and the environmental and social implications of how our products are produced in terms of who benefits and who loses," Newell says.

Note: Beginning Fall 2010, Newell is an assistant professor in the School of Natural Resources and Environment at the University of Michigan.

### Estimated carbon outputs for four different route scenarios for a destination in New Jersey

Case	IV-A	IV-B	IV-C	IV-D
US port	Los Angeles, CA	Houston, TX	Houston, TX	New Jersey, NJ
Distribution Center	Fort Worth, TX	Fort Worth, TX	N/A	N/A
C2 equiv. emmissions (lbs.)	5822.9	6213	4931.82	4159.86
Cost (\$)	4907.98	4813.89	3852.81	3385.56
Transit time (days)	26	27	25	25

Source: Final Report, "Moving Containers Efficiently with Less Impact: Dynamic Modeling and Decision-Support Architecture for Clean Port Technologies"

#### **METRANS EDUCATION**

## **Student Conference** Focuses on Sustainable Transportation

The 16th UCTC Student Conference, co-sponsored by METRANS, "Moving Toward Sustainable Transportation," met at the UC Irvine Student Center April 1-2, 2010.

Among the USC presentations, Zhaohu Fan, Mansour Rahimi and Josh Newell discussed "A simulation study of logistics operations at San Pedro Bay Ports of Long Beach and Los Angeles"; John Mimms addressed "Driving perception and preparation — How image and transit-motivated design influence the success of transit projects in LA"; Fynnwin Prager and Mohja Rhoads proposed "Forecasting the adoption of technology to reduce travel for business-related activities using a systems dynamic model"; and Jiangping Zhou explained his study of "Congestion pricing with an unpriced alternative and with heterogeneous user groups".

USC contributions to poster sessions included: "A proposal for development around Berlin's Central Station" from Jennifer Blackwell, Michelle Buchmeier,

Joy Kwong and Brettany Shannon; The "Effect of built environment for public transportation on obesity: A multi-level analysis" by Ahn Yong-Jin; and "Computational process management for transportation system analysis" by Qunzhi Zhou and Viktor K. Prasanna.

Sponsored by the multi-campus University of California Transportation Center (UCTC), keynote speakers included Robert L. Bertini, Deputy Administrator of the Research and Innovative Technology Administration (RITA) of US DOT; Scott Samuelsen, Professor of Mechanical, Aerospace and Environmental Engineering at UCI; and James Pinheiro, CalTrans District 12 Deputy Director of Operations and Maintenance. The conference included more than 30 student presentations and 60 poster sessions, as well as six faculty presentations. Abstracts are available on the conference website (http://uctc2010.its.uci.edu).

#### **METRANS EDUCATION**

## **Transportation Student Awards** 2009 – 2010

We take pride in the recent accomplishments of our transportation students.

#### **National and International Awards**

Sylvia He, USC SPPD PhD student, received the Eisenhower Graduate Fellowship from the Technology Partnership Programs at the USDOT.

Brendan Keeler, USC SPPD MPL student was awarded a Development Fellowship from the China Academy of Urban Planning and Design.

Laurie Kaye Nijaki and Mohja Rhoads, USC SPPD PhD students, were selected by the Eno Transportation Foundation as Fellows. Yin Wang, USC SPPD PhD graduate (2010), won the paper award competition of the American Society for Public Administration's Section on Transportation Policy and Administration for her paper "Determinants of Utilization of Private Finance in Toll Road Development: Evidence from the US." USC engineering students Ryan Berti, Ryan Brown, Tommy Holford, Michael Hsu, Pradyumna Kejriwal, Clarence Li, Farid Nobakht and Denis Tulskiy placed third at FAA Runway Safety/Incursions Challenge.

#### **State Awards**

**Jezreel Apelar** and **Clara Suh**, USC SPPD undergraduates and **Chi Man (Mandy) Yeung**, USC Civil Engineering undergraduate, were selected to attend the California Transportation Foundation Annual Education Symposium.

#### **Local Awards**

Sylvia He and Laurie Kaye Nijaki, USC SPPD PhD students, Patricia Uzes, CSULB GLS student, and Mandy Yeung, USC Civil Engineering undergraduate, were awarded WTS Transportation Scholarships. MAGL students Ebony Loeb, Lauren Roslanowick, Felipe Sinohui, and Mathew Stramer and GLS students Fahad Din and Ricardo Ortiz received scholarships from the Port of Long Beach. GLS students Samuel Palacios, Alejandro Escobar, David Rodas, Septiadi Tjahjono and Nathan Woodside received Harbor Transportation Club

scholarships. GLS students **Hector Calderon**, **Heejung (Heidi) Kim**, **Jannine Mongeon** and **Noemi Zepeda** were awarded Los Angeles Transportation Club scholarships. **Brett Everett**, CSULB GLS student, was awarded the Mary Bleming Memorial Scholarship. **Daniel Treichler**, CSULB GLS student, received a scholarship from Pacific Maritime Association.

#### **University Awards**

USC MPL student Joe Walcek received 2010 MPL Comprehensive Examination Honors for his Transportation and Infrastructure Planning Exam. Mary Kuhn, USC MPL student, received the SPPD Lewis Mumford Prize for the most outstanding essay in Planning History for her work titled "Sustainable Mobility for Women." CSULB GLS students Karen Allec, Madeline Bristol, Nadia Chohan, Douglas Elliot, Susan Espana, Sokchanda Im, Stacy Kelso, Greg Matthews, Dan Phillips, Jennifer Recidro, David Rodas, Septiadi Tjahjono, Sven von Borries, Matthew Wilson, Raymond Wisniewski and Nathan Woodside won awards for Best Capstone Projects for the CSULB GLS Program. CSULB MAGL students Mathew Stramer, David Sung, and Christine Tamayo earned second place in the CSULB Annual Student Research Competition for their paper entitled, "The Impact of Consumer Demand, Market Price of Aviation Fuel and Competition on Load Factors of Air Freight Imports to the United States." They were also honored as outstanding

graduate research assistants at the CSULB University Achievement Awards and Research Celebration.

CSULB MAGL graduates at Commencement.



## METRANS RESEARCH METRANS Faculty Awards

Our METRANS faculty continue distinguish themselves through outstanding research, teaching and professional leadership. This year we take particular note of the following achievements.

#### **National and International Awards**

**Petros Ioannou**, Professor, USC, was honored by the Institution of Engineering and Technology as Fellow and Recipient of the 2009 Heaviside Medal for Achievement in Control. **Martin Krieger**, Professor, USC, won the American Planning Association's Technology Award for his "Multimedia Boot Camp," a short course in multimedia. **Viktor Prasanna**, Professor, USC, was named a fellow in the American Academy of Arts and Sciences.

#### **Other Awards**

**Genevieve Giuliano**, METRANS Director, Professor and Associate Dean, USC, was awarded a Faculty Appreciation Certificate of Recognition from the Office of International Students. **Forouzan Golshani**, Professor, CSULB, was honored with the Distinguished Dean of Engineering award from the Los Angeles Council of Engineers and Scientists.

#### **Leadership in Professional Associations**

**Kristen Monaco**, Professor, CSULB, was named 2010 Transportation Research Forum Program Vice President. **James Moore II**, Professor, USC, was elected to serve on the California Transportation Foundation's Board of Directors. **Gary Painter**, Professor, USC, was elected to the Association of Public Policy and Management's Policy Council.

#### **Promotions and Appointments**

**Mahyar Amouzegar**, Professor, CSULB, was appointed Director of the Center for Commercial Deployment of Transportation Technologies. **Anastasios Chassiakos**, Professor, CSULB was promoted to Director of California Pre-Doctoral Program. **Randolph Hall**, former Vice Provost for Research Advancement at USC, has been elevated to Vice President of Research, reporting to the Provost. **Lisa Schweitzer**, USC, was promoted to Associate Professor with tenure.

### **METRANS** Recently Completed Projects

Area	Principal Investigat	tor Co-PI	Project Title	
Infrastructure	James Moore II		Improved Modeling of Network Transportation Flows, Including Land Use-Transportation Interactions: A Research Collaboration Between USC (METRANS) and Caltrans District 7 (Office of Advance Planning)	
Goods Movement	Petros Ioannou	Anastasios Chassiakos	Simulation Test Bed and Evaluation of Truck Movement Concepts on Terminal Efficiency and Traffic Flow	
Safety and Security	Najmedin Meshkati	Mansour Rahimi Jalal Torabzadeh	Study of the Exposition Light-Rail's Safety for Pedestrians and Drivers	
Goods Movement	Niraj Verma		Institutional Considerations in Freight Movement in Port of Los Angeles/Long Beach	
Mobility	Christine Jocoy		The Mobility of Homeless People and Their Use of Public Transit in Long Beach, CA	
Mobility	Wade Martin		A Computable General Equilibrium Model of the Southern California Economy: The Ports, Transportation and the Environment	
Goods Movement	Mansour Rahimi		Integrating Inland Ports into the Intermodal Goods Movement System for Ports of Los Angeles and Long Beach	
Safety and Security	Tridib Banerjee		Pedestrian Safety of School Children: Toward Improving Walkability of Inner City Neighborhoods	
Goods Movement	Hamid Rahai	Bei Lu	Development of a Portable Remote Sensing System for Measurement of Diesel Emissions from Passing Diesel Trucks	
Goods Movement	Seiji Steimetz	Steven Yamarik	Accident Rates and Safety Policies for Trucks Serving the San Pedro Bay Ports	
Goods Movement	I-Hung Khoo	Tang-Hung Nguyen	Study of the Noise Pollution at Container Terminals and the Surroundings	
Mobility	Fei Wang	Xiolong Wu	Microscopic Model of Road Capacity and Risk for Highway Systems in Port Based Metropolitan Areas	
Safety and Security	Chin Chang		Fiber-Optic Smart Structures for Monitoring and Managing the Health of Transportation Infrastructures	
Goods Movement	Kristen Monaco	Guy Yamashiro	Transportation Forecast for Southern California	

#### **METRANS EXECUTIVE COMMITTEE**

Genevieve Giuliano, Director

Senior Associate Dean, Research & Technology, School of Policy, Planning and Development, USC

Marianne Venieris, Deputy Director

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

**Petros Ioannou**, Associate Director of Research

Professor, Electrical Engineering Systems, Director, Center for Advanced Transportation Technology, USC

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

**Anastasios G. Chassiakos**, Director, California Pre-Doctoral Program, California State University, Office of the Chancellor

**Maged Dessouky**, Professor, Daniel J. Epstein Department of Industrial and Systems Engineering, USC

Joseph Magaddino, Chair, Department of Economics, CSULB

**James E. Moore II**, Professor and Chair, Daniel J. Epstein Department of Industrial and Systems Engineering, USC

#### **METRANS FACULTY**

METRANS has funded 103 faculty at USC and CSULB. Given METRANS' interdisciplinary theme, they are experts in engineering, business, economics, geography, information sciences, public policy, planning, public administration and health sciences.

#### California State University, Long Beach

Tracy Bradley Maples Chin Chang Anastasios Chassiakos

Robert Chi

Burkhard Englert Mohammed Forouzesh

Robert Friis
Darin Goldstein
Lisa Grobar
Min He
Kenneth James

Christine Jocoy Tim Jordanides

I-Hung Khoo Melody Kiang Shui Lam

Christopher Lee

Bei Lu

Joseph Magaddino Wade Martin Kristen Monaco Tang-Hung Nguyen Thomas O'Brien Emily Parentela Cheryl Pruitt Hamid Rahai Grace Reynolds Shadi Saadeh Antonella Sciortino Tariq Shehab-Eldeen Seiji Steimetz

Seiji Steimetz Reza Toossi Jalal Torabzadeh

Fei Wang Suzanne Wechsler Xialong Wu Steven Yamarik

Guy Yamashiro Henry Yeh

#### University of Southern California

Garrett Asay Amol Bakshi Tridib Banerjee Jean-Pierre Bardet Burcin Becerik-Gerber Hanh Dam Le-Griffin Maged Dessouky Michael 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 Ilias Kosmatopoulos

Martin Krieger Bhaskar Krishnamachari

John Kuprenas Bumsoo Lee LaVonna Lewis Sami Masri Najmedin Meshkati

James E. 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 Trifunac Theodore Tsotsis Chris Williamson

Hung Leung Wong Maria Yang Suya You

#### **METRANS Staff**

Vicki Valentine, Administrator, USC (victoria.valentine@usc.edu) Alix Traver, Coordinator, CSULB (atraver@ccpe.csulb.edu) Thomas O'Brien, Ph.D., Assoc. Dir., METRANS CSULB Programs (tobrien@csulb.edu)

#### **METRANS** Website

More information on transportation research, publications, education, training, and technology transfer can be found at www.METRANS.org.



School of Policy, Planning, & Development University of Southern California Ralph and Goldy Lewis Hall 238 Los Angeles, California 90089-0626

Phone: 213-821-1025 Fax: 213-740-0001

Email: giuliano@usc.edu

CSULB Phone: 562-985-2872

Fax: 562-985-2873

Email: mvenieris@ccpe.csulb.edu





## VISIT US ON THE WEB WWW.METRANS.ORG

METRANS News Editor: Steve Barth Reflected Knowledge (www.reflectedknowledge.com)

### Dear Reader:

We are well into the new academic year at USC and CSULB, with students crowding classrooms and hallways, and the excitement of new classes, new research projects (and maybe some football) in the air. By the time you read this, we will have held our first Point/Counterpoint. As we go to press, all indications are that we will have a great program and a large audience. We have awarded a new round of research projects, completed our second "new version" annual report and scheduled the fall semester's seminar series. We are also starting work on our new Goods Movement Leadership Program, providing matching funds to CSULB for program development. We are looking forward to another rich, fulfilling and busy year.

#### **Genevieve Giuliano**

Director
METRANS Transportation Center