



# 2014 ANNUAL | REPORT





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# ABOUT THE MINETA TRANSPORTATION INSTITUTE AND THE MINETA NATIONAL TRANSIT RESEARCH CONSORTIUM

The Mineta Transportation Institute (MTI) was originally designated by Congress as a non-technical, policy research and education center in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 and reaffirmed by the Institute's Board of Trustees after reauthorization in the Transportation Equity Act for the 21st Century (TEA-21) in 1998. MTI undertakes research, education, and information/technology transfer programs relative to the policy control and management of all surface transportation modes. Within those parameters, MTI produces studies of the best examples of surface transportation policy and management activities in the world, accumulates those into peer-reviewed publications, and communicates best practices to MTI's professors, students, and the nation's transportation leaders via national summits hosted by the world-class MTI trustees and through sophisticated, targeted media distributions. MTI won Tier I designations during the 2002 and 2006 competitions. Most recently, MTI successfully competed in the Surface Transportation Extension Act of 2011 to be named a Tier 1 Transit-Focused University Transportation Center.

MTI is organized by function, with directors operating in each of three departments – Research (including the National Transportation Finance Center, the National Transportation Safety and Security Center, and the National

High-Speed Rail Connectivity Center), Education, and Communications and Information/Technology Transfer.

In the 2011 competition, MTI was selected as lead institution for a nine-university transit consortium funded by the Federal Transit Administration via the Office of the Assistant Secretary for Research and Technology (formerly the Research and Innovative Technology Administration) of the US DOT and tasked with “Delivering Solutions that Improve Public Transportation.” That new organization became the Mineta National Transit Research Consortium (MNTRC). The other eight partners include Bowling Green State University, Grand Valley State University, Howard University, Penn State University, Rutgers University, University of Detroit Mercy, University of Nevada Las Vegas, and University of Toledo.

MNTRC's goal is to expand and synergize each member university's unique abilities and expertise to respond as a group to national transit-related research needs. MNTRC conducts research to meet the US DOT strategic goals of safety, state of good repair, economic competitiveness, livable communities, and environmental sustainability.





# DIRECTOR'S SUMMARY

## Executive Director Karen Philbrick, PhD

In a poignant moment at the Mineta Transportation Institute's Annual awards banquet and convocation in June, Rod Diridon symbolically handed over the reins of the agency whose success he has guided for the past 23 years. His planned retirement as executive director of MTI and the Mineta National Transit Research Consortium concludes an outstanding career in public service and dedication to the public good.

He has been honored by dozens of organizations. In January, he received a Lifetime Achievement Award from the Council of University Transportation Centers at its awards banquet in Washington DC. In June, History San Jose named its historic trolley barn after him, in October he was inducted into the American Public Transportation Association (APTA) Hall of Fame and Metro Magazine identified Rod as one of the most influential people of the decade in the transportation industry! He is warmly embraced by the Consortium and MTI, where he will continue to offer expert guidance in an emeritus role.

### BOARD WELCOMES NEW CHAIR

The Consortium's Board of Trustees was pleased to welcome new chair, Stephanie Pinson. As a longtime board member, Ms. Pinson has contributed valuable insights at every meeting. Her roots in the transportation industry run deep. She is president of Gilbert Tweed & Associates in New York City, specializing in executive searches for mobility leaders. She received the gavel from outgoing chair Steve Heminger in June at the Mineta Transportation Institute awards banquet and convocation.

With the co-chair position open, the Trustees elected Nuria Fernandez to the role. Nuria is CEO of Valley Transportation Authority in San Jose, CA, having arrived from a previous position as COO with the New York Metropolitan Transportation Authority. She also served as a senior vice president with CH2M Hill.

### AWARD WINNING STUDENTS, FACULTY, AND STAFF

MTI students, faculty, and staff received numerous awards in 2014 and we are proud to highlight these transportation professionals.

At the 2014 Council of University Transportation Centers awards banquet in Washington DC, MTI Master of Science in Transportation Management (MSTM) student Martin Barra received the **Neville A. Parker Award** for his outstanding non-thesis paper in the field of policy and planning in transportation studies. His paper titled "Evaluation of Service Design Characteristics for Concurrent BRT and Local Bus Service in Santa Clara County and Other Urban Corridors" marks the fourth time MTI students have won this prestigious award in the prior six years!

At this same banquet, MSTM student Naomi Armenta was named MTI's Student of the Year. Naomi was also the proud recipient of the Metropolitan Transportation Commission's 2014 Doris W. Kahn Accessible Transportation Award.

Gary Richards, adjunct faculty for the MSTM program and the "Mr. Roadshow" columnist for the San Jose Mercury News, also received an Award of Merit from the Metropolitan Transportation Commission. He receives as many as 1,000 emails a week on Bay Area transportation topics as he highlights regional transportation issues and advocates for improvements.

MTI conducted its annual banquet and convocation ceremony at the new SJSU Student Center ballroom on June 21. The event attracted a record number of attendees, and MTI hooded 21 MSTM candidates for graduation. Former MSTM faculty member and Deputy Director of the Federal Transit Administration Therese McMillan was keynote speaker. Naomi Armenta was valedictorian, while Mary Frederick (MSTM 2003 and Office Chief, Caltrans, Division of Project Management) was honored as MSTM 2014 Alumna of the Year.


Brandi Childress (MSTM class of 2008) was named an American Public Transportation Association's Member of the Year while alumna Rachel Donovan was named *Bike to Work Day's Bay Area Bike Commuter of the Year*. Her efforts and pro-bike attitude helped push Caltrans to third place in the 2013 Region-wide Company Bike Challenge and first place in Alameda County.

MTI Research Associate Matt Holian, PhD was selected for the University's "Early Career Investigator" award for the quality of his research. In particular, he has excelled with two reports he completed for MTI The Impact of Center City Economic and Cultural Vibrancy on Greenhouse Gas Emissions from Transportation and California Voting and Suburbanization Patterns: Implications for Transit Policy.

Executive Director Philbrick was reappointed by US Secretary of Transportation Anthony Foxx to the US Department of Transportation Advisory Committee for Safety (TRACS) for a second two-year term. Last month, she was appointed chair of the Federal Transit Administrator's Tasking 14-02, which is identifying key elements of a Safety Management System approach to a fatigue management program for transit.

### A BRIGHT FUTURE

The MNTRC/MTI staff enjoys this extraordinary opportunity to identify, teach, and share with the nation the world's best surface transportation policy and management practices. As we head into a bright future, we look forward to engaging even more energetically with the MTI/MNTRC Board, our university partners, our outstanding team of research and consulting associates, and our dedicated staff.



Karen Philbrick, PhD  
Executive Director

## CONSORTIUM DEPARTMENTS

### Research Department

Executive Director and Research Director  
Karen Philbrick, PhD

Since 1999, MTI has published 193 expertly-conducted, peer-reviewed policy research projects. MNTRC has 37 more projects under contract and in process. During this reporting period, research supported by the SAFETEA-LU and Caltrans grants engaged 76 of MTI's 282 certified Research and Consulting Associates, most of whom are PhDs, as well as 43 student research assistants. Significant research and information transfer efforts (local and regional forums, national symposia or summits, etc.), often sponsored with the Board of Trustees using non-grant funds, have also been completed. Research topics are selected annually through a carefully structured needs assessment process involving designated US DOT and Caltrans committees, the internationally prominent MNTRC/MTI Board of Trustees, and other national transportation leaders. The projects and research teams are chosen after a structured bidding and selection process. Final project selection is made by the MTI Research Associate Policy Oversight Committee (RAPOC), which is made up of the seven chairs, or their designees, of the interdisciplinary academic departments at SJSU that are associated with MNTRC/MTI. The summary of activities for the three sub-centers in the Research Department follows.

### MTI's National Transportation Safety and Security Center (NTSSC)

Director Brian Michael Jenkins and Deputy Director Frances Edwards, PhD

In 2004, with the approval of its Trustees, MTI established the National Transportation Safety and Security Center (NTSSC) funded jointly by US DOT and Caltrans grants. MTI's NTSSC research includes all threats – not only terrorism, but also natural disasters, accidents, operational emergencies, and other hazards prioritized by the Federal Transit Administration (FTA). Specifically, FTA is ushering in a new era for transit safety, and it is committed to working with state leaders to strengthen and help fund robust state safety oversight agencies to carry out this vitally important mission. MTI is in a position to support that mission.

MTI's NTSSC research focuses on examining actual events through detailed case studies and quantitative analysis of its unique and expanding computerized database to identify terrorist targeting, tactics, and methods; to distill the lessons; and to identify best practices. Its research is empirical and quantitative where possible. Its findings are intended to be pragmatic and impactful – producing applicable results that can be used by stakeholders to evaluate and sometimes change their practices. MTI's NTSSC is international in outlook, learning lessons from worldwide experience, and it makes its

research readily available to users through reports, summit meetings, briefings, training programs, and outreach materials.

The Center's Director and Deputy Director have made several presentations to state and national transportation leaders and policy makers this year, including to the American Society for Public Administration, the Department of Homeland Security (DHS), the Transportation Hazards and Security Summit, and at Transportation Research Board meetings.

Mr. Jenkins has briefed the House Homeland Security Committee, the staffs of the House and Senate Homeland Security Committees, the House Armed Services Committee, the Canadian Senate, the Senate Homeland Security and Governmental Affairs Committee, the NATO ambassadors, and many more. He also has met with numerous other government officials regarding transportation security, delivered presentations at many leading transportation-focused conferences, and is a security adviser to several heads of state around the globe.

Dr. Frances Edwards, NTSSC Deputy Director, and Research Associate Dan Goodrich are currently researching seismic early warning systems in Japan and California, with a focus on the successful application to the JR East high-speed rail system during the March 2011 triple disaster in Japan. They represent MTI on the university's Cyber Security Committee, where they are helping to develop curriculum for a graduate level certificate program. Dr. Edwards is also a member of the Transportation Research Board Critical Infrastructure Protection Committee, and Mr. Goodrich is the alternate member. She is also a member of the editorial board for the Journal of Transportation Security, and a peer reviewer for a number of professional journals, including the Natural Hazards Review of the American Public Works Association.

Dr. Edwards is a member of the Transportation Research Board Critical Infrastructure Protection Committee ABE 40 and research project NCHRP 20-05/Topic44-12 oversight committee.

### MTI's National Transportation Finance Center (NTFC)

Director Asha Agrawal, PhD

Transportation finance plays a significant role in transportation policy-making. Therefore, at the direction of the Board of Trustees, MTI established the NTFC in 2008. The objectives are to conduct and present surface transportation finance research to policy makers. The NTFC also educates decision makers, planners, and the public about current transportation finance debates and opportunities. MTI is especially interested in "smart" finance options, or ways to generate necessary transportation revenues while promoting environmentally sustainable transportation systems, congestion management, and social equity.

In the past year, MTI has published one new finance report. In addition, the Center's researchers have made six presentations of MTI finance studies. Dr. Agrawal presented her MTI-sponsored

finance research at five events (in one case, co-presenting with Hilary Nixon, PhD), and Research Associate Scott Anderson, PhD, also presented his work on rail public-private partnerships.

In June, MTI's NTFC hosted a public forum, the Norman Mineta National Transportation Policy Summit, co-sponsored by the Commonwealth Club of California in San Francisco. This event began with a keynote address from Deputy Federal Transit Administrator Therese McMillan, and then moved to a panel of nationally prominent speakers: Steve Heminger, Executive Director of the Metropolitan Transportation Commission; Michael Melaniphy, CEO of the American Public Transportation Association; and Dr. Agrawal. Mortimer Downey, retired US Deputy Secretary of Transportation, moderated the panel. This Commonwealth Club event attracted more than 150 attendees and was later broadcast on the Commonwealth Club's National Public Radio affiliates. During the panel discussion, Dr. Agrawal presented the results of five annual MTI NTFC national surveys on what types of taxes or fees voters would support to fund transportation infrastructure, including the results from the latest survey, published earlier that month.

NTFC research and researchers have been featured in industry news media outlets including the *Washington Post*, *Portland Press Herald*, *The Hill*, *Progressive Railroading*, and *Fleet Owner*.

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## **MTI's National High Speed Rail Connectivity Center (NHSRCC)**

**Director Ben Tripousis**

In January 2010, at the direction of the Board of Trustees, MTI established the National High-Speed Rail Connectivity Center funded jointly by US DOT and Caltrans grants. MTI has a long history, beginning in 1998, of studying HSR issues, has published 43 peer-reviewed research reports, and has hosted 12 Information and Technology Transfer national summits and regional forums generally related to this subject. Fourteen of the 47 completed publications directly relate to HSR connectivity, and most of those studies stress the need for seamless connectivity to local transit feeder systems.

NHSRCC Director Tripousis guides a top team of MTI research associates accomplishing state-of-the-art studies on the policy and management aspects of high-speed rail connectivity. The objective is to identify and promote the station-area feeder programs that encourage the development, operation, and maintenance of the national high-speed rail corridors designated by congress and the Secretary of Transportation.

To further advance the study of HSR connectivity, MTI established a High-Speed Rail Management Certificate as part of the graduate education program. Two masters level courses specific to high-speed rail connectivity were added to the 2010-11 academic calendar. The first provides an introduction to high-speed rail, including history, development, design, and related issues. The second presents an overview of high-speed rail operations, including management, finance, security, and

other operational topics. The need for station-area transit connectivity is stressed in both courses.

A large number of graduate students have shown interest in this unique educational track that leads to the professional HSR Management Certificate or a full Master of Science in Transportation Management degree, with emphasis on high-speed rail stressing the need for multimodal connectivity. These and other MTI programs will evolve to meet the workforce needs identified by the North American High-Speed Rail Workforce Needs Assessment conducted by MTI, as requested by the California High-Speed Rail Authority and California State University System (<http://transweb.sjsu.edu/project/1027.html>).

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## **MTI's Education Department**

**Director Peter Haas, PhD**

More than 201 California State University accredited Master of Science in Transportation Management (MSTM) degrees have been granted since 1999, and 21 were conferred in June 2014. Ten professional Certificates in Transportation Management or in Transportation Security Management, requiring completion of 12 core units from the MSTM program, were conferred at the same time. For 2014, more than 189 active students are enrolled in the MTI MSTM and Certificate programs at SJSU. Those students receive instruction up to four nights a week via the 24-site Caltrans statewide videoconference network. In addition, Caltrans and MTI have provided satellite feeds to outside agencies such as Orange County Transit Authority (OCTA), Los Angeles County Metropolitan Transportation Authority (LA Metro), the Transportation Agency for Monterey County (TAMC), and the Contra Costa Transportation Authority (CCTA).

To support this unique instructional capacity, Caltrans installed a state-of-the-art videoconference origination site for MTI, which is periodically upgraded. Students and faculty complement synchronous learning with Canvas, an online courseware application, as well as video streaming of archived classes.

The MSTM and Certificate programs, specifically granted to MTI by the California State University Board of Trustees, are supplemented by the related traditional SJSU undergraduate and graduate programs relating to transportation policy and management in business, engineering, political science, public administration, and urban planning. A significant number of students from those programs pursue transportation careers, and many of the professors provide transportation policy research through MTI. Consequently, MTI provides recruitment and instructional assistance to selected aspects of those traditional programs.

The MTI Alumni Association, including current students as well as prior MSTM and Certificate recipients, sets the vision, values, and goals for the future of the Association annually at a meeting conducted before the annual convocation banquet.



This association assists MTI in tracking graduates, and provides social networking applications to enhance opportunities for peer support and student recruitment.

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## Communications and Information/ Technology Transfer Department

Director Donna Maurillo, MSTM

To promote information/technology transfer, MTI has conducted 122 national summits and regional or statewide forums since 1999. During the past 12 months, MNTRC/MTI Research Associates and staff have testified before legislative committees, given 72 speeches and panel presentations on transportation issues throughout the world, and conducted scores of media interviews related to MNTRC/MTI research.

In addition, MNTRC/MTI newsletter, World in Motion, was published three times in the last 12 months. This newsletter is distributed electronically to nearly 3000 national transportation leaders and other interested parties, and it is posted on the MNTRC and MTI web sites. The Institute continues to embrace social media, with an active presence on Facebook and two sites on LinkedIn – one for MNTRC/MTI supporters, and another for MSTM alumni. MTI also has a Twitter account, @MinetaTrans, and a presence on Pinterest. The Institute continues to engage more sophisticated search engine optimization (SEO) techniques to guide users to the research reports on the

MNTRC/MTI web sites and to continue to attract and educate a new generation of transportation leaders.

The proof of success is in the ever expanding use of the MTI web site. With aggressive outreach, especially the expanded use of social media, the 2014 calendar year saw the website's average monthly numbers increase to 276,554 hits/uses and 116,020 downloaded documents. MNTRC also established a web site in March 2012, [transweb.sjsu.edu/mntrc](http://transweb.sjsu.edu/mntrc), which contains relevant consortium news and research documents.

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## Conclusion

MTI and MNTRC are operating at a level beyond anything previously experienced or expected. That level of vigor will be retained for the remainder of the consortium contract period. The following detailed report shows that each of the MNTRC and MTI strategic performance measures are being exceeded.

The MNTRC/MTI staff enjoys this extraordinary opportunity to identify, teach, and share with the nation the world's best surface transportation policy and management practices. Indeed, the US transportation community, with the help of US DOT's University Transportation Centers' program, will succeed in promoting sustainable transportation while prevailing in the global geo-economic competition of the 21st century.





# PERFORMANCE METRICS

## MNTRC/MTI RESEARCH

Metric	2007-08	2008-09	2009-10	2010-11	7/1/11-12/31/12*	CY 2013	CY 2014
Number of research projects selected for funding	6	16	21	18	35	33	8
Number of reports issued	5	12	35	37	41	25	22
Number of research papers presented	17	33	66	71	80	72	64
Number of students participating in research	28	42	39	40	137	76	43

## MTI MASTER OF SCIENCE IN TRANSPORTATION MANAGEMENT

Metric	FY 2007-08	FY 2008-09	FY 2009-10	FY 2010-11	7/1/11-12/31/12*	CY 2013	CY 2014
Enrollment	44	45	67	63	65	69	78
Graduates	15	19	14	14	17	10	21

## MNTRC/MTI WEB SITES

Metric	FY1998-2006	7/1/11-12/31/12	CY 2013	CY 2014
Average monthly uses	173,985	294,904	382,125	276,554
Average monthly downloads	~5,000	97,502	106,829	116,020

## MNTRC/MTI SUMMITS, FORUMS

Metric	2007-08	2008-09	2009-10	2010-11	7/1/11-12/31/12	CY 2013	CY 2014
Events	4	6	13	8	25	22	23
Attendance	301	353	1,325	1,472	2,477	2,525	2,791

\* Includes MNTRC partner participation. Note that from July 1, 2011 until December 31, 2012, a transition was made from a Fiscal Year to a Calendar Year. Therefore, this period includes 18 months of performance.

# INSTITUTE PERSONNEL



## **Karen Philbrick, PhD**

MNTRC/MTI Executive Director  
[Karen.Philbrick@sjsu.edu](mailto:Karen.Philbrick@sjsu.edu)

Karen Philbrick was appointed executive director of MNTRC and MTI in 2014, after five years as MTI research director, with two years as deputy executive director and research director for both MTI and MNTRC. As research director, she led the three MTI research subcenters, directed more than 200 principal investigators for both agencies, oversaw the competitive selection of 122 research projects, and the production of more than 175 peer-reviewed research reports and journal publications. Dr. Philbrick continues to serve as research director for both agencies.

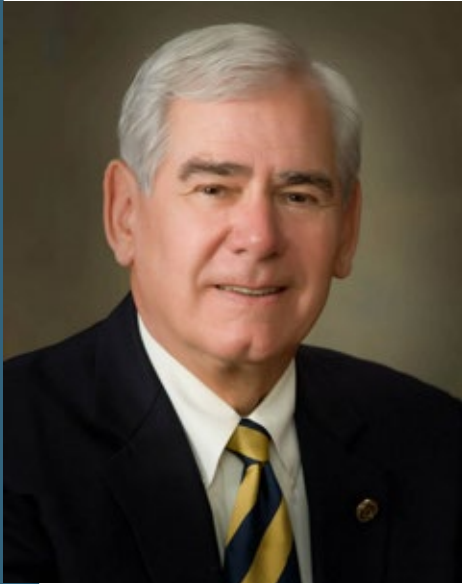
Prior to joining the MTI team, she was assistant director of the National Center for Intermodal Transportation at the University of Denver where she conducted and guided numerous research projects. Her research areas of expertise include transportation fatigue management and operator response to work related trauma. She has interviewed thousands of locomotive engineers and conductors, transit operators, airline pilots, maritime industry representatives, and truck drivers as part of her research. In 2014, Dr. Philbrick was appointed by US Secretary of Transportation Anthony Foxx to the US Department of Transportation Transit Advisory Committee for Safety (TRACS) for a second two-year term and was named chair of the TRACS working group charged with identifying key elements of a fatigue management program for the transit industry.

In 2013, she was elected to the prestigious Executive Committee of the national Council of University Transportation Centers (CUTC) for a three year term. Most recently she received the 2014 CUTC-ARTBA Award for Administrative Leadership.

On an international level, Dr. Philbrick has contributed to the development of educational and training materials for intermodal specialists. Her work has formed a key portion of an international training effort and seminar, Innovations and Challenges in Intermodal Transportation, in the Philippines and Indonesia. She has been a member of the US delegation to the Asian Pacific Economic Cooperation (APEC) Transportation Working Group since 2000.

Dr. Philbrick is frequently requested to speak at national and international conferences and serves her community as an active member of the Rotary Club of San Jose.

She earned a BA from California State University, Fresno, an MA from Columbia University, an EdM from Columbia University, and a PhD from the University of Denver.



## **Rod Diridon, Sr.**

MNTRC/MTI Emeritus Executive Director  
Rod.Diridon@sjsu.edu

Rod Diridon is considered the father of modern transit in California's Silicon Valley. His political career began in 1971 on the Saratoga City Council. He retired, because of term limits, in 1994 after five terms and six times as chair of both the Santa Clara County Board of Supervisors and Transit Agency Board. He is the only person to chair the nine-county, 119-city, 27-transit-district San Francisco Bay Area's three regional governments: Metropolitan Transportation Commission, Bay Area Air Quality Management District, and Association of Bay Area Governments.

Mr. Diridon chaired more than 100 international, national, state, and local activities, most regarding transportation

and the environment. He is chair emeritus and former governors' (Davis and Schwarzenegger) appointee to the California High Speed Rail Authority Board and a founding chair of the American Public Transportation Association's High Speed and Intercity Rail Committee. He chaired the American Public Transit Association in Washington DC in 1994, was vice chair for the Americas of the International Transit Association (UITP) in Brussels for a decade, and continues as a director of both. Mr. Diridon chaired the National Association of Counties' Transit and Railroads Committee for 18 years, advised the Federal Transit Administration, and chaired the Transportation Research Board's Transit Cooperative Research Program.

In 2007-08 Mr. Diridon chaired the national Council of University Transportation Centers Board. He also serves on the corporate advisory board of Wells Fargo Bank and the corporate board of Empire Broadcasting Company. From 1969 to 1976, he served as founder and president of the Decision Research Institute, which developed a "shared survey" research procedure adopted by UNICEF. He frequently provides testimony to Congress and speaks throughout the world on sustainable transportation.

Mr. Diridon earned an accounting BS and an MSBA with a statistics emphasis at San José State University, served two tours as a US Navy officer in Vietnam, has been listed in Who's Who in America since 1974, and was recently cited by International Metro Magazine as one of the 50 who most influenced mass transit in North America in the past century. He received top awards from the American Public Transportation Association, US High Speed Rail Association, National Association of Counties, and others. San Jose's main railroad station was rededicated the San Jose Diridon Station upon his 1994 retirement from elected office because of term limits. In 2014, he was given the Lifetime Achievement Award from the national Council of University Transportation Centers and was inducted into the APTA Hall of Fame.



# MTI DIRECTORS



**Asha Weinstein Agrawal, PhD**  
MTI Director, NTFC  
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Dr. Agrawal is Director of the MTI National Transportation Finance Center (NTFC) at San Jose State University. She is also an Associate Professor and Chair of the Urban and Regional Planning Department at San Jose State University. Dr. Agrawal's PhD in Urban and Regional Planning is from UC Berkeley.



**Frances Edwards, PhD**  
MTI Deputy Director, NTSSC  
kc6thm@yahoo.com

Dr. Edwards is Deputy Director of MTI's National Transportation Security Center of Excellence (NTSCOE), and is a research associate. She is also a professor and director of the Master of Public Administration School at San Jose State University.



**Ben Tripousis**  
MTI Director, HSRCC  
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Mr. Tripousis is Director of MTI's High-Speed Rail Connectivity Center (HSRCC) and an instructor for MTI's Master of Science in Transportation Management program. He contributes more than 25 years of industry experience and is the Northern Regional Director for the California High-Speed Rail Authority.



**Peter Haas, PhD**  
MNTRC/MTI Director of Education  
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A Fulbright Scholar and member of the faculty in MTI's Graduate Transportation Management Program (GTMP) since 1999, Dr. Haas was appointed Education Director in 2001. He manages all facets of the Master of Science in Transportation Management and related certificates programs.



**Brian Michael Jenkins**  
MTI Director, NTSSC  
bmjenk@gmail.com

Mr. Jenkins was appointed in 1996 to lead MTI's National Transportation Safety and Security Center, which was elevated to a Center of Excellence (NTSCOE) by DHS in 2008. Mr. Jenkins and NTSSC Deputy Director Frances Edwards, PhD, continue to guide NTSSC research on all aspects of safety and security, and on the planning for and recovery from major emergencies. As a leading authority on terrorism and sophisticated crime, he is a policy adviser to government agencies, international organizations and multinational corporations and frequently provides legislative testimony.



**Donna Maurillo, MSTM**  
MNTRC/MTI Director of Communications and Technology Transfer  
Donna.Maurillo@sjsu.edu

Ms. Maurillo joined MTI in 2007, managing information/technology transfer (ITT), such as summits/symposia, forums, and public meetings. She also directs all communications such as the MTI web site, social media, annual report, media relations, and other public outreach, and she manages Memoranda of Cooperation (MOC). She earned her California State University Master of Science in Transportation Management via MTI. Her undergraduate degree is from the University of California.

# MNTRC PARTNER DIRECTORS

The Mineta National Transit Research Consortium (MNTRC) includes nine partner university transportation centers, including the Mineta Transportation Institute, and their respective directors. Those eight other directors are listed here in alphabetical order.

**Leo Hanifin, ME, DE**

Professor of Mechanical Engineering  
College of Engineering and Science  
University of Detroit Mercy  
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Dr. Hanifin is a professor of mechanical engineering at the University of Detroit Mercy and the Chrysler Professor of Engineering. Throughout his career, he has been active in development of university, industry and government partnerships, including the Michigan Ohio University Transportation Center. Before joining UDM in 1991, Dr. Hanifin directed the launch and growth of the manufacturing center at Rensselaer Polytechnic Institute into a 300-person collaborative research/technology center. At the University of Detroit, he earned his BA in mechanical engineering, design option; a Master of Engineering in solid mechanics; and a doctorate in engineering. Dr. Hanifin was a Hughes Fellow at the University of California, Los Angeles. Before joining academia, he held positions in the computer, aerospace and automotive industries. Dr. Hanifin is currently a member of the Detroit Regional Transit Authority's Citizens Advisory Committee and the M-1 Rail Board of Directors.

**David Klinikowski, BSME**

Director, Bus Research and Testing Center  
Pennsylvania Transportation Institute  
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David Klinikowski directs the activities at Penn State's Bus Research and Testing Center. This federally mandated \$3 million/year program, funded by the Federal Transit Administration and industry, performs comprehensive vehicle testing on transit buses ranging from full-size heavy-duty buses, to modified mini-vans. He also managed the development of the Bus Testing Facility for the Federal Transit Administration, and he developed several test procedures, instruments, and mechanical designs for testing vehicles and roadway materials. He earned his BS in mechanical engineering from The Pennsylvania State University, and he co-authored several research reports.

**Donald F. Hayes, PhD, PE, DEE**

Chair, Department of Civil and Environmental Engineering  
Howard Hughes College of Engineering  
University of Nevada, Las Vegas  
Donald.Hayes@unlv.edu

Before arriving at UNLV, Dr. Hayes was director, Institute for Coastal Ecology and Engineering, and the M. Eloi Girard/BORSF Professor of Civil Engineering at the University of Louisiana at Lafayette; associate professor, Department of Civil & Environmental Engineering, at the University of Utah, Salt Lake City; and assistant professor, Department of Civil Engineering, at the University of Nebraska, Lincoln. Previous to that, he held several academic and professional engineering positions. He earned his BS in civil engineering (with honors) from Mississippi State University; his MS in civil engineering at Mississippi State University; and his PhD in civil engineering from Colorado State University. Dr. Hayes has won several academic and professional awards, and he is widely published.

**Ashok Kumar, PhD, PE, BCEE**

Professor and Chair  
Department of Civil Engineering  
University of Toledo  
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In addition to his current position in the Department of Civil Engineering at the University of Toledo, Dr. Kumar has taught several upper division and graduate courses, including Introduction to Air Pollution, Indoor Air Quality, Industrial Ventilation, Dispersion and Risk Modeling. He also has edited professional publications, served on several professional boards, reviewed journals, and more. Dr. Kumar's work on air pollutants inside and outside transit vehicles is widely published. He earned his BS in mechanical engineering (with honors) from Aligarh University, India; his Master of Applied Science in mechanical engineering from the University of Ottawa; and his PhD in environmental fluid mechanics from the University of Waterloo, Ontario.

**Hokey Min, PhD**

James R. Good Chair in Global Supply Chain Strategy,  
Department of Management,  
College of Business Administration  
Bowling Green State University, Ohio  
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Dr. Hokey Min has held full and assistant professorships at the University of Louisville, Kentucky; Auburn University, Alabama; Northeastern University, Massachusetts; and University of New Orleans, Louisiana. His transit-relevant research includes several reports on para-transit service, routes, carriers, and other topics. He has won numerous research grants to investigate several issues such as developing an intelligent decision support system for routing long-haul common carriers and their drivers under the most recent hours of service regulations; conducting customer satisfaction surveys to improve the Toledo Area Regional Transit Authority's paratransit services; and more. He earned his MBA in production management from Yonsei University, Korea; his MSBA in operations management/economics from the University of South Carolina; and his PhD in management sciences/logistics from The Ohio State University, Columbus.

**Errol C. Noel, PhD, PE, FASCE, FITE**

Director  
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In addition to directing the Howard University Transportation Research Center, Dr. Noel served, for ten years, as chair of the university's Department of Civil and Environmental Engineering where he teaches graduate and undergraduate courses in transportation engineering. He has more than 35 years of practical experience in transportation engineering, transportation research, and has an outstanding record of published articles. He served as manager and principal investigator on numerous projects on highway traffic operation and safety, highway engineering, simulation and operation bus transit, pavement ride quality, and safety data analysis. Recently, his focus has been on applied research on urban bus transit schedule reliability. Dr. Noel earned his B.S. in civil engineering and his M.S. in transportation engineering at Howard University, and his Ph.D. in transportation engineering at the University of Maryland, College Park.

**Robert B. Noland, PhD**

Director  
Voorhees Transportation Center  
Rutgers University  
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Dr. Robert Noland earned his BA in chemistry at the University of California, and his MSc in energy management and policy, and his PhD in energy management and environmental policy at the University of Pennsylvania. Since then, he has been a post-graduate researcher at the University of California, Irvine; a policy analyst with the US Environmental Protection Agency; a lecturer and a reader in transportation and environmental policy at Imperial College, London; and professor at the Edward J. Bloustein School of Planning and Public Policy, Rutgers University. Dr. Noland's research has been published in a large variety of academic journals, and he sits on the editorial board of five journals. He also chairs the Strategic Task Force on Climate Change and Energy of the Transportation Research Board, among many other activities.

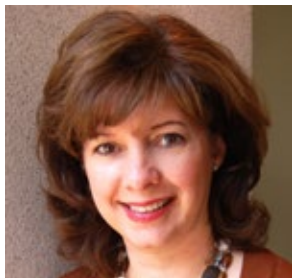
**Charles Robert Standridge, PhD**

Professor and Associate Dean  
Seymour and Esther Padnos College  
of Engineering and Computing  
(PCEC)  
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Standric@gvsu.edu

Dr. Charles Standridge earned his BS in applied mathematics and computer science at Washington University, St. Louis; and his MS and PhD in industrial engineering at Purdue University. Before arriving at Grand Valley University, he was an associate professor of industrial engineering at the FAMU/FSU College of Engineering in Tallahassee Florida and at the University of Iowa, and a consultant in private industry. He consulted on more than 20 projects, received research funding for nine projects, and has been published in nearly 60 journals and reports. His awards include Industrial Design Professor of the Year, and a Book of the Year. Dr. Standridge is active in scientific and professional societies. At Grand Valley, he is also responsible for advising and K-12 outreach within PCEC, chair of the Occupational Safety and Health Department, and a technical lead on the Lake Michigan Wind Assessment Project.



# SUPPORT STAFF

**Jill Carter**

MNTRC/MTI Executive  
Administrative Assistant  
Jill.Carter@sjsu.edu

Ms. Carter applies her extensive business skills to MTI office management, where she also oversees the student staff and financial records. Ms. Carter also provides logistical support to the Directors. Previously, Ms. Carter provided bookkeeping and administrative support in a local business, the Campbell School District, and Bank of America. Ms. Carter's collegiate studies were at San Jose State University.

**Frances Cherman**

MNTRC/MTI Webmaster  
(part time)  
Frances.Cherman@sjsu.edu

Ms. Cherman joined MTI in 2010, taking responsibility for the Institute's web site performance. She has been a longtime business consultant specializing in copywriting for direct marketing, sales collateral, and web site content. Her clients have included some of Silicon Valley's most successful companies, such as Apple, Intuit, Symantec, Netflix, HP, Wells Fargo, IDG Worldwide, Autodesk, and many others. Ms. Cherman graduated cum laude with a BA in English from California State University, Northridge.

**Viviann Ferea**

MTI Education Program Assistant  
Viviann.Ferea@sjsu.edu

Ms. Ferea was appointed to the position of Education Program Assistant in 2000. She is the primary contact for the Graduate Transportation Management Program's marketing and administration. She holds many responsibilities, including recruitment and administration for the certificate and master's programs, maintenance and revision of the MTI web site's Education section, and planning and scheduling courses. Ms. Ferea received her BS in business marketing from the University of California Davis. Her studies in public relations and her experience in media sales help her promote the program's continued growth and success.

**Joseph Mercado**

MTI Research Support  
Coordinator (part time)  
Joseph.Mercado@sjsu.edu

Starting at MTI as a Student Assistant, Mr. Mercado developed rapidly in the position and was promoted this year into management. He prepares research reports for design and publication, processes requisitions, and provides other logistical support. Mr. Mercado continues as a student majoring in psychology with plans to earn a Master's Degree in industrial/organizational psychology.

**Donghoh Han**

Graphic Designer (part time)  
Donghoh.Han@sjsu.edu

Mr. Han is working on his degree in graphic design at San Jose State University while providing design services for MTI. He prepares publications for print and online posting, and he edits photography and video.

**Claire Horner**

Graphic Designer (part time)  
Claire.Horner@sjsu.edu

Ms. Horner joined MTI in March 2015, she is working on her degree in design studies at San Jose State University while providing design services for MTI. Ms. Horner designed this annual report.

# MANAGEMENT

Institute activities are overseen by a prestigious, hands-on board (see inside back cover) that meets twice a year to provide policy guidance. MNTRC/MTI's Board of Trustees winter meeting was hosted on January 10, 2014 at the Amtrak offices in Washington DC. That evening, two MTI graduate students were honored by CUTC at the awards banquet, which the trustees attended. The Board's summer meeting was held on June 21, 2014 at the Santa Clara Valley Transportation Authority (VTA) headquarters in San Jose CA. That evening featured the 22nd Annual MTI Board of Trustees Scholarship Awards Banquet and the graduation of this year's Master of Science in Transportation Management

(MSTM) class. The 2014 commencement address was given by Acting U.S. Federal Transit Administrator Therese McMillan. Commencement addresses during the recent past were delivered by US Secretary of Transportation (ret.) Norman Mineta, former US Assistant Secretary of Transportation Polly Trottenberg, US Deputy Secretary of Transportation (ret.) Mortimer Downey, Caltrans Director Malcolm Dougherty, and others. The banquet raises scholarship funds for MTI's MSTM and professional certificate students.

## FACILITIES

Mineta Transportation Institute facilities are provided by and are part of the San Jose State University Research Foundation, which supports San José State University (SJSU), the oldest and among the largest of the 23 California State University campuses. The downtown San Jose campus is at the heart of Silicon Valley. The three sub-center directors maintain offices outside of the MTI facilities. The other eight MNTRC partner centers maintain facilities at their respective universities.

## FINANCIAL CONTROLS

MNTRC/MTI uses a QuickBooks accounting system to provide real-time, project-based budget and expenditure information. MTI relies on this system to track expenditures in detail and to supplement the grant-based monthly accounting statements of the SJSU Research Foundation, which provides state and federal fiscal reports and annual audits.

## PARTNERSHIPS

### **Jointly Sponsored Symposia, Forums, and Projects**

During the past several years, MTI (and more recently, MNTRC) has co-sponsored or is in the process of co-sponsoring projects with organizations including AAR, AASHTO, APTA, ARTBA, Bay Area Rapid Transit District, California Business Roundtable, California State Automobile Association, Caltrans, City of San Jose CA, Commonwealth Club of California, DHS/TSA, FHWA, FTA, FRA, INIST, San Francisco Bay Area MTC, Silicon Valley Leadership Group, Transit Cooperative Research Program of TRB, Transportation Trades Department of AFL/CIO, and others. These partnerships generate attendance and/or financial support for MNTRC/MTI programs, and deliver substantial outreach and media attention for MNTRC, MTI and the UTCs. More importantly, these events allow the transfer of research results to public users.

### **International Involvement**

With the encouragement of the Secretary of the US DOT and the FTA Administrator, MTI has consummated formal Memoranda of Cooperation with the China Academy of Transportation Sciences, the Fundacion Caminos de Hierro in Cordoba, Spain, and the Maharashtra (Mumbai) Regional Transit Institute. Agreements are in negotiation with the Swedish Royal Academy of Sciences and Pisa University in Italy. Each relationship promotes the sharing of best practices. In 2014, MTI hosted Shintaro Terrabe, PhD, from the University of Tokyo. He completed a one-year sabbatical to study US high-speed rail planning.

# RESEARCH



## Research Program Overview and Goals

MTI actively recruits academic involvement from many departments at San José State University (SJSU). However, the program is different from most other transportation centers because research teams may also include faculty from other colleges and universities, as well as private sector consultants. Individuals from public and private organizations outside academia can bring a practical, “real world” perspective to MTI research and to the classroom when research is shared with students. Each team includes at least one SJSU academic member and one SJSU student, and projects are conducted in an academic format, including rigorous peer review of work prior to publication.

MTI requires that all research team members be certified Research Associates (RA) or Consulting Associates (CA). Certification requires an application with references, a résumé, and a sample of published research. The Research Associates Policy Oversight Committee (RAPOC) reviews the applications and recommends certification where appropriate. Certification is approved by the executive director and must be renewed every five years.

MTI also offers a Seed Grant program for up to \$5,000. The program’s dual purpose is to interest new faculty in the MTI research program and to facilitate the development of a first full-fledged research proposal. Seed grants require a white paper summarizing the research and findings, and in most cases the work results in a proposal for funded research in the primary research program.

## Transfer of Research Information

All research is professionally published following successful peer review, author revisions, and editing. MTI has developed a number of other approaches to information transfer, including sponsoring symposia, funding post-research travel for researchers to address professional conferences, providing financial incentives for publishing in peer-reviewed journals, and presenting research summaries for distribution to practitioners.

(See additional details in the Information Technology Transfer section of this report.)





# PROJECTS COMPLETED IN 2014

## ***Exercise Handbook: What Transportation Security and Emergency Preparedness Leaders Need to Know to Improve Emergency Preparedness***

Project 1103

Principal Investigator: Frances Edwards, PhD

The U.S. Department of Homeland Security (DHS) has provided extensive general guidance on developing training and exercise programs for public entities, but little had been done to focus that material on the transportation sector. Specific guidance should be given for developing exercises focused on their agencies' operational work, in addition to the Logistics Section functions that are usually the focus of transportation sector entities in multi-agency, multi-jurisdiction exercises. The first section of this report provides information on federal training and exercise requirements for transportation sector entities. It summarizes the changes to emergency management programs and requirements that grew out of the Presidential Policy Directive-8 (PPD-8) issuance in early 2011, and the challenges of adult training. The second section is a Homeland Security Exercise and Evaluation Program (HSEEP)-compliant practical handbook using the project management approach that guides transportation sector staff in the creation, development, implementation, and wrap-up of federally mandated exercises. It includes scenarios and implementation guidance based on the actual experiences and work of the transportation sector. This report has been an exceedingly popular download from the MTI web site.

## ***Perceptions of Bicycle-Friendly Policy Impacts on Accessibility to Transit Services: The First and Last Mile Bridge***

Project 1104

Principal Investigator: Bradley Flamm, PhD

Public transit planners and researchers have given close attention to coordination of bicycle and transit modes in recent years, as transit agencies around the world have helped facilitate bicycle-transit integration. Many planners presume that these efforts enlarge the catchment area for transit, but geographic changes in the size of catchment areas have not been effectively documented. This research project assessed the distances travelled on bicycle by cycle-transit users (CTUs), both those who use bicycles as a means of access to transit stops and stations and those who bicycle to and travel on transit with their bicycles. A mixed-methods approach was employed, using a literature review, a survey of cyclist-transit users in Philadelphia and San Francisco, and telephone interviews with a subset of survey respondents. CTUs provided responses in the two cities, allowing researchers to define

their characteristics and behaviors in detail. The results highlight two intriguing conclusions: that transit catchment areas can be much larger for cycle-transit users than for traditional transit users who access transit buses and rail on foot, and that the concept of a cycle-transit catchment area is quite complex because of the variety of travel opportunities that cycle-transit coordination policies present. CTUs take advantage of larger catchment areas to reduce their travel costs, and they use those catchment areas in curious, less predictable, and more varied ways.

## ***Net Effects of Gasoline Price Changes on Transit Ridership in U.S. Urban Areas***

Project 1106

Principal Investigator: Hiroyuki Iseki, PhD

This study uses panel data of transit ridership and gasoline prices for ten selected US urbanized areas from 2002 to 2011. It analyzes the effect of gasoline prices on ridership of the four main transit modes—bus, light rail, heavy rail, and commuter rail—as well as their aggregate ridership. Improving upon past studies on the subject, this study accounts for endogeneity between the supply of services and ridership, and it controls for a comprehensive list of factors that may influence transit ridership. This study also examines short- and long-term effects and non-constant effects at different gasoline prices.

The analysis found varying effects, depending on transit modes and other conditions. Strong evidence was found for positive short-term effects only for bus and the aggregate. The long-term effects of gasoline prices, on the other hand, were significant for all modes and indicated a total ridership increase. The effects at the higher gasoline price level of over \$3 per gallon were found to be more substantial. Light rail shows an even higher rate of increase of 9.34% for gasoline prices over \$4. In addition, a positive threshold boost effect at the \$3 mark of gasoline prices was found for commuter and heavy rails, resulting in a substantially higher rate of ridership increase.

The results of this study suggest that transit agencies should prepare for a potential increase in ridership during peak periods that can be generated by substantial gasoline price increases over \$3 per gallon for bus and commuter rail modes, and over \$4 per gallon for light rail. This can help them accommodate higher transit travel needs through pricing strategies, general financing, capacity management, and operations planning.

## **Active Travel Co-Benefits of Travel Demand Management Policies that Reduce Greenhouse Gas Emissions**

Project 1109

Principal Investigator: Caroline Rodier, PhD

Increasing evidence shows that improved health may be a significant co-benefit of land use plans and transport policies that increase active transport (or walking and biking for purposeful travel) and reduce greenhouse gas emissions (GHGs) from vehicle miles traveled (VMT). A greater understanding of these benefits may broaden the constituency for regional planning that supports local and national GHG reduction goals. In this study, California's activity-based travel demand model (ABM) is applied to (1) demonstrate how this new generation of travel models can produce the active travel data (age and sex distributions) required by comparative risk assessment models to estimate health outcomes for alternative land use and transport plans and to (2) identify the magnitude of change in active travel that may be possible from land use, transit, and vehicle pricing policies for California and its five major regions for a 2035 time horizon.

The study results suggest that distance-based vehicle pricing may increase walking by about 10% and biking by about 17%. Concurrently, GHG from VMT may be reduced by about 16%. Transit expansion and supportive development patterns may increase active travel by about 2% to 3% for walk and bike modes while also reducing VMT by about 4% on average. The combination of all three policies may increase walking time by about 13% and biking by about 19%, and reduce VMT by about 19%.

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## **Public Bikesharing in North America during a Period of Rapid Expansion: Understanding Business Models, Industry Trends, and User Impacts**

Project 1131

Principal Investigator: Susan Shaheen, PhD

Public bikesharing has recently emerged in major cities around the world. Information technology (IT)-based bikesharing systems typically position bicycles throughout an urban environment for immediate access. This study evaluates public bikesharing in North America, reviewing the change in travel behavior by members of different programs in the context of their business models and operational environment. This Phase II research builds on data collected during Phase I research conducted in 2012. (See the Shaheen et al., 2012 report *Public Bikesharing in North America: Early Operator and User Understanding*.)

For this study, an additional 23 interviews were conducted with IT-based bikesharing organizations in the US, Canada, and Mexico. In addition to expert interviews, the authors conducted two kinds of surveys with bikesharing users, including

an online member survey. The second survey was an on-street survey, designed for anyone, including casual users. The member survey was deployed in Montreal, Toronto, Salt Lake City, Minneapolis-Saint Paul, and Mexico City. The on-street survey was implemented in Boston, Salt Lake City, and San Antonio.

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## **Detroit Regional Transit Study: A Study of Factors that Enable and Inhibit Effective Regional Transit**

Project 1136

Principal Investigator: Leo Hanifin, PhD

An interdisciplinary team at the University of Detroit Mercy (UDM) conducted a comprehensive study of factors enabling or inhibiting development of effective regional transit. Focusing on Metro Detroit and four peer regions—Atlanta, Cleveland, Denver, and St. Louis—investigators examined six key variables in transit success: 1) leadership and politics, 2) governance and law, 3) finance, 4) transit-oriented development (TOD), 5) equity and access, and 6) media and public opinion. These elements were studied in the context of Detroit transit history with respect to lessons learned, recent developments in Metro Detroit, and comparisons and recommendations.

The team employed a nontraditional research methodology driven by the narrative of firsthand experience. They conducted in-depth interviews with more than 60 leaders in transit advocacy, development, and operation from five regions across the country, seeking the type of insight acquired almost exclusively through personal experience.

The team then curated, organized, and assembled this data into cogent analyses to form the foundation of this report, which provides an overview and summaries of key findings in all six focus areas. Six separate reports explore each area in greater depth.

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## **Remanufacturing, Repurposing, and Recycling of Post-Vehicle-Application Lithium-Ion Batteries**

Project 1137

Principal Investigator: Charles Standridge, PhD

Lithium-ion (Li-Ion) batteries are an efficient energy storage mechanism. Their use in vehicles is growing to support electrification to increase average mileage and decrease greenhouse gas emissions. Post-vehicle application for Li-Ion batteries includes remanufacturing, repurposing, and recycling. Proprietary commercial processes for remanufacturing for reuse in vehicles require safe battery testing with a newly developed workbench. Repurposing is demonstrated, with a focus on stationary energy storage and the development of battery management systems. Recycling is shown to be an effective way to recover the battery component materials using manual disassembly and acid leaching at relatively low temperatures and in short time periods. A cost benefit-analysis shows that

remanufacturing is profitable. Repurposing is profitable if the development cost is no more than \$83/kWh to \$114/kWh, depending on research and development expenses. Recycling is not profitable in isolation. The cost of recycling must be borne by remanufacturing and repurposing. A forecasting model shows that the number of post-vehicle-application Li-Ion batteries will be sufficient to support remanufacturing, repurposing, and recycling.

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### **Understanding & Modeling Bus Transit Driver Availability**

Project 1140

Principal Investigator: Kaan Ozbay, PhD

Bus transit agencies are required to hire extraboard (i.e., back-up) operators to account for unexpected absences. Incorrect sizing of extra driver workforce is problematic because overestimating the number has financial implications, while underestimating can disrupt service. A review of relevant literature showed that current models for extraboard management are generally agency-specific and that extra driver assignments are usually based on decision makers' experience rather than on a mathematically sound modeling process.

In this study, two mathematical programming models with probabilistic constraints were developed to determine daily optimal extraboard size while incorporating reliability and risk measures in the decision making process. Two distinct approaches were proposed. The first used pLEP's as the solution methodology, and the second approach used second order stochastic dominance constraints. Individual performance of both models under different cost assumptions was evaluated, and the actual historical assignments were compared with optimal solutions obtained from these models. The results revealed possible improvements of extra driver size for one of the three garages studied. These models can be used in a computerized environment to help agencies make efficient decisions. It is also illustrated using a simulation procedure developed for comparison with observed driver assignment data.

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### **Modeling Taxi Demand with GPS Data from Taxis and Transit**

Project 1141

Principal Investigator: Eric J. Gonzales, PhD

Identifying factors that influence taxi demand is important for understanding where and when people use taxis and how taxi demand relates to transit availability and quality of service. This study used a large set of global positioning system (GPS) data from taxis in New York City, along with demographic, socioeconomic, and employment data, to identify factors that drive taxi demand. A technique was developed to measure and map transit accessibility based on the time required to access a transit vehicle from a specific location

and time of day. Taxi data were categorized by pickups and drop-offs, and a hybrid cross-classification and regression model was developed to estimate the taxi demand across space and time. The study identified transit accessibility, population, age, education, income, and the number of jobs in each census tract as the factors with strongest explanatory power for predicting taxi demand. The study also includes a cost comparison for travel by taxi and transit for specific trips between Penn Station and each of the three major New York area airports. The model and analysis results show how the number of passengers traveling together in a group and the value they place on their time affect the likelihood of choosing taxi or transit for an airport access trip. A number of findings are specific to New York City. However, the methods developed and demonstrated in this report can be applied generally to cities where similar GPS data from taxis and schedule information from transit are available.

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### **Measuring the Benefits of Transit-Oriented Development**

Project 1142

Principal Investigator: Robert B. Noland, PhD

Transit-oriented development (TOD) in New Jersey is evaluated using a variety of methods and outcome measures. Data were gathered from respondents residing around eight train stations in New Jersey and up to two miles away from those stations. Additional data were gathered from four focus groups of those living near various train stations with some development, and interviews with stakeholders engaged with the land development process. Three areas were also selected for a detailed case study analysis. Qualitative analysis focused on perceptions of TOD benefits and any shortcomings. The report featured an analysis of travel behavior, including frequency of walking, driving and using transit; potential health benefits associated with living in proximity to a train station; social capital or civic engagement in areas proximate to the train station; traffic safety associated with proximity to the train station and other built environmental measures; residential property valuation associated with train station access and TOD amenities; benefits to users of rail transit for commute access to New York City and other destinations; and, an analysis of regional impacts using a regional travel demand model to examine changes in train use and highway congestion. Most results showed beneficial effects of TOD and development near train stations.



## ***Fatigue Evaluation of the Increased Weight Limit on Transit Railway Bridges***

Project 1143

Principal Investigator: Hani Nassif, PhD

The recent increase of freight railcar weight limits from 263,000 lbs. to 286,000 lbs. raises concerns for the safety of bridges on transit passenger rail systems because they were not designed for this weight increase. Thus, it is necessary to assess the impact of the weight increase on those bridges prior to using passenger lines for freight transportation. This study introduces an accurate approach to ascertaining the remaining fatigue life of steel railway bridges. The analysis results indicate that heavy freight cars have a significant effect on critical locations near bridge supports. Heavier rail equipment will have a much more significant effect on shorter spans (less than 60 ft.) than on long spans. This will allow transit operators or agencies to prioritize and schedule repairs and rehabilitation. An increase of 1,000 freight trains per year will shorten the remaining fatigue life by approximately two years. The relationship between annual freight train frequency and remaining fatigue life could help transit operators or agencies balance the tradeoff between economic benefit and bridge rehabilitation cost.

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## ***Exploring Transportation, Employment, Housing, and Location Issues for New Jersey Veterans with Disability***

Project 1144

Principal Investigators: Stephanie DiPetrillo and Andrea Lubin

Working-age veterans with disability face myriad responsibilities when they rejoin civilian life. They must secure housing and employment while coping with health care and one or more disabilities. Access to transportation – particularly public transportation and paratransit options – is a lynchpin that impacts their ability to successfully meet these diverse needs. Too often, transportation issues are not adequately considered in veteran reintegration planning. More than 21 million veterans live in the US, and one-quarter describe themselves as living with a disability, according to the American Community Survey. New evidence suggests that these figures may underrepresent the disabled population, particularly veterans of recent military conflicts.

This report explores the intersection among transportation, housing, and employment to successful veteran reintegration. Interviews were convened with diverse veteran stakeholders from the US and New Jersey, as well as from focus group work with disabled veterans. The authors conclude that pursuit of transit-oriented development (TOD) for this population in suburban and urban locales is an excellent model to consider for further replication throughout the US as one means to help address veteran housing, employment, and other reintegration demands.

## ***Transit Access and the Agglomeration of New Firms: A Case Study of Portland and Dallas***

Project 1145

Principal Investigator: Robert B. Noland, PhD

The objective of this paper is to examine whether new firms are more likely to form near rail transit stations. Two relatively new light-rail systems—one in Portland, Oregon, and the other in Dallas, Texas—form the basis of the analysis. A geocoded, time-series database of firm births from 1991 through 2008 is analyzed using all firm births, firm births of various sizes, and firm births of specific industry sectors. A random effects, negative binomial model is used to examine associations between proximity to rail stations and other spatially defined variables.

Results show that newly formed firms tend to cluster around stations in the Portland region but not in the Dallas region. The difference remains true for various firm sizes and industrial sectors. In all cases, a much stronger association exists between transit proximity and new firm birth in the Portland region compared with the Dallas-Ft. Worth region. In both regions, births of larger firms tend to be associated with greater proximity to transit stations, perhaps reflecting the greater agglomeration benefits that they receive. Different planning and zoning criteria in Portland versus those in Dallas may explain the relative success of Portland in achieving clusters of new firms near transit.

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## ***Combustion Chemistry of Biodiesel for the Use in Urban Transport Buses: Experiment and Modeling***

Project 1146

Principal Investigator: Ashok Kumar, PhD

Biofuels, such as biodiesel, are a possible alternative to conventional fuels due to their fuel source sustainability and reduced environmental impact. Before they can be used, however, it is essential to understand their physical properties, combustion chemistry, and exhaust characterization due to a number of issues associated with fuel properties.

Physical properties were measured on three different feedstocks, while ultra-low sulfur diesel (ULSD) was used as base fuel. For the study of combustion chemistry and characterization of the exhaust, various tests were conducted for particulate matter (PM) emission samples collected from buses and from the laboratory setup. In the field, emission samples were collected for hot and cold idle conditions.

Gravimetric analysis showed a decrease of 17% in PM emissions from the transit buses running on B20 compared with ULSD (B0). Eleven elements were detected in the exhaust samples collected from the laboratory experiments and 15 elements from the field experiments. The results also indicated that using biodiesel could effectively reduce EC and increase the portion of OC/EC emissions. Carbon emission was also investigated, and the results confirmed that lower emissions

of CO and CO<sub>2</sub> are related to lower ratios of carbon to oxygen in biodiesel fuels compared with ULSD.

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### ***Enhancing Transit Service in Rural Areas and Native American Tribal Communities: Potential Mechanisms to Improve Funding and Service***

Project 1147

Principal Investigator: Mahomed Kaseko, PhD

Primary funding for rural transit comes from federal and state departments of transportation (DOTs). However, through numerous surveys, rural transit providers have cited financial constraints as major limitations to providing adequate desired transit services. This means that traditional DOT funds are not sufficient for funding rural transit. Consequently, transit planners and providers must pursue additional funding beyond traditional programs before they can meet and satisfy the transit demand.

To that end, the primary objective of this study was to identify and document current non-DOT (i.e., non-traditional) funding programs that rural transit providers and planners could pursue and acquire to close that funding gap and enable them to meet the transit demand.

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### ***Developing Seamless Connections in the Urban Transit Network: A Look toward High Speed Rail Interconnectivity***

Project 1148

Principal Investigator: Hualiang (Harry) Teng, PhD

The objective was to quantify multimodal connectivity of high-speed rail (HSR) stations and its impact on ridership in four countries with HSR, setting the basis for future rail interconnectivity. In this study, multimodal connectivity is measured by the number of transportation modes connected to HSR stations, the number of installed arrival and departure facilities for each mode, the transfer time from connecting modes to boarding platforms at HSR stations, and the arrival time intervals of public transit modes. Data were collected from HSR systems of France, Spain, Japan, and China. Various characteristics of the connecting modes were observed and compared. The relationship between ridership and the characteristics of multimodal connectivity was identified using regression models developed in this study.

On the whole, bus, subway, and regional railroad service influenced ridership significantly. For instance, the more bus services connected to the station, the higher the ridership. Also, subway, light rail, and traditional rail are high-capacity modes. Their connection to HSR stations always implies high ridership for high-speed rail. The number of facilities also significantly impacts HSR ridership. For instance, the more bus and subway stops, and the more bicycle parking and taxi stands, the higher the ridership. Transfer time also has a

significant influence.

These findings have important implications for the proposed California and Nevada HSR stations. More issues on transfer time at HSR stations in the metropolitan areas in California are elaborated upon. Also discussed are the unique needs of visitors to Las Vegas and their implications for HSR design.

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### ***Transportation Futures: Policy Scenarios for Achieving Greenhouse Gas Reduction Targets***

Project 1149

Principal Investigator: Caroline J. Rodier, PhD

It is well established that greenhouse gas (GHG) emissions must be reduced by 50% to 80% by 2050 to limit global temperature increase to 2°C. Achieving reductions of this magnitude in the transportation sector requires many policies and technology options. The research presented here analyzes three scenarios: changes in the perceived price of travel, land-use intensification, and increases in transit. Elasticity estimates are derived using an activity-based travel model for California and broadly representative of the US. The VISION model is used to forecast changes in technology and fuel options that are currently forecast to occur in the US, providing a life cycle GHG forecast for the road transportation sector. Results suggest that aggressive policy action is needed, especially pricing policies, but also more on the technology side. In particular, medium- and heavy-duty vehicles need additional fuel or technology-based GHG reductions.

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### ***The Purpose, Function, and Performance of Streetcar Transit in the Modern US City: A Multiple-Case-Study Investigation***

Project 1201

Principal Investigator: Jeffrey Brown, PhD

Streetcars now operate in year-round revenue service in about ten US cities, and dozens more cities are building or planning streetcar lines. Streetcars have reappeared in cities for many reasons, including their relatively low cost and smaller urban footprints compared with light rail transit, their believed link to downtown redevelopment, and the active promotion of federal officials, planners, transportation consultants, and other constituencies. Despite their increased popularity as urban transit projects, little research documents how these transit investments function and perform. This research seeks to fill this knowledge gap.

The report examines modern streetcars in Little Rock, Memphis, Portland, Seattle, and Tampa to better understand the purpose of their streetcar development, how the streetcar functions in the local transit system, its ridership and productivity as a transit mode, and how planners, elected officials, and other key local actors assess the overall performance. The primary emphasis of the research is on the streetcar's

transportation role and transit performance, as opposed to its possible redevelopment or quality of life effects. Using a combination of national and agency data on ridership, service, cost, and socioeconomic characteristics of the local setting, plus key informant interviews, the research seeks to derive lessons that will lead to more informed planning and policy decisions in cities already operating or contemplating development of these transit investments.

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### ***Automated Transit Networks (ATN): A Review of the State of the Industry and Prospects for the Future***

Project 1227

Principal Investigator: Burford Furman, PhD

The concept of Automated Transit Networks (ATN) – in which fully automated vehicles on exclusive, grade-separated guideways provide on-demand, primarily non-stop, origin-to-destination service over an area network – has been around since the 1950s. However, only a few systems operate around the world. ATN does not appear “on the radar” of urban planners, transit professionals, or policy makers when it comes to designing solutions for current transit problems in urban areas.

This study explains ATN technology, setting it in the larger context of Automated Guideway Transit (AGT); looks at the current status of ATN suppliers, the status of the ATN industry, and the prospects of a US-based ATN industry; summarizes and organizes proceedings from the seven Podcar City conferences held since 2006; documents the US/Sweden Memorandum of Understanding on Sustainable Transport; discusses how ATN could expand the coverage of existing transit systems; explains the opportunities and challenges in planning and funding ATN systems and approaches for procuring ATN systems; and concludes with a summary of the challenges and opportunities for ATN technology. The study is intended to be an informative tool for planners, urban designers, and those involved in public policy, especially for urban transit, to provide a reference for history and background on ATN, and to use for policy development and research.

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### ***White Paper: Building Consensus and Partnerships for Implementing MAP-21's Section 5310 Program in California***

Project 1229 (seed grant)

Principal Investigator: Christopher E. Ferrell, PhD

The Moving Ahead for Progress in the 21st Century Act (MAP-21)—the legislation that currently provides funding for federal transportation—allows metropolitan planning organizations (MPOs) or eligible large, urbanized area (UZA) agencies to assume administrative responsibility for Federal Transit Administration (FTA) Section 5310. This is the Enhanced Mobility of Seniors and Individuals with Disabilities grant program. Caltrans engaged Mineta Transportation Institute (MTI) to

conduct research and facilitate a dialogue with the State's 5310 stakeholders. The MTI team interviewed key stakeholders and Caltrans staff and performed in-depth quantitative analysis of the existing administrative activities of the 5310 program. This research was followed by two statewide 5310 program workshops led by Drs. Ferrell and Appleyard to facilitate discussion among stakeholders and reach consensus on how the new MAP-21 program would be implemented.

Some key findings from this research and dialogue determined that: a “full transition” to MPO Program administration could significantly reduce benefits of the 5310 program for the entire state; a full transition could leave smaller MPOs lacking sufficient administrative funds to adequately run the program in their jurisdictions; stakeholders are concerned that their local project funding priorities may not receive enough attention if Caltrans retains sole administrative responsibilities for the program; a majority of stakeholders prefer to pursue a partnership with Caltrans to jointly run the 5310 program; and this “Hybrid/Partnership Option” can provide maximum program flexibility over the long term while building the administrative capacities of all partners.

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### ***Managerial Segmentation of Service Offerings in Work Commuting***

Project 1232 (seed grant)

Principal Investigator: Steven Silver, PhD

Methodology to efficiently segment markets for public transportation offerings has been introduced and exemplified in an application to an urban travel corridor in which high tech companies predominate. The principal objective has been to introduce and apply multivariate methodology to efficiently identify segments of work commuters and their demographic identifiers. A set of attributes in terms of which service offerings could be defined was derived from background studies and focus groups of work commuters in the identified county. Adaptive choice conjoint analysis was used to derive the importance weights of these attributes in available service offering to these commuters. A two-stage clustering procedure was then used to explore the grouping of individuals' subsets into homogeneous sub-groups of the sample. These subsets are commonly a basis for differentiation in service offerings that can increase total ridership in public transportation while approximating cost neutrality in service delivery. Recursive partitioning identified interactions between demographic predictors that significantly contributed to the discrimination of demographic segments. Implementation of results is discussed.



## **What Do Americans Think about Federal Tax Options to Support Public Transit, Highways, and Local Streets and Roads? Results from Year Five of a National Survey**

Project 1328

Principal Investigator:

Asha Weinstein Agrawal, PhD

This report summarizes the results of year five of a national random-digit-dial public opinion poll asking 1,503 respondents if they would support various tax options for raising federal transportation revenues, with a special focus on understanding support for increasing revenues for public transit. Eleven specific tax options tested were variations on raising the federal gas tax rate, creating a new mileage tax, and creating a new federal sales tax. Other questions probed various perceptions related to public transit, including knowledge and opinions about federal taxes to support transit. In addition, the survey collected data on standard socio-demographic factors, travel behavior (public transit use, annual miles driven, and vehicle fuel efficiency), and attitudinal data about how respondents view the quality of their local transportation system and their priorities for government spending on transportation in their states.

The survey results show that a majority of Americans would support higher taxes for transportation—under certain conditions. For example, a gas tax increase of 10 cents per gallon to improve road maintenance was supported by 69% of respondents, whereas support levels dropped to just 25% if the revenues were to be used more generally to maintain and improve the transportation system. For tax options in which revenues were to be spent for undefined transportation purposes, support levels varied considerably by what kind of tax would be imposed, with a sales tax much more popular than either a gas tax increase or a new mileage tax.

With respect to public transit, the survey results show that most people want good public transit service in their states. In addition, nearly two-thirds of respondents support spending gas tax revenues on transit. However, questions exploring different methods to raise new revenues found relatively low support for raising gas taxes or transit fare rates. Also, not all respondents were well informed about how transit is funded, with only half knowing that fares do not cover the full cost of transit.



Council of  
University  
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Banquet.



# ONGOING RESEARCH PROJECTS

The following research projects are currently in process.

Project Title	Project	Principal Investigator
Investigating the Determining Factors for Transit Travel Demand by Bus Mode in the U.S. Metropolitan Statistical Areas	1101	Alam Bhuiyan, PhD
Neighborhood Crime and Transit Station Access Mode Choice – Phase III of Neighborhood Crime and Travel Behavior	1107	Christopher Ferrell, PhD
Changes in Transit Use and Service and Associated Changes in Driving Near a New Light Rail Transit Line	1108	Hilary Nixon, PhD
Safety Aspects of the Design of Bicycle Transportation Infrastructure	1125	Jan Botha, PhD
Remedial Actions to Prevent Suicides and Accidental Deaths on Commuter and Metro Rail Systems	1129	Patrick Sherry, PhD
Transit and Passenger Rail Security: A Critical Assessment of What Works	1130	Brian Michael Jenkins
What Do Americans Think About Public Transit? A Review of U.S. Public Opinion Polling Survey Questions	1132*	Asha Weinstein Agrawal, PhD
Electrical and Thermal Modeling of a Large-Format Lithium Titanate Oxide Battery System	1150	Timothy Cleary
Advanced Low-Floor Vehicle (ALFV) Specification Research	1151	Suresh Iyer, PhD
Bicycling and Access to Transit by Low-Income Immigrants	1202	Daniel G. Chatman, PhD
Integrating Multimodal Data into Benefit-Cost Analysis for Transportation Planning and Public Policy	1203	Matthew Holian, PhD
The Impact of Public Bikesharing on Bicycle Safety in North America	1204	Elliott Martin, PhD
A Tool to Evaluate and Optimize Multimodal Transit Access	1205	Maaza Christos Mekuria, PhD
Comparing Data Quality and Cost from Three Modes of On-Board Transit Passenger Surveys	1206	Hilary Nixon, PhD and Asha Weinstein Agrawal, PhD
Transportation Futures for Deep Greenhouse Gas Reductions: Synergistic Interactions of New Transportation Technologies and Services with Land Use, Transit, and Auto Pricing Policies	1207	Caroline Rodier, PhD
Performance Measurement and Transit Data	1208	Caroline Rodier, PhD
Promoting Intermodal Connectivity at California's High-Speed Rail Stations	1209	Anastasia Loukaitou-Sideris, PhD
Transportation Construction Work Zone Safety Impact on Time-related Incentive Contracting Projects	1224*	Jae-ho Pyeon, PhD
Great East Japan Earthquake, JR East Mitigation Successes, and Lessons for California High-Speed Rail	1225	Frances Edwards, PhD
International Lessons for Promoting Transit Connections to High-Speed Rail Systems	1226	Stan Feinsod
Passenger Flows in Underground Railway Stations and Platforms	1230	Anastasia Loukaitou-Sideris, PhD
Nexus between Infrastructure and Accessibility	1233	Stephanie DiPetrillo and Andrea Lubin
Analysis of the US Transit Bus and Paratransit Vehicle Manufacturing Industry	1234	David Czerwinski, PhD
Developing Public-Private Partnerships for Improving Regional Mass Transit Services in the United States	1235	Hokey Min, PhD

## ONGOING RESEARCH PROJECTS

Project Title	Project	Principal Investigator
Understanding Public Opinion Regarding Transit in Southeast Michigan	1236	Claudia Bernasconi, PhD
Economic Benefits of Bus Rapid Transit (BRT) in Southeast Michigan	1237	Utpal Dutta, PhD
Remanufacturing, Repurposing, Recycling and Disposal of Public Transit Vehicle Batteries	1238	Charles R. Standridge, PhD
Development of Bus-Stop-Time Models in Dense Urban Areas: A Case Study in Washington DC	1239	Stephen Arhin, PhD
Finances and Transit: A Historical Case Study of the New York Metropolitan Transportation Authority	1241	Robert Noland, PhD
Performance Measures to Assess Efficiency and Resilience of Transit Systems	1242	Hani Nassif, PhD
Behavioral Analysis of the Impacts of Hurricane Sandy in New Jersey	1243	Robert Noland, PhD
A Longitudinal Assessment of Social Networks' Effect on Mode Choice	1244	Michael Smart, PhD
Experimental Modeling of NOx and PM Generation from Combustion of Various Biodiesel Blends for Urban Transport Buses	1245	Ashok Kumar, PhD and Dong-Shik Kim, PhD
Estimating Uncertainty of Bus Arrival Times and Passenger Occupancies	1246	Vikash V. Gayah, PhD
Safety of Lithium Nickel Cobalt Oxide Battery Packs in Transit Bus Applications	1247	Timothy Cleary
Feasibility Study of a Public Bikesharing Program in Las Vegas	1248	Harry Teng, PhD
Enhancing Walkability in Las Vegas	1249	Mohamed Kaseko, PhD
Experimental Modeling of NOx and PM Generation from Combustion of Various Biodiesel Blends for Urban Transport Buses	1245	Ashok Kumar, PhD and Dong-Shik Kim, PhD
Estimating Uncertainty of Bus Arrival Times and Passenger Occupancies	1246	Vikash V. Gayah, PhD
Safety of Lithium Nickel Cobalt Oxide Battery Packs in Transit Bus Applications	1247	Timothy Cleary
Feasibility Study of a Public Bikesharing Program in Las Vegas	1248	Harry Teng, PhD
Enhancing Walkability in Las Vegas	1249	Mohamed Kaseko, PhD
Intermodal Bus and Bicycle Transportation in Southern Nevada	1250	Alexander Paz, PhD
University of Nevada Las Vegas Community Transit Services	1251	Pramen Shrestha
Park and Ride Linkage to Public Transit Service Productivity	1401	John Niles
The Benefits of Public Transportation	1425	Christopher Ferrell, PhD
Correlation between Household Income and Household Vehicle Fuel Economy in the U.S. and specifically in California	1426	Christopher Ferrell, PhD
What do Americans Think about Federal Tax Options to Support Public Transit, Highways, and Local Streets and Roads? Results from Year Six of a National Survey	1428	Asha Weinstein Agrawal, PhD

\* MTI Seed Grant



# COMPLETED RESEARCH PROJECTS

The following projects were described in more detail in prior annual reports. They are listed here in chronological order to assure that all completed projects are acknowledged, regardless of which grant or authorization period they represent.

Project Title	Project	Principal Investigator
Impacts of the North American Free Trade Agreement on Transportation in the Border Areas of the United States: With Emphasis on the California Border with Mexico	9700	George Gray
Analysis of Policy Issues Relating to Public Investment in Private Freight Infrastructure	9701	Dan Evans, JD
Why Campaigns for Local Transportation Funding Initiatives Succeed or Fail: An Analysis of Four Communities and National Data	9702	Peter Haas, PhD
NAFTA II: California Border Zone Land Transportation Issues	9802	George Gray
Land Use and Transportation Alternatives: Constraint or Expansion of Household Choice?	9803	Jonathan Levine, PhD
Applying an Integrated Urban Model to the Evaluation of Travel Demand Management Policies in the Sacramento Region	9804	Robert Johnston
Protecting Public Surface Transportation against Terrorism and Serious Crime: Continuing Research on Best Security Practices	9805	Brian Michael Jenkins
Protecting Public Surface Transportation against Terrorism and Serious Crime: An Executive Overview	9805-2	Brian Michael Jenkins
GIS for Livable Communities: Using GIS to Improve Transportation Planning and Community Livability	9806	Tom Horan, PhD
A New Planning Template for Transit-Oriented Development	9807	Dick Nelson
The Travel Behavior and Needs of the Poor: A Study of Welfare Recipients in Fresno County, California	9808	Evelyn Blumenberg, PhD
Implementation of Zurich's Transit Preferential Program	9809	Andrew Nash
Envisioning Neighborhoods with Transit-Oriented Development Potential	9810	Earl G. Bossard, PhD
Best Practices in Developing Regional Transportation Plans	9811	Donald R. Rothblatt, PhD
Construction of Transit-Based Developments: New Policy Initiatives for Governments	9901	Scott Lefaver, DPA, AICP
How to Best Serve Seniors on Existing Transit Services	9902	David Koffman
Effects of Online Shopping on Vehicular Traffic Patterns	9903	Joseph J. Giglierano, PhD
Factors Influencing Voting Results of Local Transportation Funding Initiatives with a Substantial Rail Transit Component: Case Studies of Ballot Measures in Eleven Communities	9904	Richard A. Werbel, PhD
Developer-Planner Interaction in Transportation and Land Use Sustainability	9905	Aseem Inam, PhD
Transit Labor Relations Guide	9906	Herb Oestreich, PhD
Non-Pricing Methods to Optimize High Occupancy Vehicle Lane Usage	9908	George Gray
A Statewide Study for Bicyclists and Pedestrians on Freeways, Expressways, Tunnels and Toll Bridges	9909	Thomas C. Ferrara, PhD
Using the Internet to Envision Neighborhoods with TOD Potential	2001	Earl G. Bossard, PhD

## COMPLETED RESEARCH PROJECTS

Project Title	Project	Principal Investigator
Applying an Integrated Urban Model in the Evaluation of Travel Demand Management Policies in the Sacramento Region: Year Two	2002	Robert Johnston
The California General Plan Process and Sustainable Transportation Planning	2003	Richard Lee, PhD, AICP
Trucks, Traffic, and Timely Transport: A Regional Freight Logistics Profile	2004	John S. Niles
Increasing Transit Ridership: Lessons from the Most Successful Transit Systems in the 1990s	2005	Brian D. Taylor, PhD
Using Fiber Networks to Stimulate Transit Oriented Development: Prospects, Barriers and Best Practices	2007	Walter Siembab
Bridging the Gap: Planning Inter-jurisdictional Transit Services	2102	Patrick McGovern, PhD
Toward Sustainable Transportation Indicators for California	2106	Richard Lee, PhD
Modeling Long-Range Transportation and Land Use Scenarios for the Sacramento Region, Using Citizen-Generated Policies	2107	Robert Johnston
Verifying the Accuracy of Regional Models Used in Transportation and Air Quality	2108	Caroline Rodier, PhD
Impact of Ethnic Diversity on Transit: How Do Various Population Groups View and Utilize Various Transit Modes?	2109*	Richard A. Werbel, PhD
Making Growth Work for California's Communities	2111	Kenneth R. Schreiber, AICP
Best Practices in Shared Use of High Speed Rail Systems	2113	Andrew Nash
Saving City Lifelines: Lessons Learned in the 9-11 Terrorist Attacks	2114	Brian Michael Jenkins
The Future of Transportation Education: A Needs Assessment for the Transportation Management Program at San José State University	2201	Linda Valenty, PhD
Can Consumer Information Tighten the Transportation/Land Use Link? A Simulation Experiment	2202	Daniel Rodriguez, PhD
Using Spatial Indicators for Pre- and Post-Development Analysis of TOD Areas: A Case Study of Portland and the Silicon Valley	2203	Marc Schlossberg, PhD
Higher Density Plans: Tools for Community Engagement	2204	Kenneth Schreiber, AICP
The Impact of Telecommuter Rail Cars on Modal Choice	2205	James Hayton, PhD
A Consumer Logistics Framework for Understanding Preferences for High-Speed Rail Transportation	2206	Kenneth C. Gehrt, PhD
Lessons Learned in Attempting to Survey Hard-to-Reach Ethnic Segments Along with the Presentation of a Comprehensive Questionnaire	2207	Richard Werbel, PhD
Designing and Operating Safe and Secure Transit Systems: Assessing Current Practices in the U.S. and Abroad	2301	Brian D. Taylor, PhD
Verifying the Accuracy of Land Use Models Used in Transportation and Air Quality Planning: A Year-Two Validation Study	2302	Caroline Rodier, PhD
Applying Smart Growth Principles and Strategies to Resolving Land Use Conflicts around Airports	2303	Richard Lee, PhD
High-Speed Rail Projects in the United States: Identifying the Elements for Success	2304	Allison de Cerreño, PhD
The Pasadena Gold Line: Development Strategies, Location Decisions, and Travel Characteristics along a New Rail Line in the Los Angeles Region	2305	Hollie Lund, PhD

\* MTI Seed Grant

# COMPLETED RESEARCH PROJECTS

Project Title	Project	Principal Investigator
High-Speed Rail Projects in the United States: Identifying the Elements for Success – Part 2	2401	Allison de Cerreño, PhD
Barriers to Using Fixed-Route Transit for Older Adults	2402	Michael Peck, PhD, MSW
Public versus Private Mobility for the Poor: Transit Improvements versus Increased Car Ownership in the Sacramento Region	2403	Robert Johnston
Video Transit Training for Older Travelers: A Case Study of the Rossmoor Senior Adult Community, California	2404	Susan Shaheen, PhD
Neighborhood Crime and Travel Behavior: An Investigation of the Influence of Neighborhood Crime Rates on Mode Choice	2405	Christopher Ferrell, PhD and Wenbin Wei, PhD
How Far, by Which Route, and Why? A Spatial Analysis of Pedestrian Preference	2406	Marc Schlossberg, PhD
Beyond Uncertainty: Urban Models in Transportation and Air Quality Planning	2407	Caroline Rodier, PhD
Paving the Way: Recruiting Students into the Transportation Professions	2408	Asha Weinstein Agrawal, PhD
Bus Rapid Transit: A Handbook for Partners	2426	Tom Larwin and George Gray
The 1995 Attempted Derailing of the French TGV (High-Speed Train) and a Quantitative Analysis of 181 Rail Sabotage Attempts	2501-2	Brian Michael Jenkins
Caltrans Statewide Cultural Properties Information System	2502	Eric Ingbar
Collaborative Funding to Facilitate Airport Ground Access	2503	Geoffrey Gosling, PhD
Exploration of Data Sources for Air Cargo Studies	2525*	Wenbin Wei, PhD
Evaluating the Environmental Justice Effects of Land Use Scenarios in the Sacramento Region with the PECAS Activity Allocation Model	2601-2705**	Caroline Rodier, PhD
Tribal Corridor Management Planning: Model, Case Study, and Guide for Caltrans District 1	2604	Mary Scoggin, PhD and Joy Adams, PhD
Shared-Use Bus Priority Lanes on City Streets: Case Studies in Design and Management	2606	Asha Weinstein Agrawal, PhD
Connecting Transportation Decision Making with Responsible Land Use: State and Regional Policies, Programs, and Incentives	2607	Gary Binger, AICP
The Influence of Service Planning Decisions on Rail Transit Success or Failure	2608	Jeffrey Brown, PhD and Gregory Thompson
Effects of Suburban Transit-Oriented Developments on Residential Property Values	2609	Shishir Mathur, PhD
The Nature of Context-Sensitive Solutions, Stakeholder Involvement and Critical Issues in the Urban Context	2610	Marta Pañero, PhD
How to Ease Women's Fear of Transportation Environments: Case Studies of Best Practices	2611	Anastasia Loukaitou-Sideris, PhD
Carsharing and Public Parking Policies: Assessing Benefits, Costs and Best Practices	2612	Susan Shaheen, PhD
An Ambit-Based Activity Model for Evaluation Green House Gas Emission Reduction Policies	2613*	Asim Zia, PhD
Creating an Educational Network in California to Assess and Address its Future Transportation Education Challenges	2614*	Triant Flouris, PhD

\* MTI Seed Grant

\*\* Phases I and II were combined in this report



## COMPLETED RESEARCH PROJECTS

Project Title	Project	Principal Investigator
"Green" Transportation Taxes and Fees: A Survey of Californians	2701	Asha Weinstein Agrawal, PhD
Carsharing and Carbon Dioxide Emission Reduction across Density and Transit Quality Gradients in the U.S.	2702	Susan Shaheen, PhD
Linking Highway Improvements to Changes in Land Use with Quasi-Experimental Research Design: A Better Forecasting Tool for Transportation Decision Making	2703	Hilary Nixon, PhD
Case Studies of Incremental Bus Rapid Transit Projects in North America	2704	John Niles
Evaluating the Environmental Justice Effects of Land Use Scenarios in the Sacramento Region with the PECAS Activity Allocation Model	2601-2705**	Caroline Rodier, PhD
The Role of Transportation in a Campus-Level Emergency	2727	Frances Edwards, PhD, CEM
Improving Transportation Construction Project Performance: Development of a Model to Support Decision-Making Process for Incentive/Disincentive Construction Projects	2801	Jae-Ho Pyeon, PhD
Neighborhood Crime and Travel Behavior: An Investigation of the Influence of Neighborhood Crime Rates on Mode Choice – Phase II	2802	Christopher Ferrell, PhD
Facilitating Telecommuting as a Means of Congestion Reduction	2803	Nancy Da Silva, PhD; Meghna Virick, PhD
Development Challenges of Secondary and Small Airports in California	2804	Senanu Ashiabor, PhD
Model-based Transportation Performance: A Comparative Framework and Literature Synthesis	2805	Caroline Rodier, PhD
Getting Around When You're Just Getting By: The Travel Behavior and Transportation Expenditures of Low-Income Adults	2806	Asha Weinstein Agrawal, PhD and Evelyn Blumenberg, PhD
Policy Issues in U.S. Transportation Public-Private Partnerships: Lessons from Australia	2807	Rick Geddes, PhD
Ecodriving and Carbon Footprinting: Understanding How Public Education Can Reduce Greenhouse Gas Emissions and Fuel Use	2808	Susan Shaheen, PhD
Ecodriving and Carbon Footprinting: Understanding How Public Education Can Reduce Greenhouse Gas Emissions and Fuel Use	2808	Susan Shaheen, PhD
Understanding Household Preferences for Alternative Fuel Vehicle Technologies	2809	Hilary Nixon, PhD
Bicycling Access and Egress to Transit: Informing the Possibilities	2825	Kevin Krizek, PhD
A Framework for Developing and Integrating Effective Routing Strategies within the Emergency Management Decision Support System for Transit Centers	2901	Anurag Pande, PhD
Potential Economic Consequences of Local Nonconformity to Regional Land Use and Transportation Plans Using a Spatial Economic Model	2902	Caroline Rodier, PhD
An Investigation into Constraints to Sustainable Vehicle Ownership and Use: A Focus Group Study	2903	Bradley Flamm, PhD
Evaluating the Environmental Justice Effects of Land Use Scenarios in the Sacramento Region with the PECAS Activity Allocation Model	2601-2705**	Caroline Rodier, PhD
The Role of Transportation in a Campus-Level Emergency	2727	Frances Edwards, PhD, CEM
Improving Transportation Construction Project Performance: Development of a Model to Support Decision-Making Process for Incentive/Disincentive Construction Projects	2801	Jae-Ho Pyeon, PhD
Neighborhood Crime and Travel Behavior: An Investigation of the Influence of Neighborhood Crime Rates on Mode Choice – Phase II	2802	Christopher Ferrell, PhD

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Project Title	Project	Principal Investigator
Facilitating Telecommuting as a Means of Congestion Reduction	2803	Nancy Da Silva, PhD; Meghna Virick, PhD
Development Challenges of Secondary and Small Airports in California	2804	Senanu Ashiabor, PhD
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An Investigation into Constraints to Sustainable Vehicle Ownership and Use: A Focus Group Study	2903	Bradley Flamm, PhD
Examination of Regional Transit Service under Contracting: A Case Study in the Greater New Orleans Region	2904	Hiro Iseki, PhD
Integration of Bicycling and Walking Facilities into the Infrastructure of Urban Communities	2906	Cornelius Nuworsoo, PhD
Measuring Walking and Cycling Using the PABS (Pedestrian and Bicycling Survey) Approach: A Low-Cost Survey Method for Local Communities	2907	Kevin Krizek, PhD and Ann Forsyth, PhD
Systematic Procedures to Determine Incentive/Disincentive Dollar Amount for Highway Transportation Construction Projects	2908	Jae-Ho Pyeon, PhD
The Intersection of Urban Form and Mileage Fees: Findings from the Oregon Road User Fee Pilot Program	2909	Zhan Guo, PhD
Emergency Management Training and Exercises for Transportation Agency Operations	2910	Frances Edwards, PhD
Revisiting Factors Influencing Voting Results of Local Transportation Funding Initiatives with a Substantial Rail Transit Component	2911	Peter Haas, PhD
Reliability Centered Maintenance: A Case Study of Railway Transit Maintenance to Achieve Optimal Performance	2913	Felix Marten, PhD
Exploring the Effectiveness of Transit Security Awareness Campaigns in the San Francisco Bay Area	2914	Nina Rohlich
Suicides on Urban Commuter Rail Systems in California – Possible Patterns	2926	Jan L. Botha, PhD
Promoting Bicycle Commuter Safety	2927	Asbjorn Osland, PhD
What Do Americans Think About Federal Transportation Tax and Fee Options? Results from a National Survey	2928	Asha Weinstein Agrawal, PhD

## COMPLETED RESEARCH PROJECTS

Project Title	Project	Principal Investigator
Continuity of Operations/Continuity of Government for State-Level Transportation Organizations	2976	Frances Edwards, PhD
Security Awareness for Public Bus Transportation: Case Studies of Attacks Against the Israeli Public Bus System	2978	Bruce Robert Butterworth
Carnage Interrupted: An Analysis of Fifteen Terrorist Plots against Public Surface Transportation	2979	Brian Michael Jenkins
Residential On-Site Carsharing and Off-Street Parking Policy in the San Francisco Bay Area	1001-Part I	Charles Rivasplata, PhD
Amenity or Necessity? Street Standards as Parking Policy	1001-Part II	Zhan Guo, PhD
The Impact of Center City Economic and Cultural Vibrancy on Greenhouse Gas Emissions from Transportation	1002	Matthew Holian, PhD
Understanding Transit Ridership Demand for a Multi-Destination, Multimodal Transit Network in an American Metropolitan Area	1003	Greg Thompson, PhD, and Jeffrey Brown, PhD
A Decision Support Framework for Using Value Capture to Fund Public Transit: Lessons from Project-specific Analysis	1004	Shishir Mathur, PhD
Low-Stress Bicycling and Network Connectivity	1005	Maaza Mekuria, PhD
Proactive Assessment of Accident Risk to Improve Safety on a System of Freeways	1006	Anurag Pande, PhD
Cost Estimate Modeling of Transportation Management Plan for Highway Projects	1007	Jae-Ho Pyeon, PhD
An Economic and Life Cycle Analysis of Regional Land Use and Transportation Plans	1008	Caroline Rodier, PhD
User Evaluations of Intermodal Travel to Work: Exploratory Studies	1025*	Steven Silver, PhD
Formulating a Strategy for Securing High-Speed Rail in the United States	1026	Brian Michael Jenkins
Estimating Workforce Development Needs for High-Speed Rail in California	1027	Peter Haas, PhD
Wellness Lessons from Transportation Companies	1028*	Asbjorn Osland, PhD
Public Bikesharing in North America: Early Operator and User Understanding	1029	Susan Shaheen, PhD
Planning for Complementarity: An Examination of the Role and Opportunities of First-tier and Second-tier Cities along the HSR Network in California	1030	Anastasia Loukaitou-Sideris, PhD
What Do Americans Think About Federal Transportation Tax Options? Results From Year 2 of a National Survey	1031	Asha Weinstein Agrawal, PhD
An Examination of Women's Representation and Participation in Bicycle Advisory Committees in California	1034*	Hilary Nixon, PhD
Generic Continuity of Operations/Continuity of Government Plan for State-Level Transportation Agencies	1080	Frances L. Edwards, PhD
Analyzing the Effects of Transit Network Change in a Decentralized, Mid-sized US Metropolitan Area on Transit Agency Performance and Transit Riders: A Case Study of Tallahassee, Florida	1102	Jeffrey Brown, PhD
California Voting and Suburbanization Patterns: Implications for Transit Policy	1105	Matthew Holian, PhD
Measuring the Performance of Livability Programs	1126	Peter Haas, PhD



## COMPLETED RESEARCH PROJECTS

Project Title	Project	Principal Investigator
Assessing Importance and Satisfaction Judgments of Intermodal Work Commuters with Electronic Survey Methodology	1127	Steven Silver, PhD
What Do Americans Think About Federal Tax Options to Support Public Transit, Highways, and Local Streets and Roads? Results from Year 3 of a National Survey	1128	Asha Weinstein Agrawal, PhD
2012 Census of California Water Transit Services	1133	Richard Kos, AICP
Assessing the Comparative Efficiency of Urban Mass Transit Systems in Ohio: Longitudinal Analysis	1135	Hokey Min, PhD
Long Term Trends in Patron Satisfaction of DC Circulator	1138	Errol Noel, PhD
Evaluation of Bus Transit Reliability in the District of Columbia	1139	Stephen Arhin, PhD
What Do Americans Think About Federal Tax Options to Support Public Transit, Highways, and Local Streets and Roads? Results from Year Four of a National Survey	1228	Asha Weinstein Agrawal, PhD

## MNTRC/MTI RESEARCH

Metric	2007-08	2008-09	2009-10	2010-11	7/1/11-12/31/12*	CY 2013	CY 2014
Number of research projects selected for funding	6	16	21	18	35	33	8
Number of reports issued	5	12	35	37	41	25	22
Number of research papers presented	17	33	66	71	80	72	64
Number of students participating in research	28	42	39	40	137	76	43

## PERSPECTIVES

In January 2014, MTI initiated a series of Transportation Security Perspectives. These were distributed through the news release system and posted on the Institute's web site. Each was a bylined article addressing a timely facet of transport security. Authors were MTI's National Transportation Safety and Security Center Director Brian Michael Jenkins and MTI Research Associate Bruce Butterworth. Both are recognized experts on the topic.

The first of these Perspectives, By the Numbers: Russia's Terrorists Increasingly Target Transportation, provided insight about bombings in Volgograd – one in a train station, and the other on a trolley bus. With the Olympic Games coming up, concerns were high regarding transport vulnerability in Russia.

The second Perspective, Mineta Transportation Institute Says Subways Are Still in Terrorists' Sights, discussed the arrest of

a California National Guard reservist, who planned to bomb the Los Angeles subway. The article explained the rationale for striking underground trains.

Subsequently, MTI published four additional Perspectives, which analyzed the terrorist knife attacks in Kunming, China; the bus terminal bombing in Abuja, Nigeria; the reasons behind security breaches at US airports; and why suicide bombings against trains and buses are lethal but few.

Each article provides not only insight about the significance of each event, but also some practical information for the reader – why they should not feel helpless, how they can keep a rational perspective, what kind of action they can take, and other counsel.

# COMMUNICATIONS AND INFORMATION TECHNOLOGY TRANSFER



## Donna R. Maurillo, MSTM

Director

[Donna.Maurillo@sjsu.edu](mailto:Donna.Maurillo@sjsu.edu)

Donna Maurillo joined MTI in 2007, managing information/technology transfer (ITT), such as symposia, forums, and public meetings. She also manages MNTRC and MTI communications vehicles, including the web site, annual report, media relations, social media, and other public outreach, and she manages MTI's memoranda of cooperation (MOC) with universities in other countries.

Director Maurillo managed corporate communications for Silicon Valley technology companies. She also managed venture capital and technology accounts for technology PR agencies, and she was an instructor and consultant in corporate communications for many years.

Director Maurillo earned her BA from the University of California and delivered the commencement address. She earned her Master of Science in Transportation Management (MSTM), and she holds counter-terrorism certificates. She is a member of the Phi Kappa Phi academic honor society, and she achieved her 30 minutes of fame as a contestant on Jeopardy.

## OVERVIEW

**The Communications and ITT function at MNTRC and MTI has become a valuable resource for transportation researchers, policy makers, and professionals around the world, providing:**

- Symposia and other events to collaborate with transportation leaders about key topics such as transportation security, workforce development, transportation finance, sustainable vehicles, high-speed rail, and other issues. Summaries and reports from those meetings, along with promotions for MNTRC research reports. These may be downloaded at no cost from the MTI and MNTRC web sites.
- Information resources for a broad variety of transportation topics – available on MNTRC's web site, at libraries, or through our network of other transportation sites.
- Educational resources to help students consider the math and science courses that may lead to careers in transportation, or to help future transportation leaders learn about MTI's accredited Master of Science in Transportation Management program.
- The latest news about MNTRC's research, information about national transportation issues, opinion polls, insights about mobility trends, transportation funding forecasts, and other timely issues.
- Special research or other special projects funded outside of MNTRC's usual grants.
- Graphics and technical support for MNTRC outreach, including web design, event planning, PowerPoints, photography, illustrations, charts, marketing materials, handbooks, and other products and services.
- Promotion of MNTRC and its products and services by way of social media.
- Management of Information Technology (IT) as it relates to in-office technology functions.

# FORUMS AND SUMMITS

Each year MNTRC and MTI host regional forums and state or national summits, either as stand-alone events or as part of larger gatherings of transportation professionals. Listed in chronological order, the events presented during the 12-month reporting period include:

## **MTI-Sponsored Forums and Summits**

All MTI projects were managed by Donna R. Maurillo, MSTM

### **TransForm California: Let's Get Moving, Silicon Valley**

February 2014 – Palo Alto CA

MTI was a co-sponsor of this one-day public participation conference addressing the problems of mobility in an increasingly traffic-congested world. More than 200 people heard speakers from nearly 40 organizations address these challenges. The summit opened with a plenary session, followed by 12 interactive breakout sessions on transportation and land use topics. Videos from the event may be accessed at [youtube.com/user/TransFormCA/videos](http://youtube.com/user/TransFormCA/videos)

### **14th Annual Garrett Morgan Sustainable Transportation Competition**

March 2014 – Nationwide

MTI works with California's DOT (Caltrans) and the US Department of Transportation to organize a curriculum that challenges middle-school students to solve transportation problems. Schools receive free curriculum workbooks from MTI. From these lessons, the student teams create a project that they demonstrate during a live streaming video broadcast. Cash awards are given to the top team classrooms.

Students are introduced to transportation leaders during the broadcast, including luminaries such as Transportation Secretary Ray LaHood and retired Transportation Secretary Norman Mineta, and others.

### **Fourth Annual International Green Industry Hall of Fame Conference**

March 2014 – San Jose CA

MTI co-sponsored and hosted this annual event, which honors the pioneers, leaders, and visionaries contributing to the green industry and helping to preserve fragile ecosystems. The day-long conference included a plenary session, breakout workshops, and an awards banquet during which the Hall of Fame awards were given. The first annual Rod Diridon Transportation Award was also given.

### **55th Annual Transportation Research Forum**

March 2014 – San Jose CA

The Transportation Research Forum provides a forum to exchange ideas among practitioners, researchers, academics, and government officials regarding all modes of transportation worldwide. Innovation and sustainability were themes for this annual event, which MTI co-sponsored. The Forum presented 100 papers in 25 sessions, plus several poster sessions. A grad student roundtable and article submission session were included, along with a debate.

### **Women in Transportation: Addressing Workforce Development**

April 2014 – Denver CO

This public conference helped increase awareness and discussion about recruiting, retaining, promoting, and maintaining the health of women in transportation. Sherri LeBas, Louisiana State Secretary of Transportation, delivered the keynote. Three panel sessions followed, including "Women in Transportation Logistics," "Developing Women in Transportation," and "Developing Women Leaders for Careers in Transportation." Marcia Ferranto, president and CEO of WTS International, delivered closing remarks.

### **Transportation Crisis Management**

April 2014 – Washington DC

Dr. Frances Edwards, Deputy Director of MTI's National Transportation Safety and Security Center, led a tour of the US Department of Transportation's Crisis Management Center for the American Society of Public Administration's Transportation Section.

### **Norman Y. Mineta Transportation Policy Forum**

June 2014 – San Francisco CA

Retired Secretary of Transportation Norman Mineta opened this annual policy forum, held again at the Commonwealth Club of California in San Francisco. Federal Transit Administration Acting Administrator Therese McMillan delivered the keynote for this annual forum addressing transportation infrastructure funding and finance. Retired Deputy Secretary of Transportation Mortimer Downey moderated a panel of experts, who provided



additional insight. The event was broadcast on more than 230 NPR stations. A podcast is available at <http://bit.ly/1LcfiJD>

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### **TRB Transportation Finance Conference** July 2014 – Irvine CA

Asha Weinstein Agrawal, PhD, director of MTI's National Transportation Finance Center, presented her finance research at the 93rd Annual Meeting of the Transportation Research Board. The conference examined the status of transportation finance and future possibilities. Preeminent presenters were drawn from transportation research, government, and the private sector. Participants engaged in brainstorming sessions and interacted with transportation colleagues from around the world as they shared the latest finance techniques and innovations.

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### **Summer Transportation Institute** June-July 2014 – San Jose CA

The Summer Transportation Institute introduces 25 high school students – especially those from underrepresented populations – to transportation careers. For one month, students entering their senior year in high school participate five days per week in an intensive program. Classes are held on the campus of San Jose State University with hands-on lessons, instruction from people in related professions, team projects, field trips, and other curriculum features that help excite students about transportation careers.

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### **International Sister Cities Conference** July-August 2014 – San Jose CA

MTI co-hosted the Sister Cities International 58th Annual Conference, with its founder, Secretary of Transportation (ret.) Norman Mineta, welcoming the attendees. He was also named Honorary Co-Chair of the event. Over three days, elected and municipal officials, engaged citizens, diplomats, and business leaders to discuss “The Power of Digital Diplomacy.” More than 500 delegates attended from 26 countries.

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### **Ninth US-Japan Future Forum** September 2014 – San Jose CA

This year's program honored the 50th anniversary of Japan's bullet train, the shinkansen, by focusing on high-speed rail in the US. Participants included the Consul General of Japan, the Vice-Chairman of East Japan Railway, the Board Chair of the California High-Speed Rail Authority, and many others. Several universities were represented, including Iwate University, The University of Tokyo, the Tokyo Institute of Technology, San Jose State University, and others.

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### **Electric Vehicles Challenge** September 2014 – Cupertino CA

MTI co-sponsored this event, which showcased the first entirely electric 40-foot school bus owned by Gilroy Unified School District. Three training sessions were conducted by the CEO of ADOMANI, which converted the school bus. Topics included the health and economic benefits of converting current gasoline- or diesel-powered vehicles to electric; how the school bus was converted; and how to repower internal combustion engines.

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### **Transit Communications Conference** October 2014 – Charlotte NC

MTI co-sponsored this three-day international gathering of communications and technology professionals discussing ways to make transit safer, more efficient, and more popular for those entering the workforce.

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### **TransOvation 2014: Creating a Strategic Industry Business Plan to Meet U.S. Mobility Needs: 2020-2030**

November 2014 – Redmond WA

MTI co-sponsored this event, in which participants learned how Microsoft is planning to impact infrastructure. Teams challenged transportation design, construction, and management executives to use innovative thinking to build strategic business plans for the industry that anticipates technological, social, political, economic and demographic changes.

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### **US High-Speed Rail Conference** December 2014 – Los Angeles CA

Business and political leaders and the world's top experts brought high-speed rail to America. The event was co-sponsored by MTI, with Emeritus Executive Director Rod Diridon making a featured presentation. The conference addressed construction on the first phase of California's 800-mile state-of-the-art transportation system “set to revolutionize mobility in America.”

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# MNTRC PARTNER FORUMS AND SUMMITS

All projects were managed by their respective MNTRC directors.

## ► Practical Railroad Engineering

April 2014 – Las Vegas NV

The University of Nevada Las Vegas hosted the American Railway Engineering and Maintenance-of-way Association (AREMA) for its seminar, “Introduction to Practical Railway Engineering.” In total, 33 students attended the seminar, which also attracted professionals from several states across the US. Senior professionals who wished to return to the railway area also attended.

## ► Pre-College Engineering Program

March 2014 – Detroit MI

This program was created for high school students, bringing them into a hands-on experience with engineering for transportation and other fields. Nearly 25 students benefited from this introduction to practical science.

## ► Transit: Smart Moves Saturday Class

April 2014 – Detroit MI

In the Spring Term, UDM provided a Saturday transit class to 23 high school students as part of the Detroit Area Pre-College Pre-Engineering Program (DAPCEP). On five Saturdays, students learned about transportation engineering. They engaged in hands-on activities related to the latest in transportation design, including the creation of autonomous vehicles using Lego robotics. MDOT and other professionals provided their perspectives on transportation, including “green transit.”

## ► 21st Century Automotive Challenge

April 2014 – University Park PA

The Thomas D. Larson Pennsylvania Transportation Institute’s Hybrid and Hydrogen Vehicle Research Laboratory hosted the 21st Century Automotive

Challenge at Penn State’s University Park campus. This event was a transportation and lifestyle competition for college and high school students alike. Teams demonstrated how to integrate vehicle-to-building and vehicle-to-grid technology.

## ► Practical Railroad Engineering

May 2014 – Las Vegas NV

The University of Nevada Las Vegas, a member of the Mineta National Transit Research Consortium, hosted another American Railway Engineering and Maintenance-of-way Association (AREMA) for its seminar, “Introduction to Practical Railway Engineering.” In total, 22 students attended the seminar, which also attracted professionals from several states across the US. Senior professionals who wished to return to the railway area also attended.

## ► Howard University Summer Transportation Institute

June-July 2014 – Washington DC

This summer camp was designed to attract High School students to careers in transportation. STI provided a stimulating introduction to all modes of transportation through hands-on projects, problem-solving techniques, field trips, and classroom and enrichment activities. MNTRC sponsored. Students received various team and individual awards, along with certificates of completion.

## ► Transit Smart Moves

July 2014 – Detroit MI

TRANSIT is a two week summer commuter camp for high school students, currently in the 9th-12th grades, who want to learn about the world of transportation engineering. During this week, students engage in hands-on activities, labs and discussions lead by university professors, high school science teachers, and industry leaders representing

organizations such as MDOT, Ford Motor Company, Road Commission for Oakland County, SEMCOG, and others.

## ► 2014 Transportation Engineering Camp

July 2014 – Reno and Las Vegas NV

The summer camp for students in grades 10 and 11 took place at the University of Nevada’s Reno and Las Vegas campuses. Activities included classroom lectures, projects, hands-on activities, and field trips. Students learned about transportation engineering, including planning, design, construction, operation, maintenance, and management of transportation modes. Lessons gave an overview of urban transportation planning, highway geometric design, traffic signal systems, public transportation, high-speed rail planning, and airport traffic control.



# PREVIOUSLY COMPLETED SAFETEA-LU SUMMITS AND FORUMS

The following Norman Y. Mineta National Summits and Regional Forums were completed in previous years under SAFETEA-LU funding, starting with FY2007-08. They are included here to acknowledge MTI's increasing outreach and information transfer under that legislation. All projects were managed by Donna R. Maurillo, MSTM.

**The Crisis in Workforce Development**  
October 2007 – Charlotte NC

**Eighth National Garrett Morgan Videoconference and Symposium on Sustainable Transportation**  
April 2008 – Nationwide

**Town Hall Meeting on Our Bicycle Safety Crisis**  
June 2008 – San Jose CA

**Second Annual Transportation & Infrastructure Convention**  
March 2009 – Washington DC

**Ninth National Garrett Morgan Videoconference and Symposium on Sustainable Transportation**  
March 2009 – Nationwide

**Beyond the Crossroads: A National Discourse on Transportation Infrastructure and Regulatory Policy**  
May 2009 – Denver CO

**Using Bicycles for the First and Last Mile of Transit Commutes**  
June 2009 – San Jose CA

**Selective Screening of Rail Passengers: A Summary of the Pilot Tests**  
June 2009 – Chicago IL

**Bringing World-Class High-Speed Rail to America: Special General Session, 12th Annual Transportation and Infrastructure Summit**  
August 2009 – Irving TX

**The Vision and the Blueprint: High Speed Rail in the United States and Launching High-Speed Rail in the U.S.**  
October 2009 – Orlando FL

**San Jose State University Campus Bicycle Forum**  
October 2009 – San Jose CA

**The Next Fifty Years: Addressing California's Mobility in a Time of Financial Challenges**  
October 2009 – San Francisco CA

**Ensuring the Growth of California's Transportation Workforce**  
February 2010 – Long Beach CA

**2010 High-Speed Rail International Practicum**  
February 2010 – Washington, Chicago, Los Angeles

**Everyone Wants a Spot: Why Free Parking is a Bad Idea**  
February 2010 – San Jose CA

**Tenth National Garrett Morgan Videoconference and Symposium on Sustainable Transportation**  
March 2010 – Nationwide

**Meeting the Challenges of Urban Transportation**  
April 2010 – San Jose CA

**NCIT Transportation Workforce Development Conference**  
April 2010 – Washington DC

**Turning over a New Leaf: The Start of an Electric Vehicle Revolution**  
May 2010 – San Francisco CA

**Protecting Our Rail Infrastructure: What Are Our Risk Exposures?**  
June 2010 – Vancouver BC

**Norman Y. Mineta Regional Summit on Transportation Finance**  
June 2010 – San Francisco CA

**Inter-City Passenger Rail: Opportunities & Challenges for Colorado**  
September 2010 – Denver CO

**Norman Y. Mineta Transportation Forum: High-Speed Rail in California**  
September 2010 – San Jose CA

**Podcar City San Jose: The Fourth International Conference on Personal Rapid Transit**  
October 2010 – San Jose CA

**Eleventh National Garrett Morgan Videoconference and Symposium on Sustainable Transportation**  
March 2011 – Nationwide

**Ensuring the Growth of California's HSR Workforce**  
April 2011 – San Jose CA

**2011 International Practicum on Implementing High-Speed Rail in the US**  
May 2011 – Baltimore MD

**2011 APTA Rail Conference**  
June 2011 – Boston MA

**Summer Transportation Institute**  
June-July 2011 – San Jose CA

**From Point A to Point B: Fixing America's Transportation Problems**

June 2011 – San Francisco CA

**Pacific Cities Sustainability Initiative: Green Transportation Conference**

October 2011 – San Francisco and Los Angeles CA

**US & China Transportation Forum: Disaster Assistance Working Group**

January 2012 – San Jose CA

**Rail Security: Critical Insights and Applications**

January 2012 – Washington DC

**Introduction to Practical Railway Engineering**

March 2012 – Las Vegas NV

**Garrett Morgan Sustainable Transportation Competition**

March 2012 – Nationwide

**White House Roundtable**

April 2012 – San Jose CA

**How Can We Make Bicycle Travel Less Stressful?**

April 2012 – San Jose CA

**National Transportation Workforce Development Summit**

April 2012 – Washington DC

**COOP-COG Training for Transportation Agencies**

May 2012 – Cambridge MA

**Financing Infrastructure for America: Are We Becoming a Second Class Country?**

June 2012 – San Francisco CA

**Summer Transportation Institute**

June-July 2012 – San Jose CA

**Transportation Summer Camp**

July 2012 – Reno and Las Vegas NV

**Transit Summer Camp**

July-August 2012 – Detroit MI

**Transportation Innovation Series**

August 2012 – Washington DC, National

**Podcar City, Berlin**

September 2012 – Berlin, Germany

**COOP-COG Training for Transportation Agencies**

September 2012 – Cambridge MA

**ThinkBike Workshop**

October 2012 – San Jose CA

**Defining the Future of Transit Communications**

October 2012 – Dallas TX

**Asia Pacific Economic Cooperation Conference**

October 2012 – San Jose CA

**Financing the Future: The UCLA Lake Arrowhead Symposium on the Transportation - Land Use - Environment Connection**

October 2012 – Lake Arrowhead CA

**California's High Speed Rail: Lessons from Asia**

November 2012 – San Francisco and Los Angeles CA

**Distinguished Lecturer Series**

November 2012 – Las Vegas NV

**US High-Speed Rail Association Conference**

December 2012 – Los Angeles CA

**PERFORMANCE METRICS FOR SUMMITS AND FORUMS**

Fiscal Year	2007-13	2014*
Annual Events	13 (average)	23 (actual)
Annual Attendance	1,409 (average)	2,791 (actual)

\* 2014 is broken out separately to show performance metrics for the most recent year. Note that metrics from 2012-2014 also include MNTRC partner activities.



# OTHER PERFORMANCE

## MNTRC and MTI Web Sites

The ITT function also manages the MTI and MNTRC web sites, which provide easy access to the Consortium's free research reports, as well as information on educational programs and sponsored events. The use of mobile devices to access the web sites has risen significantly. To meet that demand, MTI implemented design techniques that automatically switch to small-screen use. The web sites also conform to Americans with Disabilities Act requirements.

## MTI Web Site Metrics

The following table indicates the monthly average for the number of MTI web site uses (hits) and the number of downloaded documents for the TEA 21 contract (1998-2006), and for the first SAFETEA-LU and Tier 1 competition agreement period (2006-14). However, this last item has been divided into two columns to specifically break out MTI's performance over the 12 months in the 2014 performance year.

The MTI and MNTRC Research pages provide research proposal information, downloadable forms for research associates, project descriptions for active research, and links to full-text files for final research reports.

MTI's Master of Science in Transportation Management (MSTM) pages are designed especially for current students, who can view upcoming class schedules, register for classes on an interactive form, and request information about the program.

## MNTRC Newsletter

MNTRC's World in Motion digital newsletter, published three times per year and posted on the web sites, is an effective medium to inform supporters about its ongoing transit research and education programs. The digital publication has helped eliminate the costs of printing and mailing while using an eco-friendly distribution. Active links in the newsletter allow readers to access relevant web sites for more information.

## Media Coverage

MTI and MNTRC have established reputation as resources for expert opinions about transit and connectivity issues. During the 12-month reporting period, 27 news releases were issued, appearing in more than 50 countries from Albania to Zambia.

MTI participated in 141 media interviews related to its projects and activities in 2014. It is impossible to calculate metrics for every placement because news stories are normally picked up by several other media and repeated into their own markets. Therefore, actual news coverage is assumed to be significantly higher. Sample news outlets included Associated Press; ABC News; The Hill; CBS Radio; Active Transportation Canada; Washington Post; Homeland Security Newswire; Mass Transit; Los Angeles Times; New York Times; San Francisco Chronicle; Railway Technology, and more.

## MTI WEBSITE PERFORMANCE METRICS

Fiscal Year	FY1998-2006	7/1/07-12/31/13	CY 2014
Average Monthly Uses	173,985	338,515	276,554*
Average Monthly Downloads	~5,000	102,166	116,020

\* The metric reporting system for web site uses was refined in 2014 to fit the latest standards.

## OTHER SUCCESSES

### Social Media

During the 12-month reporting period, MTI and MNTRC enjoyed expanded social media presence. The Facebook fan page has grown from 504 followers in January 2014 to 641 followers by the end of the year. At the start of 2014, MTI's LinkedIn site had 473 followers. At the end of the year, the site had 656 followers.

MTI's Twitter account, @MinetaTrans, has attracted a growing audience. As of January 2014, the account had 1,387 followers. At the end of the year, that had grown to 1,782.

### Memoranda of Cooperation

MTI is helping to create more cooperation among nations through its growing list of Memoranda of Cooperation (MOCs) with international universities. Until September 2014, MTI hosted Shintaro Terabe, PhD, who was in residence for one year to expand his knowledge about US high-speed rail systems. His home base is in Tokyo at the University of Tokyo, with which MTI has an MOC.

Current MOCs are with Spain's University of Cordoba, Sweden's KTH Royal Institute of Technology, Italy's University of Pisa, and Japanese Railway East's research laboratory.

At the close of 2014, MTI had initiated its hosting for three South Korean transit police officers, who requested training from US transit agencies. MTI negotiated training with several agencies around the US. That training was scheduled to continue until March 2015.

### Scholarship and Awards Banquet

Each June, MTI holds a banquet to raise scholarship funds, to award the Garrett Morgan Symposium winners, and to hood the graduates from the MSTM program. On June 21, 2014 the banquet attracted approximately 350 transportation leaders, corporate donors, and friends and families of the graduates.

### Additional Outreach

MTI directors and faculty presented at numerous conferences, symposia, and other gatherings. They also have been interviewed by news media. For example, Asha Weinstein Agrawal, director of MTI's National Transportation Finance Center (NTFC), has spoken on her finance research the National Tax Association's 10th Annual Conference. She also has provided expert testimony at a town hall session organized by California State Senator Jim Beall. Scott Anderson, PhD, also presented his finance research at the 93rd Annual Meeting of the Transportation Research Board.

NTFC research and researchers also have been featured in industry news media outlets including the *Washington Post*, *Portland Press Herald*, *The Hill*, *Progressive Railroading*, and *Fleet Owner*.

Additional details are available in each director's respective section of this report.



# EDUCATION



**Peter Haas, PhD**  
Director of Education  
[Peter.Haas@sjsu.edu](mailto:Peter.Haas@sjsu.edu)

A member of the faculty in MTI's Graduate Transportation Management Program (GTMP) since 1999, Dr. Peter Haas was appointed Education Director in 2001. He earned a PhD in political science (public policy and public administration) from the University of North Carolina at Chapel Hill in 1985. He is a former director of the SJSU Master of Public Administration Program, and he has consulted at every level of government and for nonprofit agencies. Dr. Haas has authored numerous reports and other publications in the field of transportation and co-authored the text, *Applied Policy Research: Concepts and Cases*. A Fulbright Scholar, he also regularly contributes to MTI research projects in various subject areas.



**Vivianne Ferea**  
Education Program Assistant  
[Vivianne.Ferea@sjsu.edu](mailto:Vivianne.Ferea@sjsu.edu)

Vivianne Ferea was appointed to the position of Education Program Assistant (EPA) in 2000. As EPA, she is the primary contact for marketing and administration of the Graduate Transportation Management Program. Among her many responsibilities are continued efforts to recruit for the certificate and master's programs, to revise and maintain the Education portion of the MTI website, and to plan and schedule courses. Ms. Ferea received her BS in business marketing from the University of California, Davis. Her studies in public relations and experience in media sales are a valuable resource to help her promote the program's continued growth and success.



# EDUCATION PROGRAM GOAL

The Graduate Transportation Management Program was created to develop and administer a multidisciplinary, state-of-the-art program by way of videoconferencing and Internet technologies. It consists of coursework and experiential learning that provides students the skills and knowledge to manage and lead transportation systems.

## COURSES OFFERED

In the spring 2014 term, the Graduate Transportation Management Program offered seven courses. Class sites follow each course listing below:

### Spring 2014

**MTM 202:** Introduction to Transportation Funding & Finance

**MTM 226A:** Emergency Management Issues for Transportation Professionals

**MTM 226B:** Security Issues for Transportation Professionals

**MTM 217:** Leadership and Management of Transportation Organizations

**MTM 246:** High Speed Rail Management

**MTM 283:** Independent Research

**MTM 290:** Strategic Management in Transportation

### Fall 2014

**MTM 201:** Fundamentals of Transportation

**MTM 203:** Transportation Markets and Business Development

**MTM 214:** Transportation Policy and Regulation

**MTM 215:** Transportation Systems and Development

**MTM 250:** Environment and Transportation

**MTM 246:** High Speed Rail Management

**MTM 236:** Contemporary Issues in Transportation

## ENROLLMENT TREND

During Calendar Year 2014, the program recorded 238 graduate student enrollments. These enrollments were associated with more than 139 individual, active students, including 54 matriculated Master of Science in Transportation Management students. A record 21 program graduates were recognized on June 22, 2014.



# MSTM CLASS of 2014

The faculty and staff of MTI and the Lucas Graduate School of Business were proud to present the graduating class of 2014 at the Annual MTI Board of Trustees Awards Banquet and Convocation on June 22, 2014. Twenty-one students earned their MSTM degrees, each of whom completed 30 units of coursework, including an original research paper, while meeting the duties of full-time professional employment.

The following 21 MSTM graduates were hooded during MTI's annual scholarship banquet.

Ed Alegre  
Naomi Armenta  
Michael Brinton  
Leslie-Lara Enriquez  
Jasjit Gill

Latosha Hardage  
Mark Keisler  
Kathryn Magee  
David Man  
Luis Melendez

Jason Miller  
Jeffrey Purdie  
David Schlesinger  
Michael Seden-Hansen  
Jacob Simmons

Deanna Smith  
David Van Dyken  
Jeffrey Windham  
Sean Yeung

## June 2014 Graduate Certificate in Transportation Security Management Recipients

Michael Brinton  
Latosha Hardage  
Luis Melendez  
James Riley  
Jeffrey Windham  
Sean Yeung

## June 2014 Graduate Certificate in High-Speed Rail Management Recipients

Gary Crandell  
Ryan Greenway  
Kathryn Magee  
Jeffrey Windham

## June 2014 Graduate Certificate in Transportation Management Recipient

Jason Campbell

The 12-unit CTM and CSTM programs are rigorous and intense, each consisting of four core courses from the MSTM program. Many students earn their certificates as a significant step toward achieving their MSTM degrees.



### 2014 STUDENT OF THE YEAR,

Naomi Armenta, with MTI Education Director Peter Haas, PhD, and US Transportation Secretary (ret.) Norman Mineta.



# MSTM CLASS of 2014

## GRADUATE RESEARCH PAPERS

All graduate students in the MSTM program are required to produce an original, properly formatted research paper reflecting what they have learned during their regular coursework. The variety of topics investigated by this year's class demonstrates the broad transportation areas that their graduate education has covered.

These papers are available upon request:

**Ed Alegre**—Local Transportation Sales Tax Measures: How to Maintain Public Support and Communication

**Naomi M. Armenta**—Transportation Options and Mode Choice for Seniors and People with Disabilities in Alameda County

**Michael Brinton**—Virtualization and Cloud Computing: An Analysis of Technology at Transportation Planning Agencies in California

**Jasjit Gill**—Is Ramp Metering an Effective Traffic Management Strategy? Case of Solano 80EB

**Latosha Hardage**—Metropolitan Transit System Bus Operator Performance Metrics Strategy Assessment for Bus Operations

**Mark Keisler**—Stormwater: The Intersection of the Clean Water Act and Highways

**Leslie Lara-Enriquez**—Does Bike to Work Day Encourage Travel Behavior Change?

**Kathryn MaGee**—Hard Shoulder Running Lanes in the Bay Area: Identifying Potential Locations and Design Best Practices

**David Man**—Transit Signal Priority: Institutional Challenges and Promoting Expansion

**Lou Melendez**—Capital Construction Support Cost Estimation: A Search for a New Methodology

**Jason Miller**—The Cost Effectiveness of Park and Ride Lots

**Jeffrey Purdie**—Construction Manager General Contractor Project Delivery: An Alternative Method for Designing and Constructing Surface Transportation Infrastructure Projects

**Jacob Simmons**—Bus Route Span of Service Changes: Ridership Impacts on Unaltered Hours

**James Riley**—How Can Driving Under the Influence Driver Collisions Be Uniformly Incorporated into Collective Accident Investigations by Caltrans?

**Dave Schlesinger**—Positive Train Control: Barriers and Solutions to Interoperability

**Michael Seden-Hansen**—Transit Agency Consolidation: Identifying the Factors in Completed Transit Agency Consolidations and Assessing Consolidated Agency Performance

**Deanna Smith**—Beyond the Requirements: Establishing Citizen Advisory Committees to Enhance the Public Hearing Process and Increase the Social Capital of Small Urban Public Transit Operators

**E. Ward Thomas**—Are the Transportation Demand Management (TDM) Programs and Best Practices of California University Employers Working?

**Ron Tollison**—An Evaluation of Caltrans Constructability Review Program

**Jeff Windham**—Private Sector Involvement in Passenger Rail in the United States

**David Van Dyken**—The New Active Transportation Program and Its Potential to Help Solve First and Last Mile Transit Connectivity Gaps

**Sean Yeung**—A Primer on TIFIA

## SELECTED STUDENT AND ALUMNI SUCCESSES

- **Naomi Armenta**—(MSTM, 2014) was awarded the MTC's Doris W. Kahn Accessible Transportation Award.
- **Rachel Donovan**—(MSTM, 2011) was named Alameda County "Bike Commuter of the Year" by the Bay Area Bike Coalition.
- **Ron Tollison**—(MSTM, 2014) was a recipient of the 2014 "Professional Engineer in California Government" scholarship program.
- **Connie Raya**—(MSTM student) won a WTS Scholarship.
- **Brandi Childress**—(MSTM, 2008) APTA Member of the Year - Santa Clara Valley Transportation Authority.
- **Sarah Swensson**—(MSTM, 2013) is now Manager of Media Relations at the Toll Roads (Transportation Corridor Agencies).

## SELECTED PROGRAM OUTREACH AND FACULTY ACHIEVEMENT

- Faculty member Rod Diridon was honored through induction into the 2014 APTA Hall of Fame.
- Faculty member Gary "Mr. Roadshow" Richards won an Award of Merit in 2014 from the MTC.
- Faculty member Peter Haas and alumnus Michael Lichty (MSTM, 2011) co-authored a recent article in the Journal of Public Transportation.
- Education Program Director Dr. Peter Haas appeared at a number of public transportation meetings and conferences as part of the ongoing effort to publicize the MSTM program and to recruit students. Dr. Haas continues to serve on a number of committees, including as co-chair of the Student Award Committee for the Council of University Transportation Centers and as a member of the Board of Regents of the Eno Transportation Foundation.

## SAFETEA-LU PERFORMANCE METRICS: EDUCATION

	2007-08	2008-09	2009-10	2010-11	7/1/11-12/31/12*	CY 2013	CY 2014
MTI's MSTM Enrollment	44	45	67	63	65	69	78
MTI's MSTM Graduates	15	19	14	14	17	10	21

\* Includes MNTRC partner participation. Note that from July 1, 2011 until December 31, 2012, a transition was made from a Fiscal Year to a Calendar Year. Therefore, this period includes 18 months of performance.

# APPENDICES



## A. FINANCIAL ILLUSTRATIONS

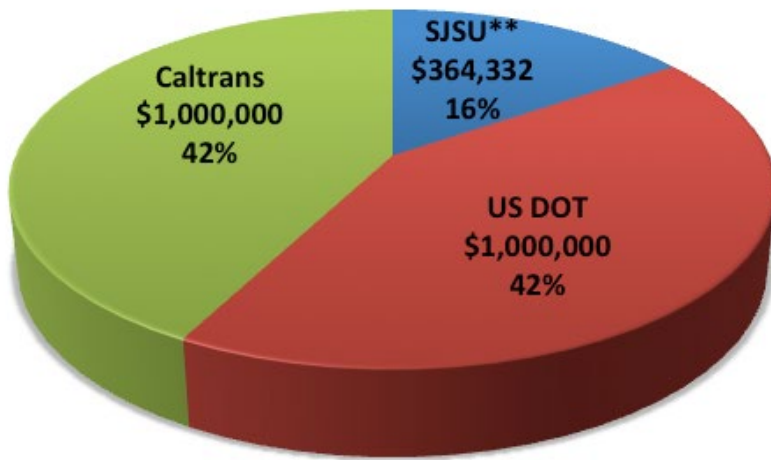
## B. ORGANIZATIONAL CHART

## C. RESEARCH ASSOCIATES POLICY OVERSIGHT COMMITTEE

## D. ACKNOWLEDGMENTS

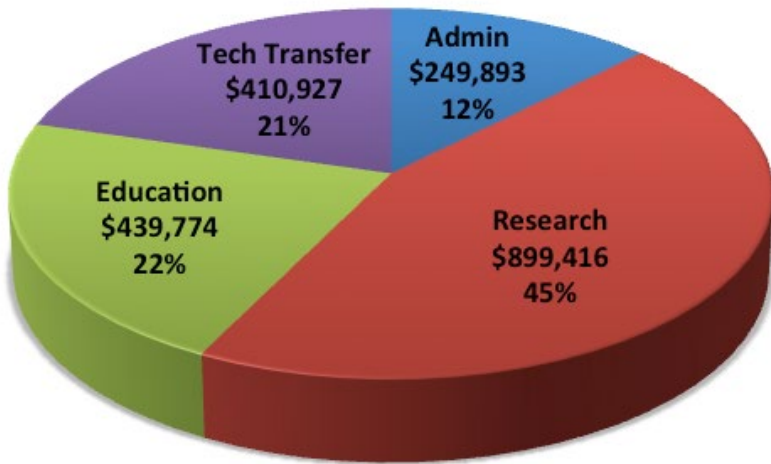


## APPENDIX A FINANCIAL ILLUSTRATIONS



### Illustration of Revenue

Mineta Transportation Institute  
CY 2014 Revenue = \$2,364,332\*



### Illustration of Expenditures

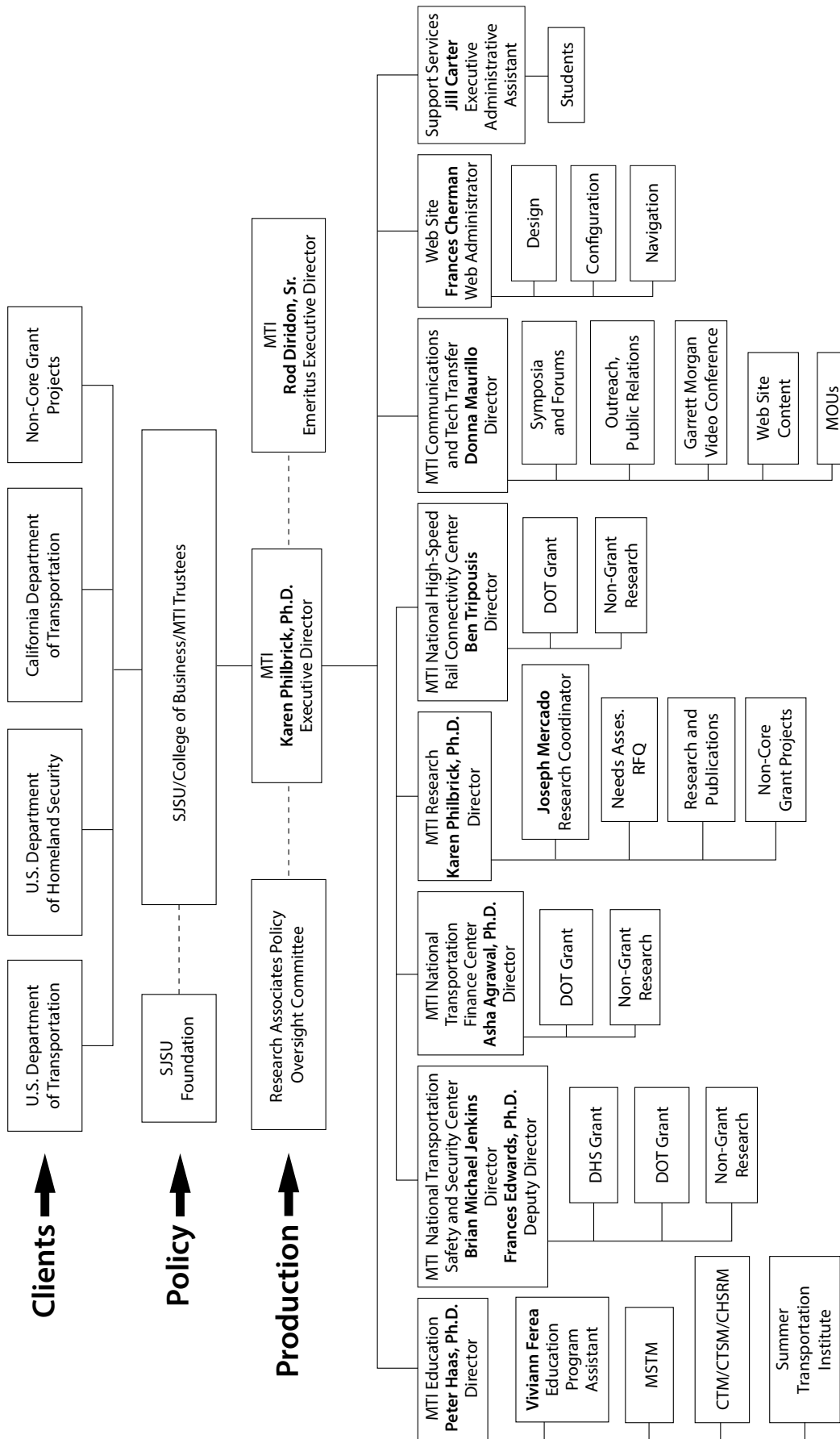
Mineta Transportation Institute  
CY 2014 Expenditures = \$2,000,010

\* In addition to MTI's grant revenue, the eight other MNTRC partners have been allocated a total of \$1,493,000 for 2014 research, education, and tech transfer projects conducted at their own university centers under the auspices of the Consortium.

\*\* MTI enjoys substantial financial and administrative support from SJSU and the SJSU Research Foundation, as do the partner universities from their administrative structures. For example, in recognition of the essential impact that MTI has on research, education, and workforce development, and to demonstrate the University's commitment to the success of MNTRC, SJSU agreed to reduce the Facilities and Administration (F&A) rate from 43.4% to 31%. Similarly, Consortium partners secured commitments for F&A rates of 31%. Signed letters of commitment from all University partners are available upon request.

# APPENDIX B ORGANIZATION CHART

## Mineta Transportation Institute (Created by Congress in 1991) in the College of Business at San Jose State University



## APPENDIX C

# RESEARCH ASSOCIATES POLICY OVERSIGHT COMMITTEE (RAPOC)

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- **Nicole Longoria**, California Department of Transportation
- **Bob O’Laughlin**, Federal Highway Administration
- **Ted Matley**, Federal Transit Administration, Region IX
- **Karen Philbrick, PhD**, MTI Executive Director and Director of Research

## APPENDIX D

# ACKNOWLEDGEMENTS

The MNTRC and MTI Board of Trustees and staff gratefully acknowledge the administrators and staff of the Office of the Assistant Secretary for Research and Technology (OST-R) of the US Department of Transportation and of the Caltrans Division of Research, Innovation, and System Information (DRISI) for their support throughout the year. Thanks to Assistant Secretary for Research and Technology Greg Winfree, Director of Research, Development, and Technology Kevin Womack, PhD, and Amy Stearns and Robin Kline, the MTI/MNTRC liaisons. MTI is also grateful to Caltrans Director Malcolm Dougherty, Caltrans Chief of DRISI Coco Briseno, and UTC liaisons Christine Azevedo, Patrick Tyner, and Nicole Longoria. We give a special thanks to the Caltrans VTC Department, especially to Cherice Luckey, without whom MTI would not have been able to offer the MSTM to so many graduate students statewide.

## San Jose State University

### San Jose State University Research Foundation

The Mineta Transportation Institute operates under the College of Business and the Lucas Graduate School of Business as part of San Jose State University (SJSU). The University’s College of Business, Dr. Martin Luther King, Jr. Library, and the SJSU Research Foundation provide valuable support to MTI. On behalf of the University, the College of Business Dean oversees MTI, particularly the education program. Thanks to SJSU President Mohammad Humayon Qayoumi, Dean of the College of Business Dr. David Steele, and their respective staffs for supporting MTI.

The SJSU Research Foundation manages MTI’s funds and oversees administrative areas such as human resources. Thanks to Office of Sponsored Programs Director Jeanne Dittman and staff Cheree Aguilar-Suarez, Steve Barranti, Steve Constantine, Lan Duong, Ranjit Kaur, Ha Ngo, Michele Vaccaro, Rick Yoneda and the many others who support the MTI programs.

Research Librarian Diana Wu, LINK+ Coordinator Lindsay Schmitz, and InterLibrary Services Coordinator Danny Soares assure that the Martin Luther King, Jr. Library provides excellent service to those who use the MTI collection, including faculty, students and the community. **Special thanks to each of them.**

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