

METRANS NEWS

USC University of Southern California

CALIFORNIA STATE UNIVERSITY
LONG BEACH

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

Summer 2018 Volume 17 Issue 2

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METRANS
Transportation Center
USC | CSULB

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

METRANS OUTREACH

METRANS Alumni, Where Are They Now?

20 **METRANS**
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20 YEARS OF EXCELLENCE
1998 – 2018
ANNIVERSARY

The success of METRANS research would not be possible without the research assistants who work on the various grant-funded projects. METRANS covers a large variety of research areas, which has afforded students invaluable opportunities to plug into a wide

professional network. Over the course of twenty years, numerous students have lent their skills and expertise to the long list of METRANS research projects. These students have gone on to become both the faculty and professionals in the industry. As part of our celebration of the research accomplishments of METRANS throughout the years, student alumni have been asked to share their experiences with METRANS and tell us where they are now.

"METRANS was key in laying the foundation on which I have built my academic career. As a student METRANS assistant, I learned numerous organizational and administrative skills. I worked on several research projects, including my own dissertation, that were funded by METRANS. Without METRANS, I would not be where I am today."

-Ajay Agarwal, Associate Professor at Queen's University (Canada), Graduated 2009 (USC)

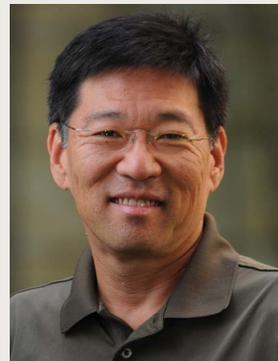
"I am currently starting this new position at the Federal Maritime Commission and during the interview, they specifically asked about my experience on the METRANS Chassis Pool project. A group at the agency is conducting chassis pool research and my experience on this project is valuable to them."

-Hayley Brandt, Industry Economist (Federal Maritime Commission), Graduated 2009 (Long Beach State University)

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PSR RESEARCH

Karl Kim Brings Resiliency Expertise to PSR Research Partnership



Karl Kim

When Hurricane Maria hit Puerto Rico in 2017 and the Kilauea volcano erupted this year, Karl Kim was one of the first on the ground. Karl Kim—Professor of Urban and Regional Planning at the University of Hawai'i (UH) Mānoa, Executive Director of the National Disaster Preparedness Training Center (NDPTC), and the Pacific Southwest Region 9 (PSR) Project Investigator (PI) for UH—has dedicated his research to disaster risk reduction and emergency preparedness. Strategic resiliency planning is one of PSR's research focus areas.

Through the NDPTC, Kim and his team have developed numerous education and training programs and have trained over 37,000 first responders and emergency managers across the United States. "It is important to recognize that many of our port and transportation facilities are already suffering from congestion and require

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METRANS OUTREACH

METRANS Alumni, Where Are They Now? *continued from Page 1*

"METRANS played a significant role in my development as a transportation researcher and teacher. The center offers great opportunities to faculty and students from diverse backgrounds (across engineering and social sciences) to conduct interdisciplinary research in urban transportation and related subjects. I worked with and around some of the most distinguished faculty and talented students from the US and abroad. It was an enriching experience for me, and I learned a lot. In addition, the seminars, webinars, field-visits, conferences, and workshops organized by the METRANS team provided unprecedented resources for personal development. The center has access to great data, invaluable computing resources, and, most importantly, brilliant and supportive people. METRANS is the reason why I applied to the Ph.D. program at USC Price, and it has profoundly shaped my academic life."

-Sandip Chakrabarti, Assistant Professor at the Indian Institute of Management Ahmedabad, Graduated 2015 (USC)

"METRANS research projects have trained me to be a rigorous researcher that connects academic research with real-world planning issues. In addition to participating in research projects from start to end, I was also exposed to various stakeholders, and this exposure helped me to understand the diversity and complexity of transportation planning issues. The training that I received and the knowledge I gained have benefited me immensely through my academic career, and I will make sure that my students have similarly valuable research experience as I had with METRANS."

-Lingqian Hu, Professor, Graduated 2010

"METRANS projects taught me how to systematically identify, approach, solve, and appreciate real-life transportation problems applicable to mega cities, particularly Los Angeles and Long Beach in California."

-Hossein Jula, Lecturer at CSULB, Graduated 2002 (USC)

"METRANS profoundly expanded my understanding of freight and passenger mobility, opening career opportunities in public sector service in New York and Washington D.C."

-Kristine O'Brien, Legislative Aide for Senator Charles E. Schumer, Graduated 2015 (USC)

"METRANS gave me the opportunity to expand my engineering skills, specifically MATLAB, as well as team work skills. The skills that I obtained while working on a METRANS research project assisted in my efforts to receive an internship at Northrop Grumman. The internship then led to a full-time position as a systems engineer at Northrop Grumman. Additionally, I will be continuing my studies at UCSD, and my research that I did with METRANS likely had an impact on my acceptance to UCSD."

-Matthew Shellhammer, Systems Engineer and Grad Student at UCSD, Graduated 2018

PSR RESEARCH

Karl Kim Brings Resiliency Expertise to PSR Research Partnership *continued from Page 1*



expansion," said Karl Kim. "Many facilities are already at capacity. What will happen if a major disaster occurs closing or damaging or disrupting the facilities?"

Currently, Kim and his team have been studying the aftermath of Hurricane Maria, which left hundreds of thousands displaced and without electricity. Natural disasters like Hurricane Maria impose port closure and a disruption of supply chains.

"Efforts have increased to include transportation resilience into the master planning for ports and harbor facilities.

The challenges include planning and anticipating extreme events such as hurricanes or tsunamis and also accounting for the effects of sea level rise and how best to mitigate and adapt to these environmental stressors," said Kim. "In addition to the design and engineering challenges, there are also underlying questions as to how to finance and who should pay for these improvements and risk reduction strategies."

The NDPTC and Kim already work with universities that make up the National Domestic Preparedness Consortium, the Natural Hazards Center of the University of Colorado at Boulder, and with universities in the Asia-Pacific region, which are funded through the USAID and also focus on risk reduction. Since the PSR-UTC covers a diverse set of hazards and threats, Kim has recognized the great value of the UTC partnership as a shared network for information, technologies, and research across different disciplines and locations.

Read more about the National Disaster Preparedness Training Center (NDPTC) at the University of Hawai'i: <https://ndptc.hawaii.edu/>

Read more about Karl Kim's research and publications: <http://bit.ly/2NJnMRN>

Read more about ongoing PSR research projects: <http://bit.ly/2CygYBY>

PSR RESEARCH
PSR Year 2 Awards



Over late spring and summer, PSR partners issued the Year 2 Request for Proposals. Each partner solicits proposals, conducts a peer review, and makes recommendations for awards. The recommendations are reviewed and approved by the PSR Executive Committee. As of this issue, awards for USC and pool fund projects have been made.

University/ID	PI/Co-PI	Proposal Title
USC 18-02	Maged Dessouky, Phebe Vayanos	Cost-Sharing Mechanisms for Ridesharing
USC 18-04	Marlon Boarnet, Gary Painter, and Rafael Bostic	Measuring Accessibility Changes for Households Moving Away from Rail Transit Areas
USC 18-06	Petros Ioannou	Connected Autonomous Vehicles: Safety During Merging and Lane Change and Impact on Traffic Flow
USC 18-07	Dan Wei, Adam Rose, and Lucio Soibelman	Socioeconomic Dimensions of Resilience to Seaport and Highway Transportation Network Disruptions
USC 18-08	Andreas Molisch	Measurement and Modeling of Broadband Millimeter-Wave Signal Propagation Between Intelligent Vehicles
UCSB 18-09	Konstadinos Goulias	An Analysis of Accessibility, Social Interaction, and Activity-Travel Fragmentation in California
USC 18-10	Cyrus Shahabi, Yao-Yi Chiang Deep	Learning Traffic Flow Prediction for Forecasting Performance Measurement of Public Transportation Systems

METRANS OUTREACH

METRANS Associate Director Victoria Deguzman Wins USC Price Staff Award



Victoria Deguzman

METRANS Associate Director of Education and Professional Development Victoria Deguzman received the 2018 Margaret Harrington Outstanding Staff Award. Deguzman has been recognized for 17 years of work with the USC Sol Price School of Public Policy. Over the years, she has advocated for students’ personal and professional development while fostering her own growing interest in the transportation industry.

Deguzman is an advocate for gender equality within the transportation

workforce. Through her role as a special advisor to the President of Regional Outreach Lead at the Women’s Transportation Seminar International (WTS), she has supported women’s advancement in the industry. Furthermore, she recently received her Doctoral degree in policy, planning, and development from the Price School.

“She has benefitted the Price School in many ways,” said Jim Moore, USC Price School and Viterbi School professor. “She has pioneered numerous student enrichment programs while at the Price School. These programs have impacted hundreds if not thousands of students and her efforts resulted in the only academic center campus-wide with such programming.”

Visit the website to read the full article: <http://bit.ly/2oNbDxi>

MetroFreight researchers—Thomas O'Brien, Gen Giuliano, Alison Conway, and Laetitia Dablanc—were featured as presenters at the third annual MOBILIZE conference in Dar es Salaam, Tanzania. MOBILIZE is the annual sustainable transport summit of the Institute for Transportation and Development (ITDP).

Each year, ITDP and the Sustainable Transport Award (STA) Committee select a city that has implemented innovative sustainable transportation projects in the preceding year. The winning city then hosts MOBILIZE in the following year. MOBILIZE gives transport professionals and researchers from around the world an opportunity to experience the STA winning city as a learning lab for how to implement similar-scale projects and foster greater global resource allocation toward making streets, transport systems, and cities the best possible places for people.

Dar es Salaam won the 2018 Sustainable Transport Award for its investment in DART, a high-quality, high-capacity bus rapid transit system that carries approximately 400,000 passengers per day, reduces commute times by more than half for residents, and includes safety and mobility features for cyclists and pedestrians as well.

This year's conference sessions focused on how to manage active transportation, transit service, public health, financing, public space, and urban freight within high-growth environments.

METRANS Associate Director Thomas O'Brien explored the relationship between sustainable freight technology and workforce development. He cited both the challenges and benefits of these technological applications, from the new skilled, multi-disciplinary positions they create to the possible automation of tasks and displacement of workers.

MetroFreight Director Gen Giuliano focused on managing market failures in urban freight. She examined issues such as safety, pollution, and passenger conflicts in terms of truck-based goods movement in high-density cities. She discussed the factors underlying market failures and discussed some best practice solutions.

MetroFreight researcher Alison Conway, Associate Professor in the Department of Civil Engineering at the City College of New York, spoke to functioning freight in livable cities. Conway outlined common challenges of goods movement, from design to navigation and curbside issues, and then offered approaches for solutions on both operational and policy levels.

Laetitia Dablanc, Director of Research, IFSTTAR, French Institute of Science and Technology for Transport, Development and Networks, University of Paris-East, covered the topic of urban planning and land-use in relation to freight. Dablanc discussed how to accommodate the emerging demand for urban warehouses.



Alison Conway and attendees participate in an interactive workshop



Thomas O'Brien presenting on transformational technology and the future workforce.



MOBILIZE Bike Tour of Dar es Salaam



Delivering people and goods in Dar es Salaam



Laetitia Dablan, Alison Conway, and Gen Giuliano at VREF Network Workshop

The Volvo Research and Educational Foundations (VREF), one of the sponsors of MOBILIZE 2018, held a VREF Network Workshop immediately before the three-day conference. MetroFreight, one of the VREF Centers of Excellence, was represented by researchers Giuliano, Conway, Dablan, and O'Brien. They participated in a session titled, "Moving Goods in Metropolitan Areas." Giuliano, Conway, and Dablan gave presentations on the problem of urban freight, livability and streets, and planning and land use in relation to freight. The session was moderated by O'Brien.

Sue Dexter, a PhD student in the Sol Price School of Public Policy at USC and Lead Instructor and Capstone Advisor for the Center for International Trade and Transportation (CITT)'s Global Logistics Specialist program at Long Beach State University, participated in the VREF PhD workshop held at the conclusion of MOBILIZE. She presented her research on ideal electric charging station locations and what the impact would be on the electric grid if battery electric heavy duty trucks replaced diesel trucks in urban freight.

At the Network Workshop, VREF announced its intention to support mobility and access in African cities for the next five years. VREF also introduced three new thematic initiatives: governance of urban change; relations between individuals, technology, society, and business models, with a focus on socially inclusive access; and the vulnerability, security, and safety in transportation and mobility landscapes.

To read more about MOBILIZE, visit the website: <https://mobilizesummit.org/>

To read more about VREF, visit the website: <http://www.vref.se/>

METRANS EDUCATION

Two CITT Research Assistants Named Finalists in SCAG Story Map Competition



Benjamin Olson and Sean Reseigh

The Center for International Trade and Transportation (CITT), housed at Long Beach State University, sent two of the Center's research assistants, Sean Reseigh and Benjamin Olson, to SCAG's 53rd Regional Conference and General Assembly as finalists for an Esri Story Map Competition.

"It was such a valuable experience to be able to attend the SCAG General Assembly and witness the sharing of ideas between regional transportation leaders and network with local companies," said Olson.

World Geography class at school, "Stacie" is introduced to GIS through guest lecturers from Caltrans. She is then inspired to sign up for a GIS dual-enrollment course held at Los Angeles Trade Technical College (LATTC), which then prompts her to earn a GIS certificate, a BA in Geography, and a Masters in GIS at Long Beach State.

To view the "Driving GIS Career Pathways" Story Map, visit: <https://arcg.is/0P1qia>

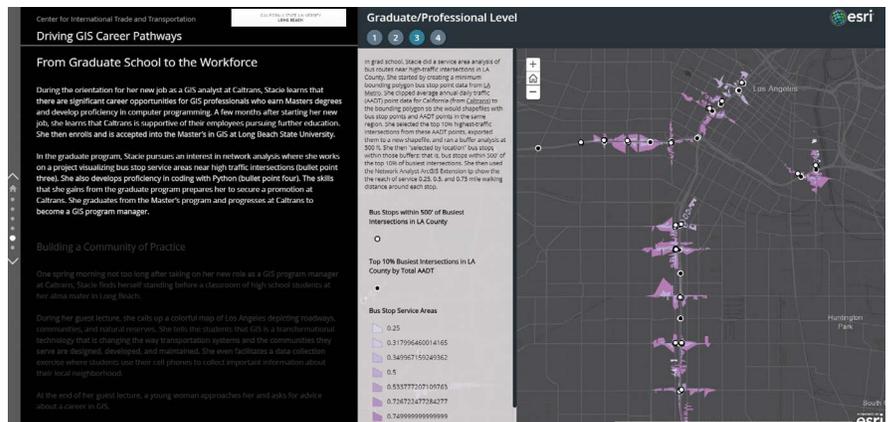
To read more about the Esri Story Map Contest, visit their website: <http://bit.ly/2kfbYX7>

Visit the website to read the full article: <http://bit.ly/2LZ0iTT>

Below: Screen grab of story map

"The SCAG General Assembly was a highly valuable experience that exposed me to the State's leaders in transportation planning and development and infrastructure development. Sharing our Story Map with SCAG employees and other college students was a significant career stepping stone for both Ben and I," said Reseigh.

Their Story Map, titled "Driving Geographic Information Systems (GIS) Career Pathways," outlined the journey of a fictional student progressing through a GIS-driven career pathway. Beginning with a fateful day in her



METRANS OUTREACH

METRANS Activity at the Council of University Transportation Centers' 2018 Summer Meeting



Thomas O'Brien

Executive Director of the Center for International Trade and Transportation (CITT) and METRANS Associate Director Thomas O'Brien was recently elected Vice President of the Council of University Transportation Centers (CUTC) at the 2018 CUTC Summer Meeting in Minneapolis.

As vice president, O'Brien has the responsibility of coordinating the Committee's activities surrounding

the planning of the CUTC annual banquet. The current president of CUTC is Dr. Karen Philbrick, Executive Director and Director of Research at San Jose State University, Mineta Transportation Institute.

"I look forward to serving a group whose sole purpose is raising the profile of transportation research, education and training, and supporting the students in our programs," said O'Brien. "In particular, I look forward to contributing to the annual CUTC banquet honoring transportation leaders and showcasing the best and brightest students our nation has to offer."

Visit the website to read the full article: <http://bit.ly/2wOWIGm>

METRANS OUTREACH

PSR Hosts 2018 National Travel Monitoring and Exposition Conference



The Pacific Southwest Region 9 University Transportation Center (PSR UTC), one of METRANS' research centers, organized and hosted the 2018

National Travel Monitoring and Exposition Conference (NaTMEC). The conference provides the premier venue where state and MPO traffic data collectors, traffic data users, academics, and managers of data programs come together to be aware of new products and services.

The four-day conference included sessions within four different tracks:

- Traffic Data Collection sessions highlighted cutting edge innovations related to traffic monitoring equipment, field fundamentals, technology, maintenance, and data collection methods for motorized, bicyclist, or pedestrian traffic.
- Traffic Data Tools sessions focused on best practice tools as they relate to traffic data analysis, quality assurance, reporting, storage, and presentation methods, including: software and specialized products for motorized; data integration, analysis, and quality assurance; data visualization; data reporting; vendor tools; and new technologies.
- The Traffic Data Utilization and Non-motorized track detailed shared experiences, innovations, and best practices using motorized, bicyclist, or pedestrian traffic data from State Programs, Metropolitan Planning Organizations (MPO), local agency programs, and private industry, with aspects of data visualization and data sharing between agencies.
- Lastly, Traffic Data Applications sessions dealt with the utilization of traffic data in various applications such as database integration for improved decision making, improving traffic volume estimates, work-zone performance evaluation, congestion monitoring, disaster planning and operations management, and MAP-21 reporting, featuring new types of traffic data and their application in these areas.

Presentations at NaTMEC ranged from "Collision Data Analysis" to "Intersection Pedestrian Tracking through Bluetooth Technology" to "Urban Redevelopment Impact on Measuring and Utilizing Non-motorized Traffic." The conference also held meetings, poster sessions, and workshops, including a mobile workshop in the form of a guided bicycle tour of Orange County.

"We were thrilled to host NaTMEC 2018," said Victoria Deguzman, METRANS Associate Director of Education and Professional Development. "This year's conference drew a record number of attendees (nearly 500), a record number of student participants (more than 50), a record number of vendors (35), and, for the first time, corporate sponsorships. We are truly grateful to all who made this possible—the FHWA for giving us this opportunity, and the countless number of staff, volunteers, vendors, and sponsors who generously shared their time, talent, and resources to make this event such success."

Visit the METRANS website to read the full article: <http://bit.ly/2MUWdFm>



Steven Jessberger (Traffic Monitoring Program Manager, Traffic Monitoring and Surveys Division, FHWA), Victoria Deguzman, and Tianjia Tang (Chief of Traffic Monitoring and Surveys Division, FHWA)

METRANS EDUCATION

Federal Highway Administration Leadership Visits LA-based Career Pathway Programs

Virginia Tsu, Director of the Center for Transportation Workforce Development at the Federal Highway Administration (FHWA), recently visited the Los Angeles Trade Tech College's (LATTC) Introduction to Geographic Information Systems (GIS) pilot course, developed in partnership with the Southwest Transportation Workforce Center (SWTWC), a METRANS center based at Long Beach State University. Tsu was able to experience firsthand the beginning stages of an active transportation career pathway and the products of SWTWC's workforce development research.

Career pathway development research shows that GIS skills are becoming highly sought out by employers; thus, creating and implementing introductory GIS curriculum has become a research priority for SWTWC. The LATTC GIS pilot course was set up to offer one such transportation planning curriculum where none formerly existed, demonstrating how students can use GIS as an entry to transportation planning career pathways. The LATTC pilot course also extends opportunities to K-12 students through the college's dual enrollment program.

The program, called ARC 341: GIS Metropolitan Access Planning Systems, introduces students to fundamental principles and concepts that reinforce the practice of geographic analysis with GIS, including: computer representation of geographic data, vector and raster data models, map projections, coordinate systems, spatial analysis, and map design. The course notably features an Esri collector app on students' mobile devices, designed by METRANS research assistants at Long Beach State, utilized during an engaging walk-audit activity in which the class collects and later analyzes geospatial data to assess the transportation systems around campus. In addition to these skills, ARC 341's unique curriculum includes career pathway materials to point students beyond high school in the application of what they learn. After finishing this course, students are expected to apply their knowledge and skills to perform real-world tasks and solve problems.

To read more about SWTWC, go to: www.swtwc.org

Visit the website to read the full article: <http://bit.ly/2wQzmQq>

METRANS OUTREACH

METRANS Welcomes Associate Partner Spotlight: Justin Thompson of Nixon Peabody LLP



Nixon Peabody LLP, a global law firm with offices in the U.S., Europe, and Asia, is METRANS' newest associate partner. The attorneys in the firm's Los Angeles office focus

on a broad range of finance, corporate, healthcare, intellectual property, litigation, and transactional matters and have been particularly forward-thinking about autonomous vehicles and their impact on real estate, land use, and public finance.

"With their broad base of clients, Nixon Peabody is in a unique position to work on the legal front concerning adoption plans, municipal codes, and effective policy as these technologies integrate into the daily movement of people and goods," said METRANS Associate Director Thomas O'Brien.



Justin Thompson

Justin Thompson, managing partner of Nixon Peabody's Los Angeles office and a partner in the firm's real estate group, has joined METRANS' Advisory Board to bring the legal perspective to METRANS' transportation research. Thompson advises commercial and industrial developers, investors, lenders, and property owners on all aspects of real estate transactions.

The landscape and infrastructure of the 88 cities that comprise Los Angeles County will need to change to accommodate these new technologies, and Nixon Peabody seeks to work with private parties as well as the government and research sector on projects and policies that will ensure a smooth transition.

"Autonomous vehicles could have endless benefits for our society but only if their adoption is coupled with proper planning and implementation," said Thompson. "We welcome being part of the thought leadership around this important technology and what it means for our city."

Thompson is a contributor to Forbes on the topic of automated vehicles. One of his articles discusses the necessary changes to laws and people's driving habits to guide a more seamless transition for automated vehicles into society, while another considers the potential rise in the value of homes with the increased and daily use of automated vehicles.

"It's exciting to have Justin's perspective and presence on the Advisory Board. METRANS can only benefit from teaming up with a law firm to usher in the future of urban mobility," said METRANS Director Genevieve Giuliano. "Nixon Peabody understands and embraces the progress of advanced transportation modes, and it allows us all to work together to ensure that these technological changes are to our sustainable benefit and safety."

To find out more about Nixon Peabody's autonomous vehicles initiative, visit their website: <http://bit.ly/2KSWwPz>

To read about Thompson's Forbes articles, click here: <http://bit.ly/2IYF3Qv>

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To learn more about MAP and its benefits, see www.metrotrans.org/metrans-associates-program



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