

# METRANS NEWS

National Center for Metropolitan Transportation Research  
University of Southern California / California State University, Long Beach

*Research Profile*

## JIM MOORE SEES FACULTY COLLABORATION AS METRANS' DISTINGUISHING FEATURE

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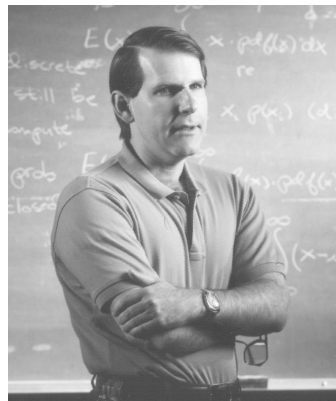
METRANS, a partnership of the University of Southern California and California State University, Long Beach, is a U.S. Department of Transportation designated University Transportation Center. Its mission is to solve transportation problems of large metropolitan areas through research, education and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

Professor James E. Moore II says his interest in transportation systems was sparked from a visit to a library at Northwestern University. He was intent to study engineering thus combining his love of math and science. But as he grappled with trying to determine a major course of study, he wandered into Northwestern's nationally prominent transportation library. This was his light bulb moment. He saw an opportunity to blend engineering science and social science.

He settled on a major in industrial engineering because it had a curriculum that was as consistent with transportation systems as anything he could find on campus. He completed his undergraduate work in industrial engineering and stayed on another quarter to earn a second bachelor's degree in Urban Planning.

He then found an opportunity to separate himself from the dreary Midwestern winters he so disliked, and off he went to Stanford Univer-

sity to study for a Masters in Industrial Engineering. After completing his Masters, he returned to Northwestern to work with a Northwestern



Professor James E. Moore II

faculty member who was visiting Stanford during the year he was there. That allowed him to develop a research agenda in a fairly seamless way. He earned his second Masters degree in Urban and Regional Planning, and returned to Stanford for three years to complete his PH.D. in Civil Engineering with an emphasis in Infrastructure Planning and Management.

Although he still dreaded those bone-chilling Midwestern winters, he returned

once again to Northwestern, this time as an assistant professor in Northwestern's Civil Engineering department. After two years, his chance to sever ties with those notorious winters came in 1988, when he joined the USC Civil Engineering and Urban Planning faculties. He received tenure in the School of Urban and Regional Planning in 1993, and in Civil and Environmental Engineering in 1997. Moore's principal academic appointment changed to the Daniel J. Epstein Department of Industrial and Systems Engineering in 2003 and he was awarded tenure in that department in July, 2003. He currently serves on the USC faculty as Professor of Industrial and Systems Engineering, Civil Engineering and Public Policy and Management.

In the mid 1990s, Moore, along with fellow academicians, sought to raise the profile of USC's transportation research agenda to a higher level: one of national

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*METRANS Outreach***SIXTH ANNUAL CITT TOWN HALL MEETING SET FOR MARCH 24**

California State University, Long Beach's Center for International Trade and Transportation has slated its Sixth Annual CITT State of the Trade and Transportation Industry Town Hall Meeting for March 24 at the Carpenter Performing Arts Center on the CSULB campus. The meeting, entitled *Quality of Life and Port Operations: Challenges, Successes and the Future*, will examine whether international trade flowing through the ports of Los Angeles and Long Beach, 40

percent of all the cargo imported into the U.S., can continue to grow unabated without negative impacts on local communities.

The Town Hall Meeting has been cited as being very successful at providing a neutral forum where all parties in the logistics industry can come together to engage in meaningful dialogue about the issues facing the industry in a non-confrontational, collegial way. In the past, the CITT Town Hall Meetings have

drawn upwards of 1,000 people.

The stakeholder panel will include:

‡ Alan Lowenthal, California Assemblymember, 54th District

‡ Frank Colonna, Councilmember, 3rd District, Vice Mayor, City of Long Beach

‡ Thomas Warren, Past President, ILWU Local 63, Los Angeles Harbor Commissioner

‡ Douglas Tilden, President,

Marine Terminals Corp.

‡ Stephanie Williams, Senior Vice President, California Trucking Association

‡ Julie Masters, Staff Attorney, National Resources Defense Council

The panel will be moderated by Richard Hollingsworth, President, Gateway Cities Partnership, Inc.

For more information, call the CITT offices at 562/296-1170.

**JIM MOORE:**

*(Continued from page 1)*  
prominence. In order to achieve that goal, USC collaborated with CSULB to integrate USC's broad interdisciplinary approach to transportation research with CSULB's innovative professional training in the transportation field, resulting in the establishment of METRANS, a U.S. Department of Transportation designated University Transportation Center. "CSULB is a public institution, as are the other two transportation research centers in the state; San Jose State and University of California, Berkeley," said Moore. "They help defuse any perception of the choice between a public institution and a private institution when it comes to

maintaining multiple centers for transportation research."

Moore's transportation research interests include:

‡ Mathematical programming and connectionist models to study transportation network performance and control, especially in networks subject to earthquake or flood damage.

‡ Evaluation of new transportation technologies.

‡ Transportation policy analysis.

‡ Computational models of the land use/transport system.

‡ Market-based urban planning interventions.

‡ Optimal infrastructure investment and pricing policies.

Because of his position as associate director of METRANS during the center's first four years of existence, Moore involved himself with getting new people involved in research and finding research sponsors rather than proposing METRANS research projects. Now, however, he has two METRANS funded projects in progress. Along with USC investigators Harry Richardson and Peter Gordon, Moore began work in 2003 on a project entitled *Measuring California's Role in Supporting Interstate Goods Movement: A Comprehensive Assessment of Interstate Freight Flows*. This project will establish the state's role serving the goods movement requirements of all 50 states. "One of the advantages of this

approach is that it leverages existing, easily accessible, widely used data sources to produce a new model for estimating these unobserved flows," Moore said.

And early this year, he along with USC's Le Dam Hanh, began work on a study entitled *Landside Surface Transportation Impact of Short Sea Shipping in Southern California*. "This is a project that clearly demonstrates to Caltrans District Seven the relevance of METRANS research," he said.

In closing, Moore said that METRANS is distinguished in part by a faculty that is willing to collaborate and is very disciplined about carving out a role for the center which benefits the regional transportation industry.

*METRANS Research*

## METRANS AWARDS NEW GRANTS FOR TRANSPORTATION RESEARCH

In late August, 2003, METRANS began the process of soliciting research proposals for the 2003/2004 academic year from USC and CSULB faculty members. METRANS funds research on critical metropolitan transportation problems, and has established a focused research agenda in four areas:

1. Commercial goods movement and international trade
2. Mobility of urban populations
3. Highway infrastructure and infrastructure renewal
4. Safety, security and vulnerability

The request for proposals solicited research projects within the four focus areas. METRANS received 18 proposals requesting a total of \$1,440,565—ten from USC, three from CSULB and five joint projects between the two campuses. Of these, seven proposals were in the area of goods movement; four in mobility; one in infrastructure; and six in safety and security.

For two months, the proposals went through extensive reviews by Caltrans officials, academics and professionals for both the public and private sectors. There were a total of 64 referees invited to participate in the review process.

In mid-December, nine proposals were selected by METRANS for submission to Caltrans for final approval. The winning proposals have been funded for a total of \$667,838 and work began on the projects in January.

Of the nine selected pro-

jects, six were from USC principal investigators, one from CSULB and two projects are joint efforts with investigators from both the USC and CSULB campuses.

In announcing the winning projects, METRANS Director

Genevieve Giuliano cited the high quality of the proposals submitted for this round of funding. “The referees had a very difficult job in reviewing these excellent proposals,” she said. “We are very pleased with the outcome of the review process.”

- 04-03 Evolution of Collective Sensory Systems for Intelligent Vehicles  
Principal Investigator: Karl H. Grote, CSULB
- 04-04 Landside Surface Transportation Impact of Short Sea Shipping in Southern California  
Principal Investigator: Le Dam Hanh, USC  
Co-Principal Investigator: James E. Moore, II, USC
- 04-05 Development of Methods for Handling Empty Containers with Applications in the Los Angeles/Long Beach Port Area  
Principal Investigator: Petros Ioannou, USC  
Principal Investigator: Anastasios Chassiakos, CSULB
- 04-06 Evaluation of the Terminal Gate Appointment System at the Los Angeles/Long Beach Ports  
Principal Investigator: Genevieve Giuliano, USC  
Co-Principal Investigator: Joseph Magaddino, CSULB
- 04-08 SURE-SE: Sensors for Unexpected Roadway Events: Simulation and Evaluation  
Principal Investigator: John Heidemann, USC  
Co-Principal Investigator: Genevieve Giuliano, USC
- 04-09 Reduction of Construction Project Risks to Pedestrians, Drivers, and Transit Passengers through Analysis of Historical Accident Records  
Principal Investigator: John A. Kuprenas, USC
- 04-13 What Can We Learn from CTPP 2000? Neighborhood Attributes, Commuting Behavior and Jobs-Housing Balance: A Comparative 1990-2000 Study Across California's Major Metropolitan Areas  
Principal Investigator: Harry W. Richardson, USC  
Co-Principal Investigator: Peter Gordon, USC
- 04-15 Confidence Intervals for Estimated Traffic Demand  
Principal Investigator: Fernando Ordonez, USC  
Co-Principal Investigator: Kurt Palmer, USC
- 04-18 Transit Investment and the Capitalization of Access into Land Values  
Principal Investigator: Christian L. Redfearn, USC

*METRANS Education and Training***JENNIFER RUSSELL NAMED METRANS STUDENT OF THE YEAR**

Each year, the U.S. Department of Transportation honors the most outstanding student from each participating University Transportation Center for his/her achievements and promise for future contributions to the field of transportation. This year, USC graduate student Jennifer Russell was honored as the METRANS Student of the Year for 2003-2004.

A Tustin, California native, Russell is a first year Ph.D. candidate in the Daniel J. Epstein Department of Industrial and Systems Engineering, where she is pursuing a field concentration in human factors and transportation system optimization. She is currently developing her dissertation proposal, and expects to conduct research on design and throughput of airport security systems, considering limits on human cognition and vigilance.

Her interest is in bridging the gap between decision theory and cognitive load, as for example when persons who are not working at their cognitive capacity are suddenly required to become fully engaged in an emergency situation. The theoretical basis of her work is in organizational behavior, human cognition, and new technology implementation.

Russell brings an impressive background to her Ph.D.

studies. She graduated at the top of her class from the U.S. Military Academy, West Point and served as a Transportation Officer in the U.S. Army for eight years, attaining the rank of Captain.

During her military service, she was an officer in Army logistics divisions stationed in the United States and Europe. In

that capacity, she analyzed and developed courses of action based on operational needs for the rail, air and sea deployment of over 15,000 soldiers and 5,000 pieces of U.S. and Allied Forces equipment. She also established interconnectivity between two computer networks to allow an exchange of information between U.S. Army and Air Force planners. Her leadership experience includes the management and supervision of an 80-person company as a headquarters company commander for a transportation brigade in Germany.

After her discharge from the Army, she decided to attend USC for her post graduate studies specifically because of the opportunities offered through METRANS. She also

wanted to study with Dr. Mansour Rahimi, who shares her interest in human factors in transportation. She earned her Masters Degree in Industrial and Sys-

tems Engineering in 2003.

As a graduate student at USC, Jennifer has demonstrated potential to make significant contributions to the aca-

demical world and to transportation research. She received a University Provost Fellowship for Ph.D. study, and was selected as Teaching Assistant of the Year for the Industrial and Systems Engineering Department in 2003. Russell has also contributed to a chapter on Human Computer Interaction in [The Engineering Handbook](#) to be published in June, 2004. An internship on a Human Factors Engineering team at Sikorsky Aircraft Corp. in 2002 helped sharpen her skills and broaden her experience.

The students honored each year by the Department of Transportation as Students of the Year are selected based on their accomplishments in such areas as technical merit and research, academic performance, pro-

fessionalism and leadership. As a reward, these students are invited to attend the Transportation Research Board's (TRB) annual meeting in Washington, D.C. in January. The meeting includes more than 500 sessions, 40 workshops and 350 TRB committee meetings covering all aspects of transportation.

This was Russell's first professional research conference and she found the experience to be very exciting. Some of the sessions that she identified as having the biggest impact on her were the State of ITS Update, Route Choice and Spatial Networks, and the poster session on Current Human Factors Research and Road Safety. She also attended the committee meetings on User Performance and Rail Grade Crossings. "All of these sessions proved extremely valuable in terms of being exposed to new research and applicable research methodology, as well as meeting many of the industry's most experienced researchers," she said. "I can't wait to go again next year. It was a marvelous opportunity."

As for her future, Jennifer would like to make a significant contribution to the field of human factors and transportation through innovative research and teaching in a top-ranked university.



Jennifer Russell

METRANS Outreach

# METRANS CONFERENCE EXAMINES ALAMEDA CORRIDOR

METRANS Transportation Center recently welcomed close to 200 people to the USC campus for a half-day conference entitled *Alameda Corridor: Blueprint for the Future?* The conference, co-sponsored by the USC Keston Institute for Infrastructure, examined the Alameda Corridor's first year and a half of operation. More importantly, the conference questioned whether the lessons learned during the 18 years from concept to the opening of the \$2.4 billion, 22 mile rail expressway can help to devise effective strategies for future major infrastructure projects.

Gill Hicks, former general manager of the Alameda Corridor Transportation Authority from 1990 to 2000, delivered the keynote address, explaining how ACTA managed to bring such an enormous project in on time and under budget. He identified the major challenges to completion of the project as:

- ‡ Project definition
- ‡ Governance and relations with cities along the corridor
- ‡ Cooperation and participation of the railroads
- ‡ Environmental management

- ‡ Project delivery
- ‡ Funding/national significance



A train travels through the Mid-Corridor-Trench, the ten-mile-long, below ground centerpiece of the Alameda Corridor.

- ‡ DBE participation
  - ‡ Job training
- Hicks also outlined the key lessons learned from building the Corridor, including:

- ‡ Compete for all funding
- ‡ Demonstrate national significance
- ‡ Establish partnerships
- ‡ Resolve third party agreements early
- ‡ Identify champions
- ‡ Use parallel processing
- ‡ Use design/build strategy
- ‡ Reduce risk to owners/investors
- ‡ Budget for contingencies
- ‡ Emphasize product and schedule
- ‡ Be sensitive to community concerns

The first of two expert panels followed the keynote address and examined the performance of the Corridor.

The first panel was led by Christian Redfearn, an assistant professor in USC's School of Policy, Planning, and Development and a Research Fellow at USC's Lusk Center for Real Estate. Joining him on the panel were ACTA CEO John Doherty, private and public sector consultant George Fetty (formerly with the Southern Pacific and Union Pacific Railroads), Long Beach Harbor Commissioner James Hankla (formerly ACTA CEO) and HNTB Management consultant James Preusch (formerly ACTA's treasurer and lead negotiator for the \$400 million U.S. DOT loan).

The second panel focused on what we can learn from the Corridor. The panel was moderated by Julie Bornstein, founding Director of the USC Keston Institute for Infrastructure. Panelists included Rick Richmond, CEO of the Alameda Corridor-East Construction Authority, David Seltzer, a Principal at Mercator Advisors LLC, Dr. Richard Callahan, Associate Dean and Director of State Capital and Leadership Programs for USC's School of Policy, Planning, and Development, Richard Hollingsworth, President/CEO of Gateway Cities Partnership, Inc. and

LaDonna DiCamillo, Government Affairs Director for the Burlington Northern and Santa Fe Railway.

### Model of good governance

The panels concluded that the Alameda Corridor is a model of good governance because it brought together multiple government agencies and the private sector in cooperation to deliver a project that benefits not only the parties involved, but also the entire country, the state and the region as well as individual



The Alameda Corridor, a 20-mile freight rail expressway, connects the ports of Los Angeles and Long Beach with the transcontinental rail yards near downtown Los Angeles.

communities and residents. By consolidating 90 miles of branch lines into a high-speed rail expressway that delivers cargo from the ports of Los Angeles and Long Beach to transcontinental rail transfer yards in Los Angeles, the Alameda Corridor eliminated conflicts at more than 200 at-grade railroad crossings where cars and trucks previously had to wait for long freight trains to

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## METRANS ADVISORY BOARD

Joel Anderson, Executive Vice President, California Trucking Association

Sandra Balmir, Transportation Planner, Federal Highway Administration

Dan Beal, Manager, Public Policy and Programs, Automobile Club of Southern California

Rebecca Brewster, President/CEO, American Transportation Research Institute

Susan Collette, Supervising Transportation Planner, Los Angeles World Airport

James de la Loza, Executive Officer, Countywide Planning and Development, Metropolitan Transportation Authority

Doug Failing, Director, District 7, California Department of Transportation

M.J. Fiocco, Transportation Specialist, U.S. Department of Transportation

Jim Gosnell, Deputy Executive Director, Southern California Association of Governments

Richard Hollingsworth, President/CEO, Gateway Cities Partnership, Inc.

Randell Iwasaki, Deputy Director, Maintenance and Operations, California Department of Transportation

Norman R. King, Executive Director, San Bernardino Association of Governments

Geraldine Knatz, Managing Director-Development, Port of Long Beach

Stephen Lantz, Director, Communications and Development, Metrolink (Southern California Regional Rail Authority)

Jack Levis, Portfolio Project Manager, United Parcel Service  
Domenick Miretti, ILWU Senior Liaison, Ports of Long Beach and Los Angeles

Michael Onder, Team Leader, Freight Management and Operations, U.S. Department of Transportation

Cindy Quon, Director, District 12, California Department of Transportation

Lynn Terry, Deputy Executive Director, California Air Resources Board

Barry Wallerstein, Executive Officer, South Coast Air Quality Management District

### CONFERENCE:

*(Continued from page 5)*  
slowly pass. It slashed emissions from idling cars and trucks as well as locomotives. Also, it increased the efficiency of the cargo distribution network to accommodate growing international trade.

The Alameda Corridor was funded through a unique blend of public and private sources, including \$1.16 billion in revenue bonds sold by ACTA, a \$400 million loan from the U.S. Department of Transportation, \$394 million from the ports of Los Angeles and Long Beach and \$347 million in grants administered by the Los Angeles County Metropolitan Transportation Authority.

Bond debt service is being paid with usage fees collected from the railroads for cargo transported on the Corridor as well as for cargo moved between the ports and downtown rail yards, regardless of whether the cargo actually traverses the Alameda Corridor. The revenue stream is considered low-risk as the volume of international trade is expected to continue its exponential growth well into the future.

Since the start of operations on April 15, 2002, the Alameda Corridor has handled an average of 35 train movements per day—a figure consistent with earlier projections for this stage of operation.

### Blueprint for the future?

So, how did it happen that the Alameda Corridor was completed on time and under budget? Among the panels' observations:

‡ The ports, railroads and the other agencies that were involved were very experienced in major infrastructure projects.

‡ The project leadership was strong, effective and able to control risk.

‡ The threats of the no-build alternatives were powerful motivators making the down-side risk significant.

‡ ACTA was very willing to mitigate with industry-specific job training and education credits for local residents and youth, out-

reach and technical assistance for disadvantaged businesses, and improvements and landscaping to Alameda Street.

‡ There existed a strong potential revenue stream from growing trade through the ports.

‡ The people who were putting up the money were the decision makers.

The Alameda Corridor benefited from very clearly defined objectives and solved a problem that was widely perceived as needing a solution. But the jury is still out for the Corridor. It will take time to study and assess the impacts to determine whether it can serve as a blueprint for future infrastructure projects.

## METRANS EXECUTIVE COMMITTEE

Genevieve Giuliano, Director  
Professor, School of Policy, Planning, & Development, USC

Marianne Venieris, Deputy Director  
Executive Director, Center for International Trade & Transportation, CSULB

Anastasios G. Chassiakos, Professor, Electrical Engineering,  
College of Engineering, CSULB

Randolph Hall, Associate Dean, School of Engineering;  
Department Chair, Industrial & Systems Engineering, USC

Petros Ioannou, Professor, Electrical Engineering, USC

Joseph Magaddino, Chairman, Department of Economics,  
CSULB

James E. Moore II, Professor, Industrial & Systems  
Engineering, Civil Engineering and Public Policy &  
Management, USC

Michael Mahoney, Dean, College of Engineering, CSULB

## METRANS FACULTY

METRANS has funded 35 faculty at USC and CSULB who are now members of the METRANS Center. Keeping to METRANS' interdisciplinary theme, the faculty come from five branches of engineering (aerospace, civil, electrical, mechanical and industrial & systems), as well as business, economics, geography, information sciences and public policy, planning & public administration. These faculty act as principal investigators on METRANS-funded projects and have responsibility for overseeing individual research projects. They also come together periodically to share insights through coordination meetings and conferences.

### California State University, Long Beach:

Anastasios Chassiakos	Electrical Engineering
Lisa Grobar	Economics
Karl-H. Grote	Mechanical & Aerospace Engineering
Ken James	Electrical Engineering
Tim Jordanides	Electrical Engineering
Joseph Magaddino	Economics
Kristen Monaco	Economics
Emily Parentela	Civil Engineering
Hamid Rahai	Mechanical Engineering
Reza Toossi	Mechanical Engineering

### University of Southern California:

Tridib Banrjee	Policy, Planning, & Development
Satish Bukkapatnam	Industrial & Systems Engineering
Maged Dessouky	Industrial & Systems Engineering
Michael Driver	Business Administration
Genevieve Giuliano	Policy, Planning, & Development
Peter Gordon	Policy, Planning, & Development
Randolph Hall	Industrial & Systems Engineering
Le Dam Hanh	Civil Engineering
John Heideman	Information Sciences Institute
Petros Ioannou	Electrical Engineering Systems
Clara Irazabel	Policy, Planning, & Development
Erik Johnson	Civil Engineering
Behrokh Khoshnevis	Industrial & Systems Engineering
John Kuprenas	Civil Engineering
Naj Meshkati	Civil Engineering
James E. Moore II	ISE, CE and PPD
Dowell Myers	Policy, Planning, & Development
Fernando Ordonez	Industrial & Systems Engineering
Kurt Palmer	Industrial & Systems Engineering
Mansour Rahimi	Industrial & Systems Engineering
Christian Redfearn	Policy, Planning, & Development
Harry Richardson	Policy, Planning, & Development
Paul Ronney	Mechanical Engineering
Chris Williamson	Geography
Hung Leung Wong	Civil Engineering

## METRANS STAFF

Jacquette Givens, METRANS Administrator, USC

Alix Traver, METRANS Coordinator, CSULB

Greg Raitz, METRANS Webmaster, CSULB

## METRANS WEBSITE

A vast amount of information relating to transportation research, publications, education, training and technology transfer is currently available on the METRANS website: [www.metrans.org](http://www.metrans.org). The website also has a faculty directory, news and links to other relevant sites as well as information on USC and CSULB transportation programs.

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# **METRANS**

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**WE'RE ON THE WEB**  
**WWW.METRANS.ORG**

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Dear Reader:

We have now completed our first year of publication. We hope you find our newsletter interesting and informative. Our Advisory Board recently encouraged us to "get the word out;" we are involved in many activities, yet many in California still don't know who we are. This issue will be circulated more widely via email, and we welcome your thoughts on how we might communicate our accomplishments more effectively. Speaking of accomplishments, the past few months have been quite busy. We have approved a new round of METRANS research projects, our applied research projects are well underway, and we are making good progress with our Global Logistics Specialist® online program. We had a very good conference on the Alameda Corridor in early February, and we look forward to another exciting CITT/METRANS Town Hall Meeting in March.

Genevieve Giuliano  
Director, METRANS Transportation Center

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