Cities fascinate Lisa Schweitzer, and they always have. She attributes it to her small-town Iowa origins. As a youngster, she was drawn to the mystique of transportation, and how it could lead her to big cities. She tells it this way, “I was picking up litter with the sheriff of the small county where I lived, and we were near Highway 20. I asked him where it went and he told me, and then I asked where did that road go. He said it was Interstate 80 and it went all the way to San Francisco.” Enthralled, she wanted to visit. Along the route to her present position as a new Assistant Professor in USC’s School of Policy, Planning and Development, Schweitzer took a turn at social work. “I was not good at it, but I was a good grant writer,” she reminisces. “I noticed so many interesting transportation things about my probation clients. If they were poor and depended on public transport, their lives were radically different than if they could drive.”

So perhaps it is no wonder this small-town Midwesterner now loves living in downtown Los Angeles and studying environmental issues in transportation. But she doesn’t drive. “I am a terrible driver,” she explains. How does this non-driver get along in Los Angeles? “I enjoy riding the bus, because it gives me good insight,” laughs Schweitzer. She uses that insight to study metropolitan transportation issues.

Environmental Justice and Urban Transportation Among her more intriguing research topics is the incidence of hazardous materials spills. “Most spills are generated either onsite or within two kilometers of an intermodal facility,” says Schweitzer. “I did a national study and found that was pretty much true everywhere,” she continues. “A lot of people have a tendency to focus on factories in environmental justice, and these transfer points (intermodal facilities) are really an important land use.”

This issue becomes an environmental justice topic in the context of the demographics of the neighborhoods surrounding typical intermodal facilities in Southern California. “The people on the front lines of this are primarily Latinos,” she notes.

“People are starting to pay more attention to them, because of the diesel trucks, train traffic, etc. When we talk about Homeland Security, we’re talking about environmental justice as well.”

Land Use and Transportation Schweitzer understands the dilemmas of safe residential areas and nearby hazmat transportation routes. “From the shippers’ perspective, they don’t want this either,” she explains. “Good land use

(Continued on page 6)
METRANS News

METRANS ADOPTS NEW STRATEGIC PLAN, CREATES NEW INITIATIVES

METRANS has adopted a new strategic plan, according to Director Genevieve Giuliano. It is the Center’s second strategic plan and is part of the requirements of the Tier 1 University Transportation Center award made to METRANS under the federal SAFETEA-LU Act. “The first plan, when METRANS was established, was about getting up and running,” she continued, “and this one is about building on our accomplishments.”

What’s New First of the new initiatives is the Los Angeles Test Bed, which will allow continuing development of the many goods movement models METRANS research has created. “We will actually engage in demonstrations,” Giuliano noted, “laboratory experiments, technical tests, and simulations related to goods movement.”

METRANS Associate Director Petros Ioannou has been assigned responsibility for developing the test bed. “The idea is that these various activities could take place wherever it makes sense. The modeling could be at USC where we have the computers, but once outside, we could be doing tests on the 405 Freeway or at the ports or on Pacific Coast Highway.”

In the process, Giuliano expects to forge new research partnerships with Caltrans, the City of Los Angeles, and the L.A. County Metropolitan Transportation Authority.

“We can focus on doing things in the real world.” Second, Giuliano aims to broaden METRANS research in goods movement to new locales. “Our next new focus is to examine freight issues in other urban areas—first is New York-New Jersey. We’ve developed ideas about organizations and institutions in the supply chain based on Southern California; but now we need to test those ideas in new contexts—for example, do they apply in San Francisco-Oakland?”

How broadly will comparative research be focused? Giuliano plans a step-by-step approach to globalizing the research, first focusing on the U.S. and later abroad. “We know we have a lot to learn from the Rotterdams of the world.”

Building on Past Success METRANS will also continue to sponsor research on urban mobility, infrastructure, and safety and security, as in the past, said Giuliano. All are oriented specifically to metropolitan problems.

From the start, METRANS has been recruiting a cadre of Principal Investigators with expertise in metropolitan transportation issues. They total 62 today, including those whose applied research has been funded under “Monitoring the Ports” at partner Cal State, Long Beach.

To transfer METRANS findings to practice, two major outreach efforts have impacted literally thousands of people. The METRANS website alone attracts more than 14,000 visits per month. The Annual Town Hall, focused on local port issues, has typically attracted 1,000 people who work or live near the giant Southern California port complex.

The Longer Term
Giuliano’s METRANS goals involve both research and education. “We’re developing a portfolio of research that contributes to understanding and solving transportation problems in metropolitan areas.”

In addition, “We are training a large number of graduate students. We’re also building the transportation research capacity of the two universities. The longer term significance is that the people we train, whether they enter the world of practice or academia, will significantly contribute to solving the types of problems we feel are very important.”

The number of graduate degrees in the field awarded by USC has been on an upward trend since METRANS’ founding. Giuliano hopes graduates carry on the legacy of concern for metropolitan transportation to create more livable cities.
A USC research study ten years in the making has been awarded the 2007 Best Paper Prize by The Institute for Operations Research and Management Science (INFORMS) Transportation Science and Logistics (TSL) Society. “Optimal Slack Time for Schedule-Based Transit Operations,” co-authored by Jiamin Zhao, Maged Dessouky, and Satis Bukkapatnam, appeared in the Nov. 2006 edition of Transportation Science.

Dessouky, Professor at USC’s Daniel J. Epstein Department of Industrial and Systems Engineering, explained that a decade ago, “We had a lot of transit system data and we looked at the nature of delay. How could we predict delay? There is clearly slack in the schedule, so a lot of times the bus arrived early. We asked transit planners how they plan for slack, and we never got a good answer.”

While transit planners often used a “rule-of-thumb,” there was no systematic way to optimize that slack time. “What started this whole body of research is the hub-and-spoke system for airlines,” he continued. “We asked, ‘How do we do the same type of coordination for buses?’ The penalty for missing an airplane is much more severe, so they communicate between them. They don’t do that for buses!”

Early and Late Whenever slack exists, there is a strong possibility a bus will arrive early. Of course, customers who arrive at the bus stop on time will be upset if the bus has already come and gone. If there is too much slack, there is less service; if there is too little slack, the bus will be late a lot of times and people will be upset if they time their arrival to the schedule.”

Using a D/G/c queue model, the authors computed optimal slack time for both a single-bus loop system and a multiple-bus network. Their findings indicate that 25% slack time seems to work for many systems.

The Award The Best Paper Award is given annually to an outstanding paper in transportation science and logistics. It must have appeared in a refereed journal and present innovative approaches for solving complex problems in transportation planning.

Co-authors Zhao, a doctoral student while doing this research, has graduated. He joined Oracle Software and has since started a software business in Beijing. Bukkapatnam, meanwhile, has taken a faculty position at Oklahoma State University.
Local Alum Puts USC Planning Degree to Use in Public Affairs

Todd McIntyre’s earliest memories of USC go way back, as far back as three summers of day camp!

The 2005 Master of Planning graduate grew up near the campus and participated in day camp as a youth.

Much later, working in the office of the Mayor of Los Angeles and searching for a good transportation graduate program, McIntyre found the USC Master of Planning program just a few miles away. But his path to urban planning wasn’t as straightforward as it might appear.

Architecture and Aviation  He earned his undergraduate degree at Morehouse College in Atlanta. He started in architecture but really wanted to be a pilot. “I was always fascinated by airplanes,” he says today, “I intended to be a pilot and got my commercial license. But ultimately I was not able to continue and was working in the mayor’s office.”

City Government Experience McIntyre worked in three different L.A. mayoral administrations, starting in constituent services, or “customer service for the City,” as he terms it. “I worked in a number of different policy areas, but the majority of my time was spent as Transportation Policy Analyst.”

Academic Insights  Once in the graduate program, McIntyre especially enjoyed hearing “the scholarly side of the debates” he heard at work.

“Transit-oriented-development, the benefits of public transit vs. the automobile—these were a lot of the subjects I enjoyed. I learned how they affect our lives, the nexus of transportation and development, how transportation is used to compensate for the development patterns we have imposed. In L.A., we try to make good transit, such as rail or bus lines, fit into a very spread-out land use pattern. It’s often very difficult and expensive from a government perspective. We try to utilize public transit to help to create equitable opportunities, where our land use patterns have not really done that.”

He also especially enjoyed the laboratory courses and practical applications. “Where I grew up, it was all about single family houses,” he recalls, “but in my Masters work, “I learned the benefits of compact development, public transit, and being able to walk to where you live.”

Policy, Practice, and Public Affairs Today McIntyre puts his new degree to work as Planning and Public Affairs Manager at one of L.A.’s best-known independent public relations firms, Cerrell Associates Inc. He works with the land use division, where clients are typically real estate developers.

Advice for Students  McIntyre advises current students to “join professional organizations in their areas of interest. When you’re a student, it is free or very inexpensive. Meet as many people as you can and follow up with them. Send an email or a phone call to thank them for their time. Find out what the job is all about. You’ll need a great network.”

Global Logistics Specialist® Grad Finds Global Opportunities

Ezunial Burts III is a young man with a vision. Enrolling in CITT’s Global Logistics Specialist® Program, he knew it would help him achieve the vision—working in a global business. He was right.

“The GLS program has made me marketable worldwide,” he now says. “Businesses are looking for people who will transform them into viable world players. That’s the gap the GLS® bridges. In five years there will be unlimited opportunities because now I have international experience on my résumé.”

Career Launch  As an undergraduate at USC in Public Policy and Planning, Burts had several internships, including three at Boeing. These prepared him for his first job at the aerospace firm. He recalls, “In January 2007, after receiving my GLS®, I received a promotion and this was directly a result of what I learned in that program. In the interview, they were asking about importing raw materials. The questions I was asked I had no experience in and had no knowledge of prior to GLS® so that course really complemented what I knew already.”

Educational Experiences  Burts’ international education (Continued on page 6)
METRANS Education

TRANSPORTATION DOCTORAL STUDENTS MOVE ON TO NEW CAREERS

Listed below are the seven 2007 doctoral dissertations filed by August 2007.

<table>
<thead>
<tr>
<th>Student Name</th>
<th>Dissertation</th>
<th>Degree</th>
<th>New position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bill (Hongzhong) Ji</td>
<td>Dissertation: “Models and Solution Approaches for Facility Location of Medical Supplies for Large-Scale Emergencies”</td>
<td>Ph.D. in Industrial and Systems Engineering</td>
<td>Staff Researcher at Microsoft Corporation</td>
</tr>
<tr>
<td>Lanlang Wang</td>
<td>Dissertation: “Essays in the Study of Institutions and Development”</td>
<td>Ph.D. in Planning</td>
<td>Assistant Professor at Central University of Finance &amp; Economics, School of Public Finance and Public Policy, Beijing, China</td>
</tr>
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WTS Publishes Book to Help Students Find Jobs

Billed as a book to “revolutionize the future,” the new WTS-Los Angeles (WTS-LA) Transportation Résumé Book CD is aimed at employers looking for transportation talent.

Published in July, it is a compilation of résumés showcasing Southern California undergraduate and graduate students in various areas of transportation. WTS-LA has made it available to their corporate sponsors, approximately 60 firms.

One hundred student résumés are included. Their majors include Transportation Engineering, Transportation Planning, Environmental Management, Public Policy, and Logistics. They represent five universities: California Polytechnic Univ., Pomona; California State University, Long Beach; U. C., Santa Barbara; U.C.L.A., and the University of Southern California.

Linda Weston, WTS-LA First Vice President and Regional Marketing Director for Jones & Stokes, directed the project. “It was Prof. Jim Moore’s idea,” she noted. “We appreciate that!” Moore is an at-large member of the WTS-LA Board of Directors as well as a METRANS Executive Committee member.

Weston said that she has already been told that some of the students have been hired as a result of the book. Not satisfied with that success, though, WTS-LA hopes to grow The Résumé Book in coming years. Weston has just handed the project over to Diane Ricard of DMR Consulting in Pasadena, who will poll the WTS-LA sponsors to find out how it was used and how to improve it.

Next year, the new book is expected to be published in spring and to expand the number of universities included from five to ten.

“We may do résumé workshops, too,” said Weston, “in order to help students present themselves professionally.”
did not start with the GLS\textsuperscript{®} Graduate, however. He recalls following his father, the well known former director of the Port of L.A., around the busy port on Saturdays as a small child. “He'd ask, ‘Where did those shoes on your feet come from?’” It was an unforgettable lesson in global trade for a youngster. Later, Burts found several components of the GLS\textsuperscript{®} program especially helpful. “The most striking thing was the cohort groups. We joined with students from different cultures toward a common goal. Being immersed in the program led me to embrace borderless thinking! Also, in the capstone project, we put together a problem-solving logistics plan for a company—that was an unmatched experience.” His capstone project group included an employee of a steamship line, an information technology specialist, and a Brazilian lawyer. “It was a great networking experience.” The Future Burts has since also completed a certificate at Thunderbird School of Global Management, and he plans to enroll in an MBA program. But first, he will take a hazardous materials course and another in land disposal notification training from CITI.

Burts advises students to find a mentor in an industry the student likes. “Ask about the career path and how to obtain entry in the industry.” It is a lesson he learned long ago.

**(Continued from page 1)**

**Environmental Justice, cont.**

planning protects both the residents and the facilities. Good buffer zones are in the interests of everyone.” Such applied questions of environmental justice fascinate Schweitzer, and she has a soft spot for those who live and work “in the trenches.” “The real work of environmental justice is happening among activists, and they give me really good ideas for research.” For example, as a doctoral student at UCLA, her dissertation about hazardous materials resulted from conversations with activists. “We had these huge models for hazardous materials determining the routing through cities, minimizing population exposure. The routing software is extremely good. But then I listened to activists talk about how the traffic really irritates them and how it made them feel they were at increased risk because of living near the terminals. That’s a really different empirical question.” She was intrigued. “Each link of a trip has some hazards associated with it due to traffic, road configuration, etc. It is not the same as saying ‘Our risk is different, being close to the origination or destination.’ I didn’t think anyone had ever studied it. So I did.” Her findings somewhat corroborated the fear felt by neighbors. “There are reasons why spills happen at those points—a node concentrates the risk.” On the other hand, she notes that “It’s actually a good thing small spills happen where there are professional staff to deal with it. They’re extremely infrequent—people have a much higher risk of being hit by a car—however, evacuations are irritating enough and people really hate them!”

Refinery Risks In recent research, Schweitzer has tracked the accidents of the major Southern California oil refineries and found significant differences among them. “The likelihood of new incidents is a function of previous incidents,” she notes, probably because safety training, operational practices, and equipment vary. Yet locally they are all found near poor-to-moderate income residential areas, exacerbating the environmental justice issue. Schweitzer feels safety risk information could be helpful to land use planners. Yet they typically do not have access to such information. Instead the information is used by risk specialists—e.g., the insurance industry. She hopes to add risk assessment to the planner’s tool kit. In the interim, her analysis is challenging reviewers. “The method I used, a Bayesian approach, will over-predict a little, but I’m making an argument that land-use planners should be taking into account all this.”

Teaching Professional Planners In addition to research, Schweitzer enjoys teaching. At Virginia Polytechnic University, she won the Award for Teaching Excellence in the College of Architecture. “I get a kick out of being able to talk about topics I am passionate about—and I love teaching planners! I love my job, and I love watching my students become professionals,” she said with a smile in her voice.

At USC, Schweitzer enjoys the variety of applied backgrounds her students bring to the classroom. She currently has a student who served in the Peace Corps in Honduras and another who has worked for the Federal Energy Regulatory Commission. With such connections, Schweitzer’s findings about transportation and environmental justice are likely to have a very wide impact indeed.
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METRANS Faculty

METRANS has funded 62 faculty at USC and CSULB who are now members of the METRANS Center. Consistent with METRANS’ interdisciplinary theme, they come from six branches of engineering (aerospace, civil, computer, electrical, mechanical and industrial & systems), as well as business, economics, geography, information sciences, public policy, planning, public administration and health sciences. These faculty serve as principal investigators on METRANS-funded projects. They also come together periodically to share insights at coordination meetings and conferences.

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METRANS Website

Information on transportation research, publications, education, training & technology transfer can be found at the METRANS website: www.METRANS.org. The site also lists faculty, news, links to other relevant sites, and information on USC & CSULB transportation education programs.
Dear Reader:

Welcome to our Fall 2007 newsletter. Our academic year got off to a fast start, with selection of this year’s research proposals taking place in September and our staff now fully engaged in preparation for our Second National Urban Freight Conference. We are particularly pleased with this year’s research proposals, as we funded many faculty new to transportation research. We continue to build transportation research expertise at both universities, one of the major goals of the UTC program.

I encourage you to attend our forthcoming National Urban Freight Conference, December 5-7. It is the only conference focused on freight in metropolitan areas, so it provides a unique opportunity to hear leading-edge research on issues of great interest and concern to urban areas throughout the U.S. Many of our METRANS faculty will present their work, showcasing the results of our research program. For more information on our research, see p. 3 or look on our website.

Genevieve Giuliano
Director, METRANS Transportation Center