

METRANS NEWS

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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.

Christian Redfearn Studies Cities, Climbs Mountains

When Christian Redfearn hikes the mountains behind his home, he relishes the irony of high-altitude wilderness in the midst of the sprawling Los Angeles urban environment. One of his continuing research interests is the trade-off between the development patterns of modern horizontal cities and the need for shorter job commutes—the tension between horizontal and vertical pressures. A city's transportation system can make the difference.

Redfearn relishes his time in the San Bernardino Mountains, which can inspire his research.

"There is no other place like this," he says, referring to the close proximity of city and mountains.

An Accidental Career Redfearn fondly followed his grandfather into engineering. After graduating from Northwestern University, he soon tired of designing valves, so he enrolled in graduate school. "At UC Berkeley," he recalls, "I started wandering into classes, looking for what I liked—and I discovered John Quigley, an economist." Quigley's lectures on urban and housing issues fascinated Redfearn, and he became hooked on cities.

After receiving a master's degree in Operations Research, Redfearn went on to earn his Ph.D. in economics. "I discovered I liked systems and how they interacted. Real estate was sort of an accident," he joked. He joined USC's Marshall School of Business, teaching real estate finance. Shortly thereafter, he found an academic home among the urbanists in the School of Policy, Planning, and Development. It was a good fit. "The interesting thing is that urban economics and real estate finance are two sides of the same coin," he noted.

Transportation and Cities "To an economist," he related, "the heart of urban economics is the trade-off between space and the commute to jobs." He has studied extensively the phenomenon of employment centers—concentrations of jobs beyond classic downtowns.

His recent METRANS research is on a related topic—how the real estate market values access to light rail.

"The standard statistical toolbox is too sensitive to sub-markets, such as Compton, Beverly Hills, etc." he explains. The effects are different across communities.

Leaving a Legacy Redfearn maintains his true legacy will be his students. "This current group is particularly fun. They're very ambitious and will do any amount of work I give them, as long as I justify it."



Christian Redfearn hikes in the snow at 4,600 ft. with palm trees and the City of Los Angeles in view.

In addition to regular teaching duties, he enjoys teaching in the Ross Minority Program in Real Estate. The two-week intensive program, including a real estate project, helps build development expertise in minority communities. Students in the program come from all walks of life, from mayors' offices to nonprofits. Redfearn finds they are eager to work very hard. He predicts "They will do some inspiring things!"

New Horizons While Redfearn is always working on several projects, he is particularly intrigued with a new project in collaboration with a Spanish colleague. Comparing Los Angeles to Barcelona, they are studying the role of infrastructure, rail, and roads on urban form.

Preparing to climb Mt. Whitney next summer, Redfearn will take altitude-conditioning treks several thousand feet up the nearby San Gabriel Mountains. He will no doubt use the stunning city views to speculate on hypotheses, dreaming up new projects for both his research collaborators and eager students.

METRANS OUTREACH

METRANS Researcher Helps Shape Safety Requirements for Expo Line

Najmedin Meshkati, USC Professor of Civil and Environmental Engineering, spent 60 hours testifying, finally convincing a judge that pedestrian bridges are needed at two intersections where the new Los Angeles Expo Line light rail will pass at speeds of up to 55 mph.

Calling it a "David and Goliath" battle, Meshkati drew on guidelines and recommendations from his METRANS-funded projects.

He focused on safety of pedestrians and drivers at two intersections near schools. The judge sided with Meshkati regarding controversial crossings near Dorsey High School and Foshay Learning Center, both located along Exposition Boulevard.

A recent ruling by the Public Utilities Commission affirmed the extra protection required at both intersections. Meshkati's specialty is human factors in the safety of complex systems, which he teaches in the Sonny Astani Department of Civil/Environmental Engineering. His pro bono work on this project overlapped with alumnus Robert "BJ" Takushi's summer research filming students crossing the street where every 2-2 1/2 minutes the Expo Line trains will zip past.

The Expo Line is expected to cross 38 intersections from downtown to Culver City. The route was used long ago by Pacific Electric trolleys.



Students cross intersection at Dorsey High School in Los Angeles

Photo Courtesy of Vitberbi School of Engineering

METRANS Awards 2008-09 Research Grants

The following research projects were funded in the most recent METRANS grant process.

Most projects began in Fall 2008.

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

METRANS RESEARCH

Latest METRANS Research Proposals Under Review

Twenty-six new research proposals totaling \$1.87 million are now under review for the METRANS 2009-10 funding. USC researchers submitted 17 separate proposals, and California State University, Long Beach researchers submitted 8. One proposal was submitted by a team from both universities.

The proposals are categorized in the following research areas:

- Goods movement and international trade: 8;
- Mobility of urban populations: 5;
- Infrastructure: 6;
- Safety, security and vulnerability: 7.

Cross-disciplinary proposals receive priority.

Following approval, projects are expected to begin in August.

New Reports from METRANS Researchers

The following research reports are now available on the METRANS website, www.metrans.org, in the research section.

06-04 Reducing Diesel NOx and PM Emissions of Diesel Buses and Trucks

Principal Investigator: Hamid Rahai, CSULB; Co-Principal Investigator: Bei Lu, CSULB

06-10 Sources of Electoral Support for Transportation Funding

Principal Investigator: Jefferey Sellers, USC

06-16 Network Accessibility & the Evolution of Urban Employment

Principal Investigator: Christian Redfearn, USC; Co-Principal Investigator: Genevieve Giuliano

07-01 Integrating Inland Ports into the Intermodal Goods Movement System for Ports of Los Angeles and Long Beach

Principal Investigator: Mansour Rahimi, USC; Co-Principal Investigators: Ardavan Asef-Vaziri, CSU, Northridge; Robert Harrison, University of Texas at Austin

07-02 Inter-county Spillovers and Ports and Roads Infrastructure Investment

Principal Investigator: Kristen Monaco, CSULB

07-03 Efficiency Improvements by Passive Control & Optimization of the Combustion Process and Engine Cooling

Principal Investigator: Reza Toossi, CSULB

07-12 On Sequencing of Container Deliveries to the Over-the-Road Trucks from Yard Stacks

Principal Investigator: Shui Lam, CSULB; Co-Principal Investigator: Cheryl Pruitt, CSULB

07-19 Adding a Freight Network to an Interstate Input-Output Model: Implications for California

Principal Investigator: Harry Richardson, USC

08-11 XML Based Supply Chain Integration at the Los Angeles and Long Beach Ports

Principal Investigator: Burkhard Englert, CSULB; Co-Principal Investigator: Shui Lam, CSULB

08-17 Labor Markets in Good Movement Occupations in Southern California

Principal Investigator: Kristen Monaco, CSULB

AR 05-04 Development of a LIDAR Derived Digital Elevation Model (DEM) as Input to a METRANS Geographic Information System (GIS)

Principal Investigator: Suzanne Wechsler, CSULB

AR 07-05 Assessment of Ring Injectors for Reducing NOx and PM Emissions of Diesel Engines

Principal Investigator: Hamid Rahai, CSULB

AR 07-10 Wireless Ad Hoc Sensor Networks: Applications, Evaluation, and Security

Principal Investigator: Tracy Bradley Maples, CSULB

METRANS OUTREACH

Town Hall Addresses Economy's Impacts on Jobs in Local Ports

Jobs and our ports dominated the Tenth State of the Trade & Transportation Industry Town Hall on March 11. Approximately 900 attendees packed the auditorium for the final event in the series.

"The Decade Ahead: Jobs, Cargo, Competition, and You" featured experts from all sectors of goods movement. It was organized by the Center for International Trade and Transportation (CITT) as a METRANS outreach effort.

"A crisis is a terrible thing to waste-let's go to work," said Marianne Venieris, METRANS Deputy Director and Executive Director of CITT.

Paul Bingham, an economist with IHS Global Insight, predicted that

cargo levels will rebound but not to recent high levels for some time.

A video summarized key trends and critical issues in Southern California ports.

Panelists were Alan McCorkle, APM Terminals; Scott Moore, Union Pacific Railroad; Dan Meylor, Carmichael International Service, David Arsenault, Hyundai Merchant Marine; and Patty Senecal of the International Warehouse Logistics Association.

The webcast of this Town Hall is available at www.amp.csulb.edu/uces/amp.

"Going Green" Can Save Money, Say Experts at Logistics Event

A panel of logistics experts dispelled the myth that "going green" in transportation is strictly an expense. At "Supply Chain: Green, The Business Case," they used logistics examples to show how they both cut costs and reduced environmental impact.

The seminar was held March 24 at the Davidson Conference Center on USC's campus.

METRANS co-sponsored the seminar in cooperation with the Southern California Roundtable of the Council of Supply Chain Management Professionals, and the USC Marshall School of Business Center for Global Logistics and Supply Chain.

Speakers Headlining the event was Richard Cameron, Director of Environmental Planning for the Port of Long Beach. He described several port projects that have produced substantial reductions in both operating and environmental costs.

Uri Kogan, an environmental program manager at Hewlett Packard, explained how his company has saved money with several green initiatives.

Bruce Maple of Johnson Diversy, which makes industrial cleaning and hygiene products, shared how the firm's new logistics and warehousing center earned its designation as Leadership in Energy and Environmental Design. Both environmental and cost factors were considered at every step in building the facility.

Distinguished Lecture Series Brings Harvard Professor to USC



Jose A. Gomez-Ibanez
Harvard University's Derek C. Bok
Professor of Urban Planning and Policy

"The Infrastructure Crisis and Private Highways" was the timely topic for METRANS' 10th Anniversary Spring Distinguished Lecture. José A. Gómez-Ibáñez, the Derek C. Bok Professor of Urban Planning and Public Policy at Harvard University, spoke March 12 at the USC campus.

Gómez-Ibáñez explored a dilemma of U.S. infrastructure policy-the recognized need for more investment and the public reluctance to increase taxes and other fees. While some have argued for private financing of private highways, Gómez-Ibáñez finds such a position unpersuasive. He explained that the country needs to find ways to harness private forces to reduce real costs or provide better service.

"His topic was perfect for our 10th Anniversary Distinguished Lecture-provocative viewpoints on a critical topic," said Genevieve Giuliano, METRANS Director. "We were delighted when Prof. Gómez-Ibáñez agreed to travel here for this occasion."

Gómez-Ibáñez currently serves as the faculty co-chair of the Infrastructure in a Market Economy executive program at Harvard's Kennedy School. He has gained international recognition in the field of private enterprise in public infrastructure and is author of several books on the subject, comparing numerous approaches to this critical need in modern society.

METRANS EDUCATION

Adam Gardner Named METRANS Student of the Year

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

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

backseat of a minor league bus!"

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

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



Adam Gardner
METRANS Student of the Year

Hollingsworth Fund Becomes Endowment for Logistics Students

The Richard Hollingsworth Professional Development Scholarship Fund has reached the \$25,000 threshold, becoming an endowed fund at California State University, Long Beach. Hollingsworth, who passed away in August 2008, had long been involved with METRANS, serving as both an Advisory Board member and moderator at many CITT Town Halls meetings. A gift from the Los Angeles Transportation Club (LATC) pushed the sum over the top. The LATC has been a consistent benefactor to both CSULB's Global Logistics Specialist and Master of Arts in Global Logistics programs.

Transportation Students Saluted in Numerous Awards, Events



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

Numerous transportation students at USC and CSULB have recently been recognized with scholarships and other awards by several industry groups.

CTF Mock RFP Competition Two METRANS students competed as part of a winning team of students and senior professionals, who developed a proposal for a real-life transportation project. METRANS funded student travel to Santa Cruz, California for the annual event sponsored by the California Transportation Foundation. USC sent Marie Valentine and Alan Huynh, both from the School of Policy, Planning, and Development and Lily Aung from the Astani Civil and Environmental (CEE) Department of the Viterbi School of Engineering.

CTF Scholarship In addition to competing in the CTF team competition, undergraduate Lily Aung was also the recipient of a \$5,000 scholarship from the California Transportation Foundation in Sacramento.

The award was presented by USC alumna Linda Bohlinger, CTF Chair and Vice-President of HNTB Corporation. Aung won for her essay titled "How I Would Improve California Transportation."

WTS Scholarships The Los Angeles and Orange County chapters of WTS, formerly Women's Transportation Seminar, recently awarded several scholarships to METRANS transportation students. Three USC undergraduates received scholarships from WTS Los Angeles, Tianqi Gao and Catherine Ricafort, both in the Epstein Department of Industrial & Systems Engineering, and Viridiana Martino in the Astani CEE Department. CSULB students were also honored: Angela Goyette, a Masters in Global Logistics student, and Ingrid Li-moseputro from the Global Logistics Specialist program.

USC's Martino and Ricafort also received scholarships from the Orange County WTS chapter. Other WTS Orange County awardees are undergraduate Janelle Patterson and Master's student Nora McIntyre both in the Astani CEE Department, and two Ph.D. students in the School of Policy, Planning, and Development, Yin Wang and Mohja Rhoads.

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METRANS EDUCATION AND RESEARCH

National Urban Freight Conference to Bring Nation's Researchers Together

Offering unprecedented opportunities in collaboration, the National Urban Freight Conference (NUF) will convene October 21-23 at the waterfront in Long Beach, California.

The third NUF, sponsored by METRANS, for the first time will join forces with the National Center for Freight & Infrastructure Research and Education (CFIRE) and the Mississippi Valley Freight Coalition to facilitate collaboration between transportation researchers in a pre-conference workshop scheduled Oct. 20.

"If you want research partners, this is the best opportunity I have seen," promised Genevieve Giuliano, METRANS Director. "By scheduling the two meetings back to back, we have made it easy

Save The Date

**National Urban
Freight Conference
2009**

**October 21-23
Hotel Maya
Long Beach, California**

Abstracts due June 30

Registration details:
www.metrotrans.org

to identify colleagues with mutual interests, and there will also be discussion of how to follow through with their mutual interests."

NUF topics span the gamut of metropolitan transportation, and researchers are urged to check the METRANS website for details on submissions.

The event takes place at the Hotel Maya overlooking the Long Beach waterfront. Make reservations for the newly remodeled hotel at: www.hotelmayalongbeach.com.

See more details about the pre-conference workshop at www.cfire.wistrans.org.

Student Honors, cont.

(Continued from page 5)

Tiebout Prize USC Ph.D. student Yiming Wang recently won the Tiebout Prize from the Western Regional Science Association (WRSA) for the best paper submitted by a graduate student. Wang's paper is titled "White flight in urban Los Angeles County, 1960-1990: A model of fuzzy tipping." The Tiebout Prize carries an award of \$1,000 so that Wang could attend the conference in the Napa Valley.

Inspiration for the paper arose on Wang's bus trips to USC from the Koreatown area. Observing his fellow passengers, Wang says, "I thought I should write something about racial composition in L.A. neighborhoods." His dissertation will continue the same subject.



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



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

METRANS EXECUTIVE COMMITTEE

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Executive Director, Center for International Trade & Transportation, CSULB

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Assessment, College of Engineering, CSULB

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

Joseph Magaddino, Chair, Department of Economics, CSULB

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

METRANS FACULTY

METRANS has funded 87 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

Chin Chang
Anastasios Chassiakos
Robert Chi
Burkhard Englert
Mohammed Forouzesh
Robert Friis
Darin Goldstein
Lisa Grobar
Karl H. Grote
Ken James
Christine Jocoy
Tim Jordanides
I-Hung Khoo
Melody Kiang
Shui Lam
Christopher Lee

Bei Lu
Joseph Magaddino
Tracy Bradley Maples
Kristen Monaco
Ali Nowroozi
Thomas O'Brien
Emily Parentela
Hamid Rahai
Grace Reynolds
Antonella Sciortino
Tariq Shehab
Seiji Steimetz
Reza Toossi
Jalal Torabzadeh
Fei Wang
Suzanne Wechsler
Henry Yeh
Hsien-Yang Yeh

University of Southern California

Garrett Assey
Tridib Banerjee
Jean-Pierre Bardet
Satish Bukkapatnam
Maged Dessouky

Fokion Egolfopoulos
Roger Ghanem
Genevieve Giuliano
Martin Gunderson
Peter Gordon
Randolph Hall
Hossein Hashemi
John Heideman
Petros Ioannou
Clara Irázabal
Erik Johnson
Behrokh Khoshnevis
Sven Koenig
Ilias Kosmatopoulos
Martin Krieger
Bhaskar Krishnamachari
John Kuprenas
Bumsoo Lee
Hanh Dam Le-Griffin
Lavona Lewis
Sami Masri
Naj Meshkati
James E. Moore II
Katharine Moore
Dowell Myers
Fernando Ordoñez

Gary Painter
Kurt Palmer
Alice Parker
Konstantinos Psounis
Viktor Prasanna
Mansour Rahimi
Christian Redfearn
Harry Richardson
Paul Ronney
Lisa Schweitzer
Jefferey Sellers
Cyrus Shahabi
David Sloane
Maria Todorovska
Mihailo Trifunac
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METRANS Website

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



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Dear Reader:

Welcome to the second newsletter of our 10th anniversary year. Our fall issue introduced the new graphic design created by Dann Froehlich of Dann Froehlich Design. I'm sure you agree that we have a most attractive new look. The fall issue was so full of wonderful stories of our many accomplishments that I wondered how we could generate another issue of equal substance. When I met with our editor to outline this issue, however, we discovered that we had more news than we could fit into eight pages.

In addition to organizing some special 10th anniversary events, we are collaborating on several others, and of course our students continue to excel and win awards in their respective fields. Our faculty continue to produce new research publications and reports, and to contribute their expertise to help solve our community's transportation problems. As you read through this issue, I hope you will consider participating in one of our conferences, attending one of our monthly seminars, or viewing one of our webcasts or podcasts. And if you have any ideas for improving our products and communications, we welcome your suggestions.

Genevieve Giuliano
Director, METRANS Transportation Center