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## Center Theme

As originally designated by Congress in ISTEA in 1991 and reaffirmed by the Institute's Board of Trustees after reauthorization in TEA-21 in 1998, the Mineta Transportation Institute (MTI) undertakes research, education, and technology/information transfer programs relative to the policy control and management of all surface transportation modes. In short, MTI produces case studies of the best examples of surface transportation policy and management activities in the world, accumulates those into peer-reviewed publications, and communicates those "best practices" to MTI's professors, students, and the leaders of the nation's transportation community.

During the 1991 ISTEA and 1998 TEA-21 debates, Congress strongly expressed the desire to assure the international competitiveness of the nation's transportation systems. Because of the availability of much larger motor vehicle fuel taxes in other industrialized countries, the U.S. will not be able to outspend the competition, so we must instead outsmart them. MTI's objective is, therefore, to identify through research, to teach through education, and to broadly disseminate through technology/information transfer programs the best transportation practices in use throughout the world. MTI's work encompasses all modes of surface transportation, including the interface between modes.

MTI is organized by function, with principal staff operating in each of four departments: Administration, Research, Education, and Technology/Information Transfer.



# A Note from the Executive Director



The Mineta Transportation Institute (MTI), formally known as the Norman Y. Mineta International Institute for Surface Transportation Policy Studies, has transformed itself since its designation in the Intermodal Surface Transportation Efficiency Act (ISTEA) of 1991 as a policy research center attached to the College of Business at San José State University (SJSU). At the end of ISTEA, with a total annual budget of \$500,000, MTI had four research projects in process and was offering a newly accredited Master of Science in Transportation Management (MSTM) and graduate Certificate in Transportation Management (CTM), with fewer than a dozen students enrolled. Though a website existed, funding shortages precluded frequent updates.

In 1998, a four-year Transportation Equity Act for the 21st Century (TEA-21) grant for \$750,000 per year was authorized for MTI through the U.S. Department of Transportation's Research and Special Programs Administration (RSPA). A matching grant from the California Legislature was provided through the California Department of Transportation (Caltrans). TEA-21 required that the 17 Group B and C University Transportation Centers (UTCs) compete, with 10 to be selected to continue at \$1 million each per year for the final years of the authorization. After an extremely competitive application and interview process, MTI was chosen as one of the 10 continuing Centers of Excellence. Caltrans matched the federal grant, confirming the state's ongoing commitment to MTI.

During this evolutionary period, MTI's ISTEA surface transportation policy and management legislative mandate was honored and became focused on three specialties: 1) security and emergency response management, 2) finance, and 3) land use, transportation, and environment interrelationships. MTI has become a preeminent resource to the national transportation community on these three priority topics, although other issues are studied when requested by the designated research needs assessment liaisons with U.S. DOT Western Resource Center, Caltrans, and the MTI Trustees. These same issues were emphasized in the SAFETEA-LU competition document that MTI submitted in August 2006. The institute was successful in the competition and selected as one of 10 Tier 1 UTCs, reflecting MTI's status as one of the top UTCs in the country.

#### Research

Since mid-1999, MTI has published 49 peer-reviewed policy research projects and has 24 more under contract and in process. Research supported by the TEA-21 and Caltrans grants engaged 90 of MTI's 172 certified Research Associates (RA), most of whom are Ph.D.s, as well as 113 student research assistants. Significant research and information transfer efforts (local and regional forums, national symposia or summits, etc.), often sponsored by non-grant funds, have also been completed. Research topics are selected annually through a carefully structured needs assessment process involving designated U.S. DOT and Caltrans committees, the internationally prominent MTI Board of Trustees, and other national transportation leaders. The projects and research teams are chosen annually 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 MTI.

#### Education

Sixty-nine California State University accredited Master of Science in Transportation Management (MSTM) degrees have been granted since 1999, eight of which were conferred this fiscal year. Thirty-seven professional Certificates in Transportation Management, requiring completion of 12 core units from the MSTM program, have been conferred. Currently 60 students are enrolled in the MTI MSTM and certificate programs at SJSU. Those students are receiving instruction via the Caltrans 24-site, statewide videoconference network. To support this unique instructional capacity, Caltrans installed a state-of-the-art videoconference origination site for MTI. The student counseling, syllabi, assignments, homework, testing, and a chat room for each class are provided through the education section of MTI's website (http://transweb.sjsu.edu).

These 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 in Business, Criminal Justice, Engineering, Library Science, Political Science, Public Administration, Urban Planning, Psychology, Sociology, and others. A significant number of the students from those programs pursue transportation careers, and many of the professors provide transportation policy research via MTI. Consequently, MTI provides recruitment and scholarship assistance from non-grant funds donated to MTI to selected aspects of those traditional programs.

Prior to the 16th Annual MTI Board of Trustees Scholarship Awards Banquet on June 30, 2007, the MTI Alumni Association, including current students as well as prior MSTM and certificate recipients, met to elect new officers. This association assists MTI in tracking the graduates and offers the opportunity for peer support and networking among the members.

#### **Technology/Information Transfer**

*TransWeb*, MTI's website, has been revamped to make it easier to find MTI publications and research in progress. *TransWeb* has won several national awards and, remarkably, averages more than 5,000 pages downloaded each month.

To promote information transfer, MTI has conducted and published the proceedings of 10 national symposia and summits and eight regional or statewide forums since 1999. Two more national symposia and two more regional and statewide forums will be conducted and published before the end of the coming fiscal year. During the past year, MTI Research Associates and staff have testified before legislative committees, given several dozen speeches and panel presentations on transportation issues throughout the U.S., and conducted over 100 media interviews related to MTI research. Those outreach successes will be summarized in the following sections. In addition, MTI continues to publish The World in Motion. This quarterly newsletter is now distributed electronically via TransWeb.

Finally, MTI continues to provide assistance in the development of five of the new SAFETEA-LU centers. I continue to attend national UTC-related meetings, assist with the negotiation of more UTC support for the U.S. DOT modal administrations, and am chair of the national Council of University Transportation Centers.

#### Staffing

After several years without any changes in the core staff team, this year saw significant turnover. Office Manager Brendan McCarthy resigned in May to devote himself to the pursuit of his master's degree. We are sad to say that MTI lost research and publications assistant Sonya Carter in June when she died unexpectedly following surgery, and web administrator Barney Murray was laid off at the end of the year as a consequence of reduced funding. MTI will hire an office manager and combine two jobs into one to cover the publications and event management functions. The remaining staff members are committed to producing the same high-quality work as before.

Research associate recruitment, concentrating on only the finest Ph.D.-level talent, continues with certification required by RAPOC before the RAs are allowed to work on MTI projects. Note that, though some of the RAs are not located at SJSU, every MTI research team must have at least one SJSU RA and student assistant in order to bring the research knowledge to the university.

#### Conclusion

MTI was honored to be selected as a Tier 1 UTC and will redouble efforts to produce outstanding Master of Science in Transportation Management graduates and research products. The staff embraces this extraordinary opportunity to identify, teach, and share with the nation the world's best surface transportation policy and management practices. Indeed, the U.S. transportation community, with the help of the national University Transportation Center program, will outsmart the competition and prevail in the global geo-economic competition of the 21st century.



## Administration

The Administration Department provides general management and support of areas such as budget control; grant acquisitions and management; personnel functions; facilities support; office management; coordination and support to the Board of Trustees, the Research Associates Policy Oversight Committee and university, state, and federal relations; and internal and external communications.



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#### Honorable Rod Diridon, Sr.

Executive Director

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. Due to term limits, he retired in 1994 after five terms and six times as chair of both the Santa Clara County Board of Supervisors and its transit board. He is the only person to chair the nine-county, 110-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 the governor's appointee to the California High Speed Rail Authority Board and vice chair of the national High Speed Ground Transportation Association. He chaired the American Public Transit Association in Washington DC and was vice chair of the International Transit Association in Brussels and continues as a director. Mr. Diridon chaired the National Association of Counties' Transit and Railroads Committee, advised the Federal Transit Administration, and chaired the Transportation Research Board's Transit Cooperative Research Program.

Mr. Diridon is chair of the national Council of University Transportation Centers. He also serves on the corporate boards of directors of San Jose National Bank and the 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 both a BS and MBA at San José State University, served two combat tours as a naval officer in Vietnam, has been listed in Who's Who in America since 1974, and was recently cited by the International Metro Magazine as one of the 50 who most influenced mass transit in North America in the past century. He has received top awards from APTA, the national High Speed Ground Transportation Association, and others. The area's main train station was renamed the San Jose



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#### **Leslee Hamilton**

Communications Director

A former Peace Corps Volunteer, Leslee Hamilton has extensive administrative and communications experience from her work with environmental organizations, on electoral campaigns, and as former communications director for San José Mayor Ron Gonzales. She has a BA in business economics from UC Santa Barbara. Ms. Hamilton is working to increase the exposure and use of MTI's research products. She is active on numerous community boards and an advocate for improving the accommodation of bicycles on roads and transit.

#### Management

Institute activities are overseen by a prestigious Board of Trustees (see inside back cover) that meets twice a year to provide guidance to staff. MTI's Board of Trustees summer meeting was held on June 30, 2007 and was followed that evening by the 16th Annual MTI Board of Trustees Scholarship Awards Banquet and the graduation of this year's Masters of Science in Transportation Management (MSTM) class. California Department of Transportation Chief Deputy Director Randell Iwasaki and former U.S. Department of Transportation Secretary Norman Mineta gave the commencement speeches to the graduates, elected officials, and transportation leaders who attended. The banquet raises scholarship funds for MTI's MSTM and professional certificates students.

#### **Facilities**

MTI is located at San José State University (SJSU), the oldest and one of the largest of the 23 California State University campuses. Located in downtown San Jose, the campus is in the heart of Silicon Valley. Six full-time staff members, one part-time employee, and five parttime student assistants work in offices provided by SJSU.

#### **Financial Controls**

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**

*California University Transportation Centers* In 1999, encouraged by MTI's executive director, Caltrans created the UTC Cal group consisting of the directors of the California UTCs and Caltrans staff. The group meets three times a year and is hosted by the centers on a rotating basis. Its objective is to avoid unplanned redundancy and to share the best research and education practices. *Council of University Transportation Centers (CUTC)* After serving as vice chair in 2006, MTI Executive Director Rod Diridon was elected chair of CUTC at the June 2007 meeting. For a number of years, Mr. Diridon has worked with the CUTC leadership to increase the coordination between UTCs and state DOTs, and he intends to continue fostering that collaboration. CUTC is also working with RITA on a number of cooperative ventures, including workforce development issues and a national transportation library.

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

During the past fiscal year, MTI has co-sponsored or is in the process of co-sponsoring projects with the following organizations: AAR, AASHTO, APTA, ARTBA, California Business Roundtable, Caltrans, DHS/TSA, FHWA, FTA, FRA, Transit Cooperative Research Program of TRB, Transportation Trades Department of AFL/CIO, California State Automobile Association, San Francisco Bay Area MTC, Commonwealth Club of California, Bay Area Rapid Transit District, Silicon Valley Leadership Group, and others. These partnerships generated attendance and/or financial support for MTI programs and also resulted in substantial outreach and media attention for MTI and UTC efforts. More importantly, MTI research is transferred to the user community.

#### Community Involvement

MTI Executive Director Rod Diridon, Research Director Trixie Johnson, and Education Director Dr. Peter Haas are recognized transportation experts and have extensive contacts in the local, national, and international transportation community. For example, Mr. Diridon is chair emeritus of the California High Speed Rail Authority and a member of several other transportation boards and committees. Ms. Johnson is active in Rotary, is sought after as a speaker on transportation and environmental issues, and serves on several related boards and committees. Dr. Haas, a Fulbright Scholar, is frequently asked to provide expert testimony on both education and transportation topics.

These activities are encouraged by SJSU and the MTI Board of Trustees with the understanding that MTI responsibilities come first and that no MTI funding is used to discharge these duties. MTI and the national UTC programs are always mentioned during their presentations. The benefit conferred to the community is obvious, but these efforts also promote a support network for MTI and the UTC program that has proven to be extremely valuable in terms of program effectiveness, development of jointly-sponsored projects, general outreach, and fiscal support of scholarships for MTI students.

#### Challenges

The Mineta Transportation Institute is committed to continue delivering an excellent graduate education program, producing currently applicable, top quality, and timely research, and engaging in the creative promotion of research results to the transportation community while dealing with the reduction in funding of the SAFETEA-LU grant.

## Research

The Mineta Transportation Institute Research Program involves a diverse and growing number of certified research associates and student research assistants in a wide spectrum of research projects judged by peers and other experts to advance the body of knowledge in transportation policy and management from an intermodal perspective. MTI conducts only directly applicable, not theoretical, research projects, which are selected via a thorough needs-assessment involving the U.S. DOT, Caltrans, and the Institute's board of trustees.





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### Trixie Johnson

Research Director

Ms. Johnson was appointed as research director for the Mineta Transportation Institute in 1999, and until 2007 also managed the Institute's forums and symposia. During this year, the responsibility for events and for security projects was transferred to MTI communications and special projects director Leslee Hamilton. As research director, Ms. Johnson conducts an annual research needs assessment and request for proposals, and she manages projects from the approval process through peer review and final publication. During her tenure, she has managed 80 research projects and 21 events.

Before joining MTI, Ms. Johnson served the full limit of two terms on the San José City Council (1991 through 1998). Recognized as a specialist in land use and the environment, her Council service included two years as vice mayor and several years as the chair of the city's Transportation, Development, and Environment Committee. Her other public service included chair of the Environmental Quality Committee; member of the board of directors for the League of California Cities; vice-chair of the Energy, Environment, and Natural Resources Committee of the National League of Cities; and member of the Bay Area Air Quality Management District Board.

Specifically in transportation, she was a founding board member of the Santa Clara Valley Transportation Authority (VTA), chair of its Congestion Management Committee, and vice-chair of the Caltrain board. She also served on the Legislative Committee of the American Public Transit Association (APTA). Ms. Johnson was Phi Beta Kappa with honors at the University of Utah, earning a BA in history. She received her MA in English from the University of Washington.

#### The People

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 and private sector consultants. The experience and knowledge of individuals from public and private organizations outside academia can bring a "real world" and very practical 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 research methodology, report writing, and rigorous peer review of work prior to publication.

MTI certifies all research associates (RA) prior to their involvement in any project. Certification requires a completed application with references, a résumé, and a sample of published research. The Research Associates Policy Oversight Committee (RAPOC), composed of the seven department heads or representatives of the SJSU academic departments with which MTI works, reviews the applications and recommends certification where appropriate. Non-SJSU RAs can hold simultaneous status as SJSU adjunct professors during the term of their certifications.

### Projects

The annual project selection begins with an extensive and structured needs assessment process by staff, Caltrans, the U.S. DOT Western Resource Center, and MTI's Board of Trustees (BOT). On completion of the needs assessment, MTI issues a formal Request for Proposals (RFP) to the MTI RAs and broadly announces the availability of the funding opportunity beyond the MTI community. RAPOC, Caltrans, and a representative from the U.S. DOT subject all qualified proposals to peer review. The reviews are then discussed in detail at a selection meeting. Few proposals are recommended for funding as submitted; many are tentatively selected subject to revision by the principal investigator, and others are rejected. The selections are also referred to the BOT for comment.

Following selection, research proposals and budgets are refined and revised according to RAPOC's direction. In some cases additional review by the committee occurs before the final prospectus and budget are written and approved by Caltrans and the SJSU Foundation. That approval marks the real beginning of the research project, which is then entered into the TRIS Research in Progress system and posted on the MTI website as a Project Description.

This research needs assessment, project identification, RFP, proposal review, research method refinement, and project selection process is time consuming but guarantees the identification of needed research projects and selection of an optimal research team and methodology.

MTI also offers a seed grant program for amounts up to \$5,000. The program's dual purpose is to interest new SJSU faculty in the MTI research program and to facilitate the development of their first full-fledged research proposal. Most seed grants will not produce a publication, though those that determine that a full proposal is not warranted are encouraged to produce a white paper documenting the research. MTI emphasizes policy and management research, rather than technical research, and seeks projects that improve the development and operation of the nation's surface transportation systems, improve transportation decision making, and ensure the global competitiveness of the United States. MTI selects only research products with immediate and practical value for transportation officials and practitioners. To that end, MTI, at the direction of the BOT, has adopted in priority order the following areas of emphasis:

- Safety and security of transportation systems
- Financing of transportation infrastructure and operations
- Transportation, land use, the environment, and the economy interrelationships
- Transportation planning and policy development
- Inter-modal connectivity and integration
- Sustainability of transportation systems
- Collaborative labor-management issues and strategies
- Transportation decision making and consensus building

#### **Transfer of Research Information**

All research is professionally published and printed following successful peer review, author revisions, and editing. Additionally, every new report is available on MTI's website, http://transweb.sjsu.edu. MTI has developed a number of other approaches to information transfer, including sponsoring symposia, funding post-research travel for researchers to address professional conferences such as TRB, providing financial incentives for publishing in peer-reviewed journals, and developing cost-effective formats to present research summaries for distribution

to practitioners.

#### **Research Program Accomplishments**

#### A Full and Varied Program

MTI contracted for 10 new research projects in this fiscal year. These joined 20 projects already in progress. Six projects moved to completion during the year, with five new projects selected to begin early in the next fiscal year to bolster MTI's large and varied research portfolio.

A new RFP was issued in February, and 10 qualified proposals were submitted for peer review to the RAPOC committee, Caltrans, and representatives of the U.S. DOT in the Western Resource Center. After a rigorous discussion, the group selected five proposals to pursue in the coming year (2007-2008).

## MTI Responds to Special Requests for Research

MTI is pleased that both our federal and state sponsors look to the institute to help them address special research needs. Sometimes MTI is able to do the research as part of the UTC grant, but other requests are managed under separate contracts. The requests demonstrate an appreciation for the quality of the institute's work and ability to undertake specific projects.

## Transportation Financing Opportunities for the State of California

#### Project #2427

#### Principal Investigator: Asha Weinstein, Ph.D.

The project was financed by Caltrans and completed in this fiscal year. The publication and the principal investigator were featured at the fall symposium, Norman Y. Mineta National Transportation Policy Summit: Transportation Finance – Tough Choices Down the Road discussed in the Information Transfer section of this report.

#### Document and Evaluate a Contraflow Planning Process **Project # 2626**

#### Principal Investigator: Frances Edwards, Ph.D.

Caltrans requested an evaluation and documentation of the planning for a contraflow exercise conducted in Fresno. The exercise was undertaken following the Hurricane Katrina and Rita disasters, which raised the issue of contraflow capabilities in California.

## Motor Carrier Security Project #2627

Principal Investigator: Brian Michael Jenkins Field Research Team Leader: Bruce Butterworth Caltrans funded this project by MTI's National Transportation Security Center in response to the tanker crash in April 2007 that destroyed a Highway 580/880 interchange. The research examines issues related to potential accidents or intentional sabotage involving tankers hauling hazardous materials. Such events could be a threat to the state's economy.

## Security Gap Analysis NCHRP Project 20-59 (25)

*Principal Investigator: Peter Haas, Ph.D.* This research provided an assessment of the five-year security research program funded by NCHRP, including identification of the gaps remaining and a prioritized program for the next three years of transportation security and emergency response research. The report provides guidance to the American Association of State Highway and Transportation Officials' (AASHTO) Special Committee on Transportation Security (SCOTS).

MTI continues to work with the Caltrans Aeronautics Division to explore potential research, building on the two projects already in the portfolio. A small seed project by Dr. Wenbin Wei reviewed the availability of data for potential research on the economic value of California-generated air cargo (see Completed Research section). The second, in cooperation with the Western Transportation Institute at Montana State University, seeks to create a better weather reporting system for pilots using small airports or flying in remote areas. The weather information would combine the normal air weather systems with those used by the highway division of Caltrans, modifying the reports for use by pilots. Caltrans deferred the research to the coming fiscal year. These and other research possibilities are just the beginning stages of a fruitful partnership with the Caltrans Aeronautics Division, now headed by Mary Frederick, an MTI Master of Science in Transportation Management graduate and former student of the year.

MTI's National Transportation Security Center (NTSC) worked on three projects during this year. Research continues on the case studies of the most recent transportation terrorist attacks, but the second portion of that study dealing with random searches of rail passengers has been published and provided the basis for MTI's Fourth National Transportation Security Summit (discussed in the Information Transfer section of this report). Following his participation in the summit, Transportation Security Administration deputy administrator Robert D. Jamison included some of the findings in a presentation to the International Working Group on Land Transport Security in Paris. Brian Michael Jenkins and Bruce Butterworth have started a special study for Caltrans following the tanker disaster in April 2007 that destroyed the Highway 580/880 interchange in Oakland, and Dr. Frances Edwards and Dan Goodrich performed an evaluation of a contraflow planning exercise for Caltrans.

Edwards and Goodrich both presented papers at the American Society for Public Administration (ASPA) annual meeting; Edwards' paper was "Collaboration for Emergency Management at the Local Government Level," and Goodrich's was "Maritime Security." Edwards received the Petak Award for the best paper delivered at the prior conference. Former Transportation Secretary and MTI Founder, Norman Y. Mineta received the Lawrence J. Truitt Award from the Transportation Section of ASPA and also spoke at the conference.

The Los Angeles Times (September 4, 2006) featured MTI National Transportation Security Center director Brian Michael Jenkins' role in designing and overseeing a complex scenario for ten of the region's leading public officials and counterterrorism experts, guiding them through an exercise that tested both "their personal mettle and the region's systems for investigating and reacting to a deeply destabilizing threat."

Dr. Richard Schneider, professor of urban and regional planning at the University of Florida, requested and received permission to reprint selected figures and tables from MTI's report, Designing and Operating Safe and Secure Transit Systems: Assessing Current Practices in the United States and Abroad," in a forthcoming book on crime prevention in the built environment. In requesting permission, Dr. Schneider said the report, researched and written by a team led by Dr. Brian Taylor, is an "extraordinarily important work that deserves wide dissemination among planners urban designers and policy makers at all levels."

#### **Focus on Finance**

MTI's most active post-research team this year hit the air waves, the conference circuit, and the pages of journals. Financing California's future transportation needs and an in-depth analysis of what the public will support, the subject of a special study done for Caltrans and published this year (see above), attracted attention far beyond the state's borders. PI Asha Weinstein and team member Jennifer Dill debuted the report in early August at the First International Conference on Funding Transportation Infrastructure in Banff, Alberta, Canada. The report also generated a paper for presentation at the Transportation Research Board (TRB) annual meeting in January 2007, a workshop that Dr. Weinstein was asked to organize and chair. The report served as the focus for the MTI fall symposium on transportation finance (covered in the Information Transfer section of this report) at which Dr. Weinstein presented a short segment of the research.

The California Senate Committee on Transportation asked for a white paper to be presented to the National Surface Transportation Policy and Revenue Commission in February. Senator Tom Torlakson's office requested a copy of Dr. Weinstein's paper to assist in writing legislation. Local radio stations featured Dr. Weinstein (an hour each on KQED public radio and KGO, the largest audience station for morning listeners in northern California). An article based on the report, "How to pay for transportation? A survey of public preferences in California," is scheduled for publication in Transport Policy and is currently available online at ScienceDirect. Financing transportation infrastructure, maintenance, and operation will be an increasing focus of MTI research in the coming years.

## TRB Annual Meeting Participation

TRB presentations of MTI research by MTI research associates and students reached an all-time high this year. Additionally, several other research associates presented non-MTI research.

> • Asha Weinstein and Jennifer Dill teamed up for more than just the funding session. They also presented work from "How Far, by Which Route, and Why? Spatial Analysis of Pedestrian Preference," and the paper for this session was selected as an outstanding paper of the year by the TRB Pedestrian Committee. The team also participated in a poster session dealing with crosswalks, walking speeds, pedestrian safety and planning issues. This particular report also led to radio appearances (KCBS) by Dr. Weinstein, press releases by the University of Oregon (a subcontractor for the research), placement on Planetizen, and coverage in the Eugene campus paper. Dill, Weinstein, and PI Marc Schlossberg fielded many press and professional contacts from around the world as a result of the publicity.

Dr. Dill participated or was featured in six TRB sessions, most focusing on bicycle travel, including presiding at the Bicycle Transportation Committee and Bicycle Transportation Subcommittee meetings.

Allison de Cerreño and Shishir Mathur presented their paper "High-Speed Rail in the United States: Can the Dream be Realized?" at a session sponsored by the AR0101 Intercity Rail Passenger Systems Committee. Dr. de Cerreño also served as secretary of the committee this past year, but will continue only as a committee member because of the increased duties associated with her appointment as director of the Rudin Center in the Robert F. Wagner Graduate School, New York University.

- Susan Shaheen and Caroline Rodier featured "Video Transit Training for Older Travelers: Case Study of Rossmoor Senior Adult Community, California" in a session focusing on public transportation marketing through research and planning.
- Robert Johnston and Shengyi Gao reflected a portion of their current MTI work in a poster, "Exploring Causal Connections Among Job Accessibility, Employment, Income, and Automobile Ownership Using Structural Equations Modeling." Pat Moktarian, a University of California, Davis colleague, was a co-author. This continues to demonstrate the practical applications of the MTI-funded series of modeling studies by Johnston and his graduate students. Dr. Gao is following in the footsteps of former Johnston students Caroline Rodier and Michael Clay, who went on to become MTI RAs. Johnston also reported on the UPlan and PECAS CA projects to the Integrated Modeling Subcommittee during the meeting. MTI funding of the early studies that led to these models has leveraged more than \$2,000,000 in additional funding to apply integrated models in California. Deployment of academic research products is always an issue, and MTI is proud that this string of research projects shows such practical promise.

MTI encourages researchers to present their work at conferences and to print in journals or books. Several past reports and work by SJSU professors moved to a more public realm in the past year. Last year Dr. Jonathan Levine published Zoned Out: Regulation, Markets, and Choices in Transportation and Metropolitan Land Use, which started with an MTI project in 2002. This year Levine presented the book as a featured luncheon speaker at the 2007 Center for Transportation Studies (CTS) Research Conference at the University of Minnesota.

Dr. Daniel Hess has prepared two manuscripts based on his MTI study, Barriers to Fixed-Route Public Transit for Older Adults. One has been accepted for presentation at the Access to Destinations conference in August 2007, also sponsored by CTS, which plans a publication including the conference papers. The other will be submitted for publication to Health and Place or Journal of Aging and Physical Activity.

MTI worked with Caltrans to produce a director's policy and handbook designed to assist staff working on Bus Rapid Transit (BRT) projects in their districts. Based on that work, MTI was invited to present at the New York ITS annual conference. Though schedules were not compatible, the request was the beginning of MTI's involvement with the implementation of the work. When Caltrans released the policy and the handbook, research director Trixie Johnson was invited to participate in the internal meeting to plan an implementation strategy and program.

New SJSU faculty member and MTI RA Dr. Triant Flouris presented a paper on "Safety Comparisons in Scheduled U.S. Airline Operations" to the annual conference of the University Aviation Association in Anchorage, Alaska in late September. The resulting paper has been selected for publication in the Collegiate Aviation Review journal. Dr. Flouris was also elected to the board of trustees of the association. Dr. Asim Zia, another new faculty member and RA, presented a peer-reviewed paper titled An Evaluation Framework for Indirect Source Review [ISR] Programs: Current Controversies and Future Prospects at the Air and Waste Management Association annual meeting in Pittsburgh in a session on transportation, land use and air quality.

Several research associates have received awards at SJSU this past year, including Dr. Shishir Mathur, who received a Provost's Award for Service Learning. Dr. Kenneth C. Gehrt, Dr. Aharon Hibshoosh, Dr. Stan Malos, Dr. Taeho Park, and Dr. Mahesh Rajan were recipients of Lucas Fellowships from the College of Business.

Research associate Dr. Anne Lawrence was named a Fellow of the North American Case Research Association at their annual meeting in October. She is one of only 23 Fellows honored in the 26-year history of the association, for which she has served as president, president of the advisory council, and associate editor of the Case Research Journal.

The economics and business librarian assigned to MTI and transportation issues, Diana Wu, has again received several honors, including the Emerald Research Grant from the American Library Association, a nationally competitive award. She also presented a paper on information technology management and Sarbanes-Oxley compliance at the SAP Curriculum Congress in Vancouver, Canada.

#### **MTI Research Director Activities**

MTI directors Trixie Johnson and Rod Diridon served as advisors to a major SJSU effort, CommUniverCity, which brings together the community, the university, and the City of San José in cooperative efforts to improve neighborhoods, enable community-based planning and action, and develop leadership in challenged parts of the city. The specific project centered on planning for an area that will be home to a major BART (Bay Area Rapid Transit) station when the system eventually expands to San Jose. MTI's work on transit-oriented development, BRT, and transportation in general provided considerable food for thought to the university faculty leading the effort. Ms. Johnson joined the university members of the group when they received an award for their efforts at the annual banquet of Neighborhood Housing Services.

Ms. Johnson again returned to the classroom for sessions with an environment and politics class and a graduate class in transportation planning for the Department of Urban and Regional Planning. She also worked with that department on their graduation celebration as a member of the advisory committee.

#### MTI Research Program Loses a Valuable Team Member

In June research program and publication assistant Sonya Cardenas died suddenly following routine surgery. For more than six years she had played a major role in the program, accomplishing myriad detailed tasks that assured people were paid, that contracts were current, that reports received a rigorous peer review process, and that MTI published well-edited and professional reports, to list only a very few of her many responsibilities. She filled a new position and built it into a critically important part of the institute. The designated tasks were only a part of her role. When she saw something wasn't working, she offered solutions and assumed even greater responsibilities to make sure the sol utions were implemented. She enjoyed arranging the wine tasting and the centerpieces for the annual graduation banquet. Sonya was a warm and positive presence, and she is greatly missed.

### 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.

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

Project #9700 Publication #99-2 Principal Investigator: George Gray

Analysis of Policy Issues Relating to Public Investment in Private Freight Infrastructure

Project #9701 Publication #99-3 Principal Investigator: Dan Evans, J.D.

Why Campaigns for Local Transportation Funding Initiatives Succeed or Fail: An Analysis of Four Communities and National Data

**Project #9702 Publication #00-1** *Principal Investigator: Peter Haas, Ph.D.* 

#### NAFTA II: California Border Zone Land Transportation Issues

Project #9802 Publication #01-06 Principal Investigator: George Gray

Land Use and Transportation Alternatives: Constraint or Expansion of Household Choice?

Project #9803 Publication # 01-19 Principal Investigator: Jonathan Levine, Ph.D.

Applying an Integrated Urban Model to the Evaluation of Travel Demand Management Policies in the Sacramento Region

Project #9804 Publication #01-03 Principal Investigator: Robert Johnston Protecting Public Surface Transportation Against Terrorism and Serious Crime: Continuing Research on Best Security Practices

Project #9805 Publication #01-07

**Publication #01-14** Protecting Public Surface Transportation Against Terrorism and Serious Crime: An Executive Overview Principal Investigator: Brian Michael Jenkins

GIS for Livable Communities: Using GIS to Improve Transportation Planning and Community Livability **Project #9806 Publication #01-09** *Principal Investigator: Tom Horan, Ph.D.* 

A New Planning Template for Transit-Oriented Development

Project #9807 Publication # 01-12 Principal Investigator: Dick Nelson

The Travel Behavior and Needs of the Poor: A Study of Welfare Recipients in Fresno County, California

Project #9808 Publication #01-23 Principal Investigator: Evelyn Blumenberg, Ph.D.

Implementation of Zurich's Transit Preferential Pro-

gram **Project #9809 Publication #01-13** Principal Investigator: Andrew Nash

Envisioning Neighborhoods with Transit-Oriented Development Potential

**Project #9810 Publication #01-15** *Principal Investigator: Earl G. Bossard, Ph.D.* 

Best Practices in Developing Regional Transportation Plans **Project #9811 Publication #01-10** Principal Investigator: Donald R. Rothblatt, Ph.D.

Construction of Transit-Based Developments: New Policy Initiatives for Governments Project #9901

**Publication #01-05** *Principal Investigator: Scott Lefaver, DPA, AICP* 

How to Best Serve Seniors on Existing Transit Services **Project #9902 Publication #01-04** Principal Investigator: David Koffman

*Effects of Online Shopping on Vehicular Traffic Patterns* **Project #9903** 

**Publication #01-20** Principal Investigator: Joseph J. Giglierano, Ph.D.

Factors Influencing Voting Results of Local Transportation Funding Initiatives with a Substantial Rail Transit Component: Case Studies of Ballot Measures in Eleven Communities

Project #9904 Publication # 01-17 Principal Investigator: Richard A. Werbel, Ph.D.

Developer-Planner Interaction in Transportation and Land Use Sustainability

Project #9905 Publication #01-21 Principal Investigator: Aseem Inam, Ph.D.

Transit Labor Relations Guide

Project #9906 Publication #01-02 Principal Investigator: Herb Oestreich, Ph.D.

Non-Pricing Methods to Optimize High Occupancy Vehicle Lane Usage

**Project #9908 Publication #01-11** *Principal Investigator: George Gray* 

A Statewide Study for Bicyclists and Pedestrians on Freeways, Expressways, Tunnels and Toll Bridges **Project #9909 Publication #01-01** *Principal Investigator: Thomas C. Ferrara, Ph.D*  Using the Internet to Envision Neighborhoods with TOD Potential

**Project #2001 Publication #01-24** *Principal Investigator: Earl G. Bossard, Ph.D.* 

Applying an Integrated Urban Model in the Evaluation of Travel Demand Management Policies in the Sacramento Region: Year Two

Project #2002 Publication # 01-08 Principal Investigator: Robert Johnston

The California General Plan Process and Sustainable Transportation Planning

Project #2003 Publication #01-18 Principal Investigator: Richard Lee, Ph.D., AICP

Trucks, Traffic, and Timely Transport: A Regional Freight Logistics Profile

Project #2004 Publication #02-04 Principal Investigator: John S. Niles

Increasing Transit Ridership: Lessons from the Most Successful Transit Systems in the 1990s

Project #2005 Publication #01-22 Principal Investigator: Brian D. Taylor, Ph.D.

Using Fiber Networks to Stimulate Transit Oriented Development: Prospects, Barriers and Best Practices **Project #2007 Publication #01-16** *Principal Investigator: Walter Siembab* 

Bridging the Gap: Planning Interjurisdictional Transit Services **Project #2102 Project Cancelled** Principal Investigator: Patrick McGovern, Ph.D., J.D.

Toward Sustainable Transportation Indicators for California **Project #2106 Publication #02-05** *Principal Investigator: Richard Lee, Ph.D.* 

Modeling Long-Range Transportation and Land Use Scenarios for the Sacramento Region, Using Citizen-Generated Policies

#### Project #2107 Publication #04-02

Principal Investigator: Robert Johnston

Verifying the Accuracy of Regional Models Used in Transportation and Air Quality

Project #2108 Publication #02-03 Principal Investigator: Caroline Rodier, Ph.D.

Impact of Ethnic Diversity on Transit: How Do Various Population Groups View and Utilize Various Transit Modes?

#### Project #2109 (An MTI Seed Project) There is no publication for this phase of the project.

Principal Investigator: Richard A. Werbel, Ph.D.

Making Growth Work for California's Communities

**Project #2111 Publication #02-01** *Principal Investigator: Kenneth R. Schreiber, AICP* 

#### Best Practices in Shared Use of High Speed Rail Systems Project #2113

#### Publication #02-02

Principal Investigator: Andrew Nash (Former Title: Shared Use of Rail Infrastructure by High-Speed Rail: Best Practices in Design and Operations)

Saving City Lifelines: Lessons Learned in the 9-11 Terrorist Attacks

Project #2114 Publication #02-06 Principal Investigator: Brian Jenkins

The Future of Transportation Education: A Needs Assessment for the Transportation Management Program at San José State University

#### Project #2201 Publication #03-01

Principal Investigator: Linda Valenty, Ph.D. (Former Title: Needs Assessment: Transportation Management Program at San José State University)

#### Can Consumer Information Tighten the Transportation/Land Use Link? A Simulation Experiment **Project #2202 Publication # 05-03**

Principal Investigator: Daniel Rodriguez, Ph.D. (Former title: Decision Making Influences in Land Use and Transportation: An Experiment on the Impact of Transportation and Housing Information)

Using Spatial Indicators for Pre- and Post-Development Analysis of TOD Areas: A Case Study of Portland and the Silicon Valley

#### Project #2203 Publication # 03-03

Principal Investigator: Marc Schlossberg, Ph.D. (Former Title: A Pre- and Post-Construction Analysis of Transit-Oriented Developments Using Spatial Indicators: A Case Study of Portland and Silicon Valley)

Higher Density Plans: Tools for Community Engagement Project #2204 Publication #03-02

Principal Investigator: Kenneth Schreiber, AICP (Former Title: Assessing the Effectiveness of Tools and Information that Respond to Community Fears and Resistance about the Densification of Communities)

#### The Impact of Telecommuter Rail Cars on Modal Choice **Project #2205 Publication #04-01** *Principal Investigator: James Hayton, Ph.D.*

Designing and Operating Safe and Secure Transit Systems: Assessing Current Practices in the U.S. and Abroad Project #2301 Publication # 05-03

Principal Investigator: Brian D. Taylor, Ph.D. (Former title: System Design for Transit Security)

Verifying the Accuracy of Land Use Models Used in Transportation and Air Quality Planning: A Year-Two Validation Study

#### Project #2302 Publication #05-02

Principal Investigator: Caroline Rodier, Ph.D.

High-Speed Rail Projects in the United States: Identifying the Elements for Success **Project #2304 Publication #05-01** *Principal Investigator: Allison de Cerreño, Ph.D.* 

The Pasadena Gold Line: Development Strategies, Location Decisions, and Travel Characteristics along a New Rail Line in the Los Angeles Region

#### Project #2305 Publication #04-03 Principal Investigator: Hollie Lund, Ph.D.

Bus Rapid Transit: A Handbook for Partners Project # 2426 Publication #06-02

Co-Principal Investigators: Tom Larwin and George Gray (Former title: Bus Rapid Transit Guidebook)



### Projects Completed in the Past Year



High-Speed Rail Projects in the United States: Identifying the Elements for Success – Part 2 Project #2401 Publication #06-03 Principal Investigator: Allison de Cerreño, Ph.D.

In August 2005, the Mineta Transportation Institute issued the report, High-Speed Rail Projects in the United States: Identifying the Elements for Success. The report noted that since the 1960s, high-speed ground transportation (HSGT) has "held the promise of fast, convenient, and environmentally sound travel for distances between 40 and 600 miles." After briefly discussing the different experiences with HSGT between the United States and its Asian and European counterparts, the report reviewed three U.S. cases - Florida, California, and the Pacific Northwest - as a means for identifying lessons learned for successfully implementing high-speed rail (HSR) in the United States. Using a comparative case study approach, this effort adds to the earlier work with three additional cases - the Chicago Hub, Keystone Corridor, and Northeast Corridor (NEC).

Given the early stages of most of these projects, "success" is defined by whether a given HSR project is actively pursuing development or funding. In the case of the Northeast Corridor, a more complete discussion of success is provided since HSR has been implemented on that corridor for some time.

While each case summary provides a discussion of key findings and lessons specific to that corridor, the cases presented these reports provide several broader findings and lessons:

1. Leadership, coupled with means and authority, are required to implement change.

- 2. The actors providing the leadership, the means, and the authority to implement change may vary according to specific circumstances and factors. Keeping costs lower helps, but there are costs to "doing it on the cheap" or incrementally. Trying to reduce costs too much can lead to the situation where the goals are left unmet, plans must be revised, and the resulting delays also raise costs.
- 3. A federal vision for HSR is needed along with a national network strategy for rail that combines passenger, freight, non-HSR intercity, and HSR rail, and addresses how each also links to non-rail modes of transportation. Along with this, federal funding is also important, especially for the larger and multistate projects. Reiterating the findings in the first study, without a broad vision, or at least guidance and standards, states will continue to fill the void with multiple types of models --- constitutional amendments and legislation, multi-state compacts, publicprivate partnerships — without a sense of what is most likely to succeed. Worse, without a national network strategy for rail, the United States will continue to miss opportunities to improve its overall transportation system for passengers and freight.
- 4. Developing clear and consistent goals around which to build a consensus is important. The goals for any major capital investment project are rarely onedimensional. However, in the case of HSR, the goals are not only multidimensional but also sometimes conflicting. While some focus on the need for the highest speeds, others argue that accessibility, frequency, and on-time performance are more important (basically, more efficient and reliable intercity rail). These different goals lead to very different markets, technologies, funding sources, and overall outcomes, with those focusing on speed proposing new HSR and those focusing on other attributes looking toward incremental HSR.





Video Transit Training for Older Travelers: A Case Study of the Rossmoor Senior Adult Community, California Project #2404 Publication #06-04 Principal Investigator: Susan Shaheen, Ph.D. (Former Title: The Elderly and Public Transit: Minimizing Barriers and Maximizing Service)

The United States faces the challenge of providing transportation services to older travelers who will comprise 20 percent of the nation's population by 2030. This report is based on the premise that for many older individuals using transit is a new or unfamiliar experience that presents numerous physical and cognitive challenges. Studies on senior transit use have recommended the development of education and training programs to address their transit-related information needs.

In this study, the principles of social learning and marketing were applied to develop a transit training video for residents of the Rossmoor senior adult community in Walnut Creek, California. The video features familiar community members successfully navigating specific concerns and problems related to transit use in accessing key community destinations (shopping, health care, and the nearest Bay Area Rapid Transit district station).

To evaluate the effectiveness of the video, residents were recruited to complete questionnaires before and after viewing it. Video messages aimed to educate viewers on how to obtain transit information, costs, and payment generated a significant and positive attitudinal change. However, respondents reported that the video did not adequately address the difficulties associated with reading schedules and climbing stairs at transit stations. Survey results also indicate a significant and positive change in respondents' future use of a broader range of online information sources. The results also reveal a significant and positive change among respondents in using transit services to the specific destinations presented in the video. However, results are mixed on whether participants might take transit to general destinations not explicitly presented in the video.

The authors recommend future research to examine changes in actual transit use after viewing the video and to compare the relative effectiveness, in cost and behavioral change, of the transit training video to other social learning and marketing interventions.

The transit-use video referred to in this publication is available online at: www.path.berkeley.edu/path\_downloads/Video/IMR/ Rossmoor-Final.mpg



How Far, by Which Route, and Why? A Spatial Analysis of Pedestrian Preference Project # 2406 Publication #06-06 Principal Investigator: Marc Schlossberg, Ph.D.

There is an increasing interest in community "walkability," as reflected in the Safe Routes to School program, the concern over a national obesity epidemic, and the rising interest in smart growth and related policy approaches to urban development. In each of these cases, walking is recognized as a key mode of travel, and increasing walking is viewed as a key goal. Despite the seeming simplicity of the goal of building commu nities that are good places to walk, we actually know very little about how our local infrastructure affects people's willingness or capacity to walk to access their desired destinations.

The central research questions for this study were:

- How far do pedestrians walk to rail transit stations?
- What environmental factors influence their route choice?

This research project surveyed people who walked to five rail transit stops to find out what route they walked and their preferences in choosing a walking route. In addition, the authors conducted an environmental audit of the streets and intersections around those stations. Combining the results from both activities, the analysis generated five key findings about pedestrian behaviors and preferences, including the finding that the average survey respondent walked a half mile, far farther than the quarter to a third of a mile assumed by many to be the maximum distance that Americans will walk. In addition, pedestrians in the study believed that their primary consideration in choosing a route is minimizing time and distance. Secondary factors influencing their route choice were safety from traffic and, to a lesser extent, attractiveness of the route, sidewalk quality, and the absence of long waits at traffic lights.

Through the data collection and analysis process, the authors developed several recommendations related to the methodology for doing such detailed, block-byblock analysis. Three of these focus on how to reduce the time burden of collecting the data, allowing a research team to hone in on collecting only the most useful data. The final two findings address the practicalities of collecting the data—whether to use Pocket PCs or pen and paper, and the importance of ground testing maps if one uses a GIS-based system running on Pocket PCs.



Beyond Uncertainty: Urban Models in Transportation and Air Quality Planning Project #2407 Publication #07-01 Principal Investigator: Caroline Rodier, Ph.D.

Governmental bodies in the United States are implementing more advanced land use and travel demand models to meet air quality conformity and environmental impact statement requirements. To help guide model applications in policy studies, this report describes an evaluation of model accuracy and induced demand representation over a 10-year period in an integrated land use and transportation model, the 2000 Sacramento MEPLAN. The accuracy evaluation showed relatively high error levels for zonal land use forecasts. There were smaller errors in established central urban areas and larger errors in the outer ring. Using the model for conformity analysis, the regional transportation plan emissions analysis should fall outside model error to demonstrate conformity. In environmental impact analyses of new roadway projects, model errors tended to underestimate no-build travel and project need. The magnitude of change from the no-build alternative to the highway alternative should be greater than the absolute value of model error to be a significant improvement. For both conformity and environmental impact analyses, this study indicates that land use changes from a new project may be significant and should be included in valid evaluations as required by current regulations.



The Evolving Nature of Terrorist Acts Against Surface Transportation: Capturing Lessons Learned Project #2501 Publication #06-07 Selective Screening of Rail Passengers Principal Investigator: Brian Michael Jenkins NOTE: This is the first part of a two-part project. The remainder of the project is listed with ongoing projects and does not yet have a publication number.

In addition to the original concept of this study, Mr. Jenkins' team reviewed recent work on random and selective search possibilities for rail transit. Passenger screening concepts used for air travel cannot easily be applied to rail or subway systems without enormous and unacceptable delays and costs. The terrorist threat will persist, and urban mass transportation presents an attractive target. While a number of steps have been taken by transit agencies and by government to increase security, passenger screening has been implemented by only two transit agencies, one local and one state. Although not all attacks can be stopped, steps can and must be taken to reduce significantly the possibility of terrorist attacks on urban mass transit. Selective screening regimes can reduce risk, particularly if they use an optimum mix of selection procedures; maximize deterrence; are planned, managed, and monitored professionally; and are accompanied by a campaign of public education and community involvement.

#### More specifically:

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1. It does make sense to screen only some passengers, even on a voluntary basis.

- 2. The appropriate selection process would include a combination of random selection, behavioral profiling, and specific threat information, augmented in some instances by canine teams.
- 3. Where there is a credible but nonspecific threat, use of all methods should increase. When there is a credible and specific threat, specific intelligence information should guide behavioral profiling, with random selection being maintained as a base. Where there is a general long-term threat, random selection should remain the prominent mode.
- 4. Future technology can play a major role in screening and should focus on improving current technologies and developing field-deployable systems that can detect explosives on individuals and in groups at standoff distances.
- 5. A good screening program is carefully planned, is fully and realistically budgeted, has a downward flow of policies and procedures that clearly define its objectives and how it will achieve them, can be increased or reduced flexibly, maximizes practices that increase unpredictability and deterrence, utilizes technology efficiently, is subject to a quality-assurance program, has continuing public outreach and education, and, most important, has strong seniorlevel support and first-class supervision.



Exploration of Data Sources for Air Cargo Studies (A Seed Project) Project #2525

Seed Project: These projects are used by new SJSU faculty members to explore potential research topics. They do not result in a standard publication; they may lead to a research project, or, as in this case, to an unpublished white paper. Principal Investigator: Wenbin Wei, Ph.D.

This seed project grew from discussions among Dr. Wei, Ms. Johnson, and the Caltrans Division of Aeronautics. Caltrans wanted to explore the potential case for airport access and other improvement based on the value of the cargo being exported through California airports, particularly cargo that originated from California producers. The purpose of this seed project was to determine if there is sufficient data available to support a full research project.

The project explored the available data sources and databases, and investigated what data are available in various sources, and what analysis can be made based on current data sources. Raising the profile of air cargo, especially that which is carried in passenger planes, could help justify investments in ground access to airports. However, the finding of the initial research shows that separating the value of Californiagenerated freight from the value of the whole is problematic at best.

Two important reasons account for the lack of research and understanding of the role air cargo plays: 1) compared with passenger traffic, there are less sufficient, accurate, and consistent data available in the air cargo industry, although there are multiple resources; 2) there are many agents involved in the air cargo industry, including shippers, carriers, airports, ground transportation agents, and various levels of governments; the inter-relationship between air cargo and other economic indicators is complicated.

## Ongoing Research Projects



A Consumer Logistics Framework for Understanding Preferences for High-Speed Rail Transportation **Project #2206 Principal Investigator: Kenneth Gehrt, Ph.D.** 

The purpose of this study was to reach a fuller understanding of the potential for high-speed rail (HSR) usage in the United States. The theoretical framework of Consumer Logistics (CL) theory was used for a survey that will inform efforts to develop and market HSR service in the San Francisco-Los Angeles (SF-LA) corridor. The team members have successfully used CL to better understand the choice between traditional, ATM, and online banking. The theory lends itself equally well to an examination of the choice between competing transportation modes.

This study incorporates CL theory in the context

of channels research that hypothesizes relationships among:

- Performance of CL functions;
- Development of consumer value (efficiency and effectiveness); and
- Satisfaction/usage intention.

Research methodologies include literature review, focus group interviews, and pretests and administration of a survey of SF-LA business air commuters, as they present a likely source of HSR passengers. The survey will also compare CL sensitivity profiles of transportation mode preference categories (HSR, conventional rail, air, and auto commuters). The resulting data will be analyzed using exploratory factor analysis, structural equation modeling/LISREL, and regression analysis. The findings will suggest how CL strategies and tactics can be deployed to maximize HSR usage. The paper is in final editing stages and will be published soon.



Impact of Ethnic Diversity on Transit: How Do Various Population Groups View and Utilize Various Transit Modes? – Phase II Project #2207 Principal Investigator: Richard Werbel, Ph.D.

MTI Project #2109 was the first phase of this project. This second phase includes a full survey and analysis of three main ethnic groups (Asian, African-American, and Hispanic), in addition to a control group of Caucasians. This phase will include on-board interviews to identify survey participants, administration of a telephone survey, analysis of the data, and a final report. Translators and interviewers with facility in the required languages will be employed when necessary. (Early on the project dropped the Asian component because the large number of different Asian languages complicated the interview process, and not enough participants from the same ethnic group were identified to provide useful data for analysis.) By increasing understanding of the behaviors and attitudes of these groups, including generational differences within groups, transit providers may be able to tailor marketing and service provision and, thereby, increase transit usage and satisfaction.

This project has been suspended, though not cancelled. Follow-up telephone interviews for the Hispanic group proved difficult when many of those identified gave non-working numbers. This could be a result of poor work by the contract on-board interviewers or fear of immigration consequences. Subsequently, the principal investigator asked for a suspension for personal reasons. The institute still plans to complete the analysis of the data collected and to document the research difficulties in pursuing this ambitious project.



Applying Smart Growth Principles and Strategies to Resolving Land Use Conflicts Around Airports **Project #2303 Principal Investigator: Richard Lee, Ph.D.** 

The research will address the potential role of smart growth principles to enhance airport land use compatibility planning and the implementation of regional airport development strategies, as well as how the existing airport-compatible land use planning process can be strengthened to better achieve well-suited land uses near airports.

In many large metropolitan areas, there are significant constraints on the ability to continue to expand existing commercial airports. Renewed consideration will have to be given to developing new airports on greenfield sites or providing commercial service at former military airfields or general aviation airports. Since feasible sites are likely to be in relatively undeveloped areas some distance from existing urban development, such a strategy will have important implications for land use planning in the vicinity of new airports and a significant impact on urban growth patterns.

Thus, alternative development strategies that could be pursued as part of the regional airport system planning process will need to balance trade-offs between the continued expansion of existing airports and the development of new ones. There has been relatively little effort to understand the nature of these tradeoffs within the context of smart growth and associated regional development policies.

The length of this report and coordination with the Caltrans Division of Aeronautics, original requestors of the work, resulted in slow progress over the past year. The report is completing final editing.



Barriers to Using Fixed-Route Transit for Older Adults Project #2402 Principal Investigator: Michael Peck, Ph.D., MSW

This research is intended to enhance public transit utilization by older adults by identifying perceived and actual barriers and presenting public transit policy and design solutions to meet the needs of older adults.

The team will use focus groups and surveys in two communities (Rochester/Erie County, New York and San Jose/Santa Clara County, California) and several data sources to assess older adults' perceptions of (1) safety on public transit, (2) safety traveling from home to public transit stops and stations, (3) the ease of using public transit facilities and vehicles, (4) the ease of traveling between home and public transit stops and stations, and (5) the availability and accessibility of public transit information. The research will also assess factors that inform older adults' decision to use public transit.

The survey process, which included an advance mailing, a cash "thank-you" included with the survey, and a reminder card produced a very high rate of return in both communities and a wealth of data for analysis. The research team is currently writing the draft report.



Welfare to Work: A Simulation of Land Use and Transportation Policies **Project #2403 Principal Investigator: Robert Johnston** 

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Data suggest that there is great variation in the rate at which welfare recipients transfer to self-sufficiency across counties within California. It is possible that this wide variation in success is due in part to differences in the spatial distribution of low-income residences, lowskill jobs, and connecting transportation networks in each region.

Sacramento County has the fourth highest number of welfare cases among California counties. Although the total caseload has decreased by 34% since 1997, the rate of decrease slowed in recent years. A somewhat smaller, but more difficult, number of recipients remains, even though the actual individual recipients change over time. It is important to understand this group of recipients and its relationship with neighborhood characteristics, the location of relevant employment, land use policies affecting apartment construction, and transportation policies affecting transit service. If these relationships can be determined statistically, the team can then recommend policies to reduce unemployment for welfare recipients.

The Sacramento region travel model will be used to evaluate several policies to improve job access for welfare recipients in Sacramento County. The team will examine policies for better transit, subsidized auto purchases, and more multi-family zoning in suburban areas, and determine through analysis whether these policies would provide employment opportunities for welfare recipients. Submission of the draft report is anticipated in August 2007. Neighborhood Crime and Travel Behavior **Project #2405 Principal Investigator: Christopher Ferrell** 



This study hypothesizes that urban density and neighborhood crime have been confused in the minds of the public, as well as in the conceptual and statistical models of transportation researchers, and proposes to study the effects of neighborhood crime on mode choice.

This study will be of interest to urban transportation demand modelers, urban transportation planning researchers, and transit agency professionals. By providing a clearer empirical picture of the effects of urban form and crime on travel decision making, policy-level efforts to jointly plan transportation and land use to increase the use of transit and non-motorized modes may also be improved. If researchers and policy-makers can be shown a clearer picture of the effects of urban density on travel behavior while controlling for the effects of crime, a clearer and more substantial case can be made by backers of smart growth and transitoriented development. While it may be assumed that increasing transit services to a neighborhood is the most effective way of increasing ridership, these efforts may be thwarted by high levels of neighborhood crime. In some cases, a more intensive and community-based policing program for a neighborhood might be the most cost-effective means to increase ridership and neighborhood residents' mobility using existing transit routes.

By combining datasets from San Francisco Bay Area law enforcement agencies, census data, and the Bay Area Transportation Survey (BATS) 2000 data, the relationships between urban form, travel behavior, and crime can be measured. Models developed in this study will likely focus on home-based trips so that crime rates and the demographic and land use characteristics of the traveler can be studied. Categories of potential trip types to be studied include home-based work, school, and shopping trips.

This report has completed peer review, and will be published in the fall of 2007.



Paving the Way: Recruiting Students into the Transportation Professions **Project # 2408 Principal Investigator: Asha Weinstein Agrawal, Ph.D.** 

Public agencies and private firms face increasing challenges finding transportation engineers and planners to fill their job openings. The problem is particularly acute for public agencies. Existing research on the issue had focused on examining why current transportation employees chose the field. However, a comprehensive approach to attracting engineers and planners to the transportation profession must also look further back to examine the process of attracting students to transportation disciplines and what affects the decision to complete a degree in a field relevant to transportation agencies and firms. Without knowing more about students' decision processes, transportation educators and employers have no way of knowing which recruitment programs are likely to be the most effective.

The research team will survey university transportation programs and current students to determine practical short and long-term strategies that state DOTs, universities, and others can use to attract a larger pool of students focusing on transportation. The findings from the interviews and student surveys will be used to recommend specific programs and practices with good



potential to enlarge the pool of potential transportation employees by increasing the number of excellent students completing civil engineering and planning degree programs who have coursework experience and interest in transportation. The recommendations will include both short- and long-term strategies for implementation.



The Evolving Nature of Terrorist Acts Against Surface Transportation: Capturing Lessons Learned **Project #2501** 

Principal Investigator: Brian Michael Jenkins

NOTE: A portion of this project has been completed and published – see #2502/#06-07 in Completed Projects Section (Selective Screening of Rail Passengers)

MTI is committed to conducting ongoing, top-quality research of terrorist strikes against transportation targets to distill lessons learned and determine the best practices for deterrence, response, and recovery. Those best practices are taught to transportation and security professionals to provide secure surface transportation for the nation.

Using the case study approach developed during MTI's previous 16 investigations into terrorist attacks on public transportation, the counterterrorism team will identify lessons learned from the attacks in Madrid, London, Mumbai, and possibly Moscow – from preventing attacks to response/recovery and business continuity.



Caltrans Statewide Cultural Properties Information System **Project #2502 Principal Investigator: Eric Ingbar** 

The lack of an information-management model and tool that can be utilized by Caltrans statewide has hampered environmental management in several significant ways. First, no global view of Caltrans performance on environmental commitments or stewardship is possible. Second, each district that contemplates automating cultural resource information is tempted to build its own system, further hampering effective oversight. Third, the proliferation of independent systems makes it difficult to come up with management processes that are consistent, because such processes typically rely upon uniform, timely, data information (about cultural resources, impacts, other resources, etc.). Fourth, training agency staff in using electronic tools is very difficult when each office has its own interfaces, applications, and conventions.

This project will develop a statewide data-management model for cultural resources in surface transportation settings in a series of steps:

- Needs assessment definition (redefinition and confirmation)
- Logical data model revisit, re-formulation and formalization, review
- Application revisit, re-formulation, specification, and review
- Prototype (draft) data system roll-out
- Rapid evaluation of prototype and elaboration of it into final system by rapid iterative testing with Caltrans staff
- Training of staff trainers and system managers
- Oversight of staff training session conducted by Caltrans staff trainers
- Presentation of system design and results to multiple DOTs through on-line project report



Anticipated outcomes include technical products, policy and guidance for their utilization, and an enhanced stewardship by Caltrans of cultural resources nearby to surface transportation projects. Policy and planning products and outcomes include the ability to better forecast where cultural resources will be problematic in surface transportation projects; the ability to see planning as a continuous process within the 10-, 5-, and 3-year planning cycles of the agency, and more opportunities for pre-project planning in advance of NEPA, facilitating project evaluation and completion by minimizing and predicting likely impacts. Anticipated technical products include a functional enterprise-data system for entering, querying, and displaying cultural resources information and a spatial analysis tool for exploring different areas of potential effect on cultural resource values. This project empowers decision making within the agency by making available the millions of dollars of cultural resources fieldwork the agency has undertaken.

This project will be a first for MTI by including the testing of the products developed and training Caltrans staff in their use. It will be more than practical; it will be in practice by its completion.



Collaborative Funding to Facilitate Airport Ground Access Project #2503 Principal Investigator: Geoffrey Gosling, Ph.D.

> Highway Administration (FHWA), and the Federal Transit Administration (FTA). Policies regarding the use and allocation of these funds are often so restrictive that projects are unable to be implemented or are rendered much less effective at improving intermodal connectivity.

It is anticipated that the research will result in two products:

- A guide to collaborative funding of intermodal airport ground access projects that will document the various funding programs available and review their current limitations and collaborative strategies to overcome these limitations, as well as present case studies of successful efforts to develop collaborative funding strategies for airport ground access projects.
- 2. A final report that will present an analysis of the past experience with collaborative funding of airport ground access projects and present recommendations for changes to policies and funding allocation procedures at the federal and state levels.

Airports are the principal interchange nodes in the passenger transportation system where local and regional transportation systems interface with those for national and international travel. Airports also play a vital role in facilitating the transfer of air cargo between the surface transportation system and the air transportation system, as well as sometimes serving as major sorting and distribution centers for freight that may be moved entirely by surface transportation.

However, all too often projects to improve the connectivity between the surface transportation system (including private vehicles, buses, and light and heavy rail systems) and the airport circulation and terminal facilities are hampered by project funding regulations that limit the type and location of projects eligible for funding from the various programs administered by the Federal Aviation Administration (FAA), Federal



Evaluating the Environmental Justice Effects of Land Use Scenarios in the Sacramento Region with the PECAS Activity Allocation Model Project #2601 Principal Investigator: Caroline Rodier, Ph.D.

In 1994, a Presidential Executive Order directed every federal agency to make environmental justice (EJ) part of its mission by identifying and addressing adverse effects of its programs, policies, and activities on activities on

minority and low-income populations. It is widely recognized, however, that modeling tools currently used by transportation agencies have a very limited ability, if any, to perform such analyses.

Concurrently, there has been increased recognition of the potentially harmful social, economic, and health effects of highway-induced sprawl on low-income and minority groups in the U.S. In response, many have advocated smart growth and/or transit-oriented development (TOD) policy strategies to redress these effects and improve access for disadvantaged groups.

In recent years, the Sacramento region has undertaken an ambitious planning process called the Blueprint Project. This participatory process included over 5,000 residents and established a long-range regional vision rooted in smart growth and TOD principles, which was named the Preferred Blueprint scenario. The process was initiated with the Base Case scenario, which projected Sacramento's future assuming the continuation of current land use and transportation plans and policies, and is equivalent to an urban sprawl scenario.

The Sacramento region's ambitious planning efforts have been accompanied by equally ambitious model development efforts, which have included the development and partial calibration of the advanced PECAS activity allocation model.

The proposed research will enhance the calibration of the PECAS activity allocation model and use the model to simulate the EJ effects of a smart growth scenario (Preferred Blueprint) and an urban sprawl scenario (Base Case). The EJ effects simulated with the PECAS activity allocation model will include a consumer surplus measure for each of the 16 income household classes, which will represent changes in household access to jobs and payments for goods and services (including household rents and transportation costs). In addition, the employment categories will allow for some assessment of benefits and losses to low-wage and/or minority-dominated labor categories by location (e.g., service and agricultural workers). The developers of the PECAS model, Drs. Hunt and Abraham (of the University of Calgary and HBA Specto Inc.), will lead the calibration of the model and provide the guidance necessary to simulate the scenarios and analyze the results.



Walking and Biking to School: An Assessment of Modal Choice and Urban Form Project #2602

Principal Investigator: Marc Schlossberg, Ph.D.

Note: The PI has requested withdrawal of this project. He has been appointed department chair, which, added to already extensive responsibilities in the new combined Oregon UTC, has reduced the time available for this work.

SAFETEA-LU established a national Safe Routes to School program, meaning that communities throughout the country will need to know what policy and infrastructure interventions are most appropriate in facilitating safe walking and biking to and from school. This research is designed to assist communities make good transportation infrastructure decisions that help maximize the impact of this new program.

Of this federal funding, 70-90% is to be directed to engineering/infrastructure projects, so understanding what types of environments yield the best results for walking and biking will help transportation departments target resources effectively.

On the research side, this project continues to add to a growing body of literature on the relationship between urban form and transportation, but focuses on youth and the journey to/from school. The research will also feature the continued development and evolution of a field- and GIS-based data collection tool that can easily gather variables about the walking and biking environment on a very local level. There are several efforts around the country to identify the "right" variables to collect when assessing local walking and biking conditions. The approach proposed here continues that line of inquiry and it does it within a mobile GIS environment, which is unique among all the other efforts. Moreover, the tool will be designed with the community in mind and devised in such a way that community participation in data gathering and analysis may be possible. In this way, data can be combined with local activism so that there will be a structure in place to translate study results into meaningful change.

The Business Case Potential for Public/Private Partnerships (PPPs) for Various Caltrans Intelligent Transportation System (ITS) Assets **Project #2603 Principal Investigator: To Be Determined** NOTE: This project has been deferred, pending a re-examination by Caltrans of the problem statement and scope of the project.

California owns substantial ITS inventory, including closed-circuit television (CCTV), travel time systems, and high occupancy toll (HOT) lanes, that could present an opportunity for PPP. Possible partners could use CCTV or travel time to attract website customers; cable TV and broadcast stations could enhance their offerings by using these systems to inform viewers. These assets might have a value for which private businesses would want to pay a premium. However, the state has no business plan for tapping this opportunity.

This study will investigate strengths and weaknesses in current government and private business structures and seek to identify the possibility of PPP contracts within the bounds of existing law. Further, the opportunities and challenges for both the government and the private companies to accommodate PPP agreements will need to be identified.

#### Tribal Corridor Management Plan Project #2604 Principal Investigator: Mary Scoggin, Ph.D.

Caltrans and local tribes have expressed interest in creating a plan for design features that highlight Native American culture where a state highway runs through tribal land, a Tribal Corridor Management Plan (TCMP). Tribal symbols, information kiosks, fencing, native plantings, and other non-standard design features can be made consistent with existent transportation and downtown plans. The non-standard principles of the highway project will help guide future transportation plans, construction projects and maintenance activities when located on or near Native American reservations or rancherias in California. This project will also give the public a sense of place when entering tribal lands, and an awareness of the history, culture, and vitality of the area.

In addition to developing a set of guidelines that can be used to develop tribal corridors along highways throughout Caltrans District 1, this project will also create a plan specific to the creation and management of a tribal corridor through the Hoopa territory along Highway 96. The Hoopa have both a Transportation Plan and a Traffic Calming and Safety Enhancement Plan for their downtown area, and the more advanced state of their planning efforts led to the choice of their area for the pilot testing of the TCMP guidelines. The iterative process will allow the real-world experience of working with tribal organizations and other stakeholders to inform the development of and test ("ground truth") the utility and completeness of the general guidelines.

This is a specialized, context-sensitive solutions project. By reflecting the tribe's strong sense of pride, it can help deter vandalism and help reduce maintenance and repair costs. Additionally, it might enhance the experience of the traveling motorist and contribute to crosscultural understanding and appreciation, as well as community pride and economic growth.

The project will produce a Tribal Corridor Management Plan guideline, suitable for application in any tribal area, a more specific plan for the Hoopa area (both products for delivery to Caltrans), and an MTI publication that will document the process used, decisions made, and recommendations. The MTI publication will include the draft Caltrans products as appendices.

### New Projects



Bus Rapid Transit/Light Rail Implemented on One Dedicated Lane: Operational Feasibility, Practicality and Systems Analysis Project #2605 Principal Investigators: Wenbin Wei, Ph.D.; Jacob Tsao, Ph.D.

The ultimate goal of this study is to develop a methodology that can be used to determine if a one-dedicatedlane BRT or light rail system would be feasible and practical for any given urban corridor, and, if so, how the one-dedicated-lane BRT or light rail system should be operated so as to achieve the highest possible performance. To maximize the realism of the underlying assumptions, a particular corridor in California will be used as the reference model.

In many urban areas, the current demand for bus transportation or light-rail is so low that dedicating two full lanes for exclusive use by buses or light-rail trains has led to or would lead to underutilization of the right-ofway, usually amid heavy automobile traffic during the peak commute hours.

With the presence of a one-dedicated-lane BRT or light rail system constructed in the absence of severe public resistance, demand for higher density residential developments might increase gradually and eventually lead to higher density developments along the corridor and to public will for dedicating two lanes of right-of-way for expansion of the BRT or light rail system. With such a potential solution, the transit-oriented development (TOD) concept championed by Santa Clara Valley Transportation Authority (VTA) and other transit operators not only might work for corridors already being served by existing light rail or BRT services, but also may achieve its full potential with many new light rail or BRT systems.

Following discussions with transit operators, the team will develop and specify a system of operational rules sufficiently detailed for estimating system performance. Tasks will include the preparation of sketches of a cross station for both at-grade and elevated platforms. The team will evaluate the throughput capacity of the system and the delay to bus travel at crossing stations of the proposed system. Two expansion alternatives will be developed to satisfy possible significant growth in demand. They will assess the practicality of the system with respect to operator acceptance, public acceptance, public policy and other identified systems issues. Throughout the project feedback will be sought from transit operators.


Improving Bus Priority Lane Effectiveness in Congested Urban Centers **Project #2606 Principal Investigator: Asha Weinstein Agrawal** 

This study will examine the policies and strategies governing the enforcement of bus lanes in major congested urban centers. It will also examine the effectiveness of current bus lane enforcement strategies in several major U.S. cities. The project will be a case study of several municipalities including Midtown and the Upper East Side in New York City, San Francisco, Boston, Chicago, Los Angeles, and London, UK as a best practice case, examining policies and strategies regarding ongoing enforcement of BRT lanes. The research team will conduct interviews with transportation departments and law enforcement agencies about their enforcement policies and use the results to produce descriptions of findings for each city, a table comparing legal frameworks in all cities, and a typology of enforcement strategies; and "best practices" case studies. In three cities, the research team will measure bus priority lane "availability," defined as the share of time that no stopped vehicles are blocking the lane. Statistical analysis of the data collected will provide insight into the variation in bus lane availability by time of day and method of enforcement. It will also provide information on the frequency and duration of lane blockages by vehicle type (passenger cars, delivery trucks, emergency vehicles, etc.). They will also develop guidelines for evaluating the extent to which bus lane violations pose a problem for bus operations, and the types of solutions that are likely to be effective in different situations, along with specific policy recommendations.



Strategies for Connecting Transportation Funding and Smart Growth: State and Regional Best Practices and Incentives **Project #2607** Principal Investigator: Gary Binger, AICP

> that would significantly advance on-the-ground smart growth practices without usurping local government land use authority.

The overall objective of this research project is to identify five to ten specific state and regional strategies that could produce:

- Compact land use patterns
- Transit-oriented development
- Job housing proximity
- Public transit
- Affordable housing

The research will include a literature review, interviews with individuals who have directly advocated for or implemented specific state or regional smart growth strategies, and an analysis of five to ten strategies within each of the five categories listed above. The draft report for this project has been submitted.

The research will address certain fundamental questions about state or regional strategies used to facilitate compact development, transit-oriented development, job-housing proximity, public transit, or affordable housing. Do they, or could they, work? What were, or could be, the keys to a strategy's success? What were, or could be, the potential barriers to their implementation? Investigation will include interviews with public agency stakeholders who have been actively involved in the policy-making process. This project is designed specifically to research and identify state and regional agency transportation policies, programs, and incentives The Influence of Service Planning Decisions on Rail Transit Success or Failure **Project #2608 Principal Investigator: Jeffrey Brown, Ph.D.** 



The final product of this research will be a handbook offering guidance to regional policy makers in methods for improving benefits derived from rail transit investments in their regions. The handbook will illustrate successful strategies for regional rail transit and bus service integration. The team anticipates that the successful concepts will integrate bus and rail services so that users can reach dispersed suburban retail, commercial, and employment destinations.

Using 11 case studies, the team will collect data and estimate a time-series model in which transit patronage is a function of population, economic activity and its distribution, motor fuel price, and a set of transit fare and service variables. The results of the statistical analysis will be used to develop an interview guide for in-depth telephone interviews of transit agency managers and local policymakers in each metropolitan area to obtain information about the specific service strategies they have pursued as part of their efforts to increase patronage and/or that they pursued with their rail transit investment. The questions will be structured to elicit responses on various dimensions of rail system planning including: locating the routes, relationship with bus transit planning, fare policy decisions (structure, level, transfer policies, etc.), and station-area parking issues. They will also seek to obtain station-specific patronage figures, including transfer rates, from the various transit agencies. Additional questions will cover land use policies, including TOD, and other external factors that might be influencing the ridership trends in their urban area.

Analysis of the data collected through these two research efforts should yield conclusions about the role of rail transit service planning decisions in explaining variation in transit system performance among the 11 case study areas.



Effects of Suburban Transit-Oriented Developments on Residential Property Values Project #2609 Principal Investigator: Shishir Mathur, Ph.D.

The goal of this study is to objectively examine the effects of transit-oriented development (TOD) on the property values of single family swellings near those developments. Several suburban TODs along the San Francisco Bay Area's BART line will be reviewed. The study will highlight and objectively measure the benefit of transit capital improvements.

While the increase of TOD is a desirable planning goal, the development of successful TODs often encounters several barriers. These barriers include: lack of interjurisdictional cooperation, auto-oriented design that favors park-and-ride lots over ridership generating uses, and community opposition. Like any new high-density development, TODs are likely to face community opposition. This opposition may be more vocal in suburban areas where residents of predominantly single-family neighborhoods may feel that the proposed high-density, mixed-use development will bring noise, air pollution, increased congestion, and crime into their area. While community opposition to TOD has been very pronounced in some areas, very little research exists that indicates whether this opposition is well founded.

The study will use a literature review, housing-related data from proprietary sources and the assessor's office, neighborhood and jurisdiction level data from the U.S. Census, housing supply and demand data from the

relevant entities, and GIS data. An hedonic regression method will be used to develop a series of empirical models. Each suburban TOD effect on its surrounding residential neighborhoods will be separately estimated. The final report will present conclusions and findings about the effects of TOD on housing prices in their neighborhoods.



This study will clarify the use of the CSS process in finding transportation solutions for planners, designers, and engineers in city and state agencies working in urban areas. CSS and its predecessor, Context Sensitive Design (CSD), are defined in a number of ways around the country. While some practitioners utilize CSD and CSS interchangeably, the general trend has been to move toward utilization of the phrase CSS to emphasize the process involved with finding transportation solutions rather than focusing solely on the design elements themselves.

The project will include an in-depth literature review to identify potential locations for case studies. For cases that look promising, additional informationgathering discussions will be held with individuals at the agencies involved to fill in the gaps and gain a better understanding of the specific dynamics involved in the CSS process.

At least four cases will be developed. Comparisons will be made between these cases to look for similarities and differences and how they affected the end results. The goal is to develop a set of best practices and key features or elements of which practitioners should be aware.



How to Ease Women's Fear of Transportation Environments: Case Studies of Best Practices **Project #2611** Principal Investigator: Anastasia Loukaitou-Sideris, Ph.D. NOTE: This project has been deferred. It is expected to start by the fall of 2007.

> looked at transportation settings, but little academic research has specifically focused on this topic.

The relationship between women's safety and the built environment has been the subject of research, with clear findings that women feel unsafe in many locations. Cities and municipalities around the world have addressed this issue by implementing different programs to assess and remedy safety gaps in the built environment. Some of these programs have

Whether traveling by bus, automobile, or other modes, women's fear of transportation facilities - such as parking lots, buses, and bus stops - in turn affects the way women engage in travel. This study will focus on the safety concerns and needs of women riders. As such, it will continue and extend ongoing research on the topic by assessing the women's perspectives on issues of transit safety, and documenting lessons from case studies of model programs and best practices targeting women's safety in transit environments.





Carsharing and Public Parking Policies: Assessing Benefits, Costs and Best Practices **Project # 2612** <u>**Principal Investigator: Susan Shaheen, Ph.D.**</u>

This study will increase awareness of the benefits of car-sharing programs in urban areas, and also propose solutions regarding the parking needs of car-sharing programs. It will provide recommendations to program planners on how to best communicate the benefits of car-sharing to those who can benefit most from these programs, including low-income households and college students. An increasing body of empirical evidence now indicates that car-sharing is an effective tool to reduce auto ownership, vehicle miles traveled (VMT), and vehicle emissions, and increase transit use, and allow for more efficient use of roadways and parking facilities.

This project will examine car sharing programs in existence or under consideration in several U.S. cities, including San Francisco, San Diego, Portland, Seattle, Philadelphia, Evanston, Washington DC, Boston, and Arlington, VA.



Evaluation of Greenhouse Gas (GHG) Emission Reduction Policies in the Transportation Sector of California **Project #2613 (An MTI Seed Project) Principal Investigator: Asim Zia, Ph.D.** 

The proposed research will be focused on evaluating greenhouse gas (GHG) emission reduction policies in the transportation sector, which are being pursued/ planned by governmental agencies in California to mitigate adverse global climate change. This topic carries extensive salience in the current policy world because transportation sector is one of the leading contributors of GHG emissions, both in terms of existing GHG stocks and expected flows in the future. The seed grant will be used to undertake review of the existing scientific literature and to develop a full grant proposal for this policy evaluation study. A mix of quantitative and qualitative methodologies will be developed to explore this topic after critical review of statistical/quantitative models in the current literature and a few pilot interviews with relevant stakeholders.



Exploring the Future of California's Transport System Project #2614 (An MTI Seed Project) Principal Investigator: Triant Flouris, Ph.D.

This seed grant project will explore the feasibility of a multidisciplinary research project examining changes, challenges, prospects and problems facing California's transportation industry in the years 2010 through 2020. An interdisciplinary exploration of California's transport future, led from a social science perspective, offers the best opportunity to help leaders in industry and government make more effective decisions to embrace opportunities and resolve challenges already evident on the horizon. The ultimate research project aims to link social scientists across several disciplines and engineers, with the goal of developing an understanding of the opportunities and risks that could arise from changes in the nature and extent of California mobility in future decades. Alternative scenarios based on differing demographic, spatial, technical, and resource assumptions will be used as starting points to elaborate potential outcomes. Policy recommendations will be generated to maximize the opportunities and mitigate the risks associated with each set of outcomes.

The proposed scenario-based futures assessment offers an innovative conceptual framework to engage academic researchers, public officials, and private managers in new ways of thinking about the prospects and problems facing the transport sector.

### A Preview of New Research in the Coming Year In May of 2007

RAPOC selected five projects to pursue in the coming year. All have completed the requested revisions and will begin in the late summer of 2007. They are:

2701 Public Support for Environmental Transportation Taxes and Fees? A Survey of Californians Principal Investigator: Asha Weinstein Agrawal, Ph.D.

2702 Carsharing and Carbon Dioxide Emission Reduction Across Density and Transit Quality Gradients in the U.S. Principal Investigator: Susan Shaheen, Ph.D. 2703 Linking Highway Improvements to Changes in Land Use with Quasi-Experimental Research Design: A Better Forecasting Tool for Transportation Decision Making Principal Investigator: Hilary Nixon, Ph.D.

2704 Case Studies of Incremental Bus Rapid Transit Projects in North America Principal Investigator: John Niles

2705 Phase Two: Evaluating the Environmental Justice Effects of Land Use and Transportation Scenarios in the Sacramento Region with the PECAS Activity Allocation Model and an Advanced Travel Demand Model Principal Investigator, Caroline Rodier, Ph.D.

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# Information and Technology Transfer

The area of Information and Technology Transfer manages hardcopy and online dissemination of surface transportation policy information, including information resulting from MTI research, education, fora, and symposia programs. Among other projects, this area includes *TransWeb*, the library program, and all publications.



## ITT Management Staff

#### **James Swofford**

Project Manager

Phone: 408-924-7569 swofford@mti.sjsu.edu James Swofford joined MTI in July 2005 as project manager and is primarily responsible for information transfer activities. Mr. Swofford has considerable experience in creating and implementing communications strategies and programs for non-profit organizations, public agencies, and commercial clients.

### Information Transfer

### -orums and Symposia

#### Library

SJSU's Martin Luther King, Jr. Library has assigned research librarian Diana Wu to the transportation area. In addition to functioning as the librarian for the MTI collection and all other transportation issues, Ms. Wu is also a member of the MTI academic advisory committee, the Research Associates Policy Oversight Committee (RAPOC). Through contacts with other transportation librarians, including Rita Evans at the Institute for Transportation Studies at UC Berkeley, Ms. Wu provides an expansive network of resources for students and researchers working on MTI projects. Each year MTI sponsors regional forums and state or national symposia. These events accomplish multiple purposes – sharing recent research with practicing professionals, other academics, and the larger community; exploring issues needing further research (part of needs assessment); providing opportunities for networking; and creating a record of proceedings that can be shared with a wider audience online and/or in print.

#### Norman Y. Mineta National Summit on Transportation Finance Project #2651 Project Manager: James Swofford, MTI

On October 12, 2006 the Mineta Transportation Institute hosted the Norman Y. Mineta National Policy Summit on Transportation Finance, a one-day session for policy makers and senior managers to explore local, state, and national options for medium- and longterm transportation financing. The event was held in conjunction with the American Public Transportation Association (APTA) annual meeting in San José CA. This no-fee event was co-sponsored by AASHTO, APTA, and the California Business Roundtable.

MTI founder and retired Secretary of Transportation Norman Y. Mineta presented the luncheon keynote speech and joined in the afternoon roundtable forum. Leading the discussion was a select panel of experts drawn from the ranks of the MTI Board of Trustees, including Mort Downey, president of PB Consult, Inc., who moderated the morning and afternoon panel sessions. Dr. Asha Weinstein, an assistant professor of urban and regional planning at San José State University, shared research and poll results on public attitudes toward various transportation financing mechanisms. MTI trustee Nuria Fernandez, commissioner of aviation for the City of Chicago and acting administrator/deputy administrator of the Federal Transit Administration from 1997-2001, presented inter-modal issues from the air transportation sector's viewpoint, and Caltrans director Will Kempton described past and present transportation funding approaches used in California. He was followed by MTI chair David Turney, who provided a private sector view of the federal funding reauthorization process and suggestions for future legislation. Addressing the legislative components was Arthur Guzzetti, the director of policy and advocacy for APTA.

The capacity crowd of transportation executives and planners, along with representatives from business and academia, joined in the give-and-take discussion with Secretary Mineta and the panel. The event was widely covered by local and regional media.





Fourth National Transportation Security Summit: Passenger Screening Project #2654 Publication #Pending **Project Manager: James Swofford, MTI** 

MTT's National Transportation Security Center (NTSC) used its Fourth National Transportation Security Summit on March 14, 2007 to announce the publication of Selective Screening of Rail Passengers by MTI Research Associates Brian Michael Jenkins and Bruce R. Butterworth. The event was scheduled to coincide with the American Public Transportation Association's (APTA) legislative conference. As noted in the Research section of this report, Selective Screening of Rail Passengers reviews security in mass transit and advocates preparations for screening that are selective and voluntary to reduce the risk of attack. Covered in the report are the current terrorist threat, objectives and methods of screening, characteristics of a good screening program, plus conclusions and recommendations.

Mr. Jenkins and Mr. Butterworth led off the summit with a presentation of their methodology and findings. They were followed by a panel moderated by APTA's security director Greg Hull and composed of Col. Douglas DeLeaver, Maryland Transit Administration; Ernest R. Frazier, New Castle County (DE); Polly Hanson, Washington Area Transportation Authority; and Robert Jamison, Transportation Security Administration (TSA). Mr. Jamison, TSA's deputy administrator, complimented the authors, differing from their assessments only with a more optimistic estimate of when screening technology would be ready for deployment. Department of Homeland Security (DHS) Secretary Michael Chertoff, who was introduced by former Department of Transportation Secretary Norman Mineta, provided the keynote speech, in which he shared his thoughts on passenger screening and funding of surface transportation security.

The event drew significant media attention in both the Washington DC and California media markets. Mr. Jenkins gave more than a dozen print and electronic interviews.

The published proceedings will be available in hardcopy and online in the Security Symposia and Forum Reports section at: http://transweb.sjsu.edu/research/ publications.html

#### Seventh National Garrett Morgan Symposium on Sustainable Transportation Project #2653 Publication #pending **Project Manager: James Swofford, MTI**

The 2007 Garrett Morgan national videoconference was held on March 23, 2007. MTI Trustees sponsored seven classes from six schools for this year's symposium, providing staff assistance and technical facilities for the event. AASHTO Executive Director John Horsley sponsored Leonardtown High School from Leonardtown MD; Caltrans Director Will Kempton sponsored Oakland High School from Oakland, MacArthur Fundamental Intermediate School from Santa Ana, and Flamson Middle School from Paso Robles, all in California; APTA President Bill Millar sponsored Argyle Middle School from Silver Spring MD, and Hampton Roads Transit General Manager Michael Townes, sponsored Spratley Middle School in Hampton VA.

U.S. Secretary of Transportation Mary Peters greeted the participants saying, "I think it is wonderful that you are working together with your teams to create sustainable transportation projects. There is so much that can be accomplished when you bring a group of energetic and bright individuals together."

Each class made a project presentation that addressed one or more elements of sustainable transportation. The six broadcast sites were interconnected through the Caltrans network operations center in Sacramento. Argyle Middle School students from Silver Spring MD were selected winners among the eighth-grade entrants for their white paper on polymer electrolyte membrane (PEM) fuel cell technology in transit buses. The Oakland High School team was honored for its presentation on possible solar power applications for its region's transit systems.

The teachers and student representatives from the two winning schools were honored in June 2007 at the MTI Scholarship Awards Banquet in San José CA, during which they received a plaque and a check for \$500 for their school.

This was the seventh national videoconference symposium on sustainable transportation, conducted by MTI in support of the U.S. Department of Transportation's Garrett A. Morgan Technology and Transportation Futures Program. The program is designed to stimulate the minds of young people and encourage them to excel in mathematics and sciences, which could lead to careers in transportation.

The 2007 Garrett Morgan program also received positive and early press. The Paso Robles Press featured Flamson Middle School, sponsored by Caltrans District in San Luis Obispo. MTI and Caltrans were credited with bringing the program to the three classes of





eighth-grade industrial technology students. The lengthy article, published on December 19, 2007, included numerous quotes from the Caltrans staff working with the program, students, and teachers – all of them enthusiastic about the opportunity for hands-on learning that could lead to careers in transportation. APTA's Passenger Transport (4/9/07, p. 7) again featured this year's contest in an article showcasing its team from Argyle Middle School.

The 2006 Garrett Morgan Competition was covered in APTA's Passenger Transport (8/7/06, p.5), featuring Francis L. Cardoso High School, in connection with another project for the TransTech Academy at the school. Cardoso supports the academy and its projects as part of promoting workforce development.

The published proceedings will be available online in the Garrett Morgan section at: http://transweb.sjsu.edu/research/ publications.html.

### Coming Events

Projects#2751 and #2652 **Project Manager: James Swofford, MTI** *Planning has begun for two events that will occur in FY 07/08.* 

The Norman Y. Mineta National Summit on Workforce Development will take place in conjunction with the APTA Annual Meeting in Charlotte NC. Top academic, government, and industry leaders will review research on the latest developments in workforce development at the local, state, and national levels. The all-day session will include presentations, a keynote speaker, and panel discussions on the workforce challenges now facing policy makers and transportation managers.

A regional forum on urban congestion and its impacts on rural corridors is in development. Potential areas being considered for further discussion include southern Santa Clara County and its interface with San Benito County, and eastern Alameda and Contra Costa Counties and their impacts on San Joaquin County – all in California. Issues of statewide concern to be addressed include determining the responsible agencies for safety, congestion management, and funding solutions.

### Information Transfer

The Information and Technology Transfer area includes MTI's website, *TransWeb* (http://transweb.sjsu.edu) – a transportation information hub widely used by individuals and organizations outside the Institute. In addition to being the home for all things MTI, *TransWeb* provides links to national and international sites related to all modes of surface transportation and surface transportation policy.

*TransWeb* continues to achieve an impressive number of visitors and users, and a considerable number of contact inquiries.

FY				
	03-04	04-05	05-06	06-07
Numer of Hits	1,489,034	2,087,829	2,309,003	2,618,592
All Visitors	236,785	316,831	436,961	421,414
Unique Visitors	101,065	130,033	106,330	99,614

The MTI Research pages provide research proposal information, standard forms used by research associates, research project descriptions of all active research, and links to full-text files of all MTI final research reports, including those completed before online posting was a requirement of the University Transportation Center grant program.

Graduate Transportation Management Program (GTMP) students are beneficiaries of additional TransWeb content and functions. First and foremost, the GTMP pages are designed for current students, who are able to view upcoming class schedules, register for classes on an interactive form, and request information about the program. Video streaming of all classes allows busy professionals to keep up with their classes, repeat important sessions, and take advantage of guest speakers from past sessions. Course instructors use TransWeb by posting course syllabi and assignments, conducting exams, and providing links to bulletin boards, white boards, and chat areas. Students and instructors alike supplement the videoconference class sessions with these other aspects of distance learning for a rich, interactive graduate education.

The site also has a section for pending or immediate past transportation events, separate from the section describing research in progress. In addition to the usual event announcements in What's New or on the home page, this section helps to provide a more extensive picture of the work in progress or just completed.

## World in Motion

The World in Motion quarterly newsletter is an effective medium for informing the transportation community about ongoing MTI surface transportation policy research and education programs. To help conserve funds, MTI moved to online distribution this year.

First published in 1994, World in Motion keeps researchers and others informed about MTI education, research, and information transfer. Every issue includes an update from executive director Rod Diridon, columns from education director Peter Haas and research director Trixie Johnson, as well as information transfer reports and statistics.

Front page feature articles this past year profiled several MTI Board of Trustee members, including DMJM

Harris president and CEO Jane Chmielinski, City of Chicago commissioner of aviation Nuria I. Fernandez, and AMTRAK CEO and president Alexander Kummant.

The Research column includes information about new and ongoing projects, awards and presentations, program development, research associates, and student assistants. The Education column features awards and accolades received by students in the graduate programs, as well as changes and course enhancements in the program. The Information Transfer section covers new publications, events presented or co-hosted by MTI, and updates on the TransWeb website. We plan to incorporate technology – sound and video – into future editions of the online newsletter.



### Mineta Transportation Institute 2005–2007 Research Projects (SAFETEA-LU)

Project Title Project	t Number	Principal Investigator
Best Practices for Context Sensitive Solutions in Urban Areas	2610	Dr. Allison de Cerreño
The Business Case Potential for Public/Private Partnerships (PPPs) for Various Caltrans Intelligent Transportation System (ITS) Assets (deferred; Caltrans request)	2603	TBD
Bus Priority Lane Enforcement and Availability in Congested Urban Centers	2606	Dr. Asha Weinstein
Bus Rapid Transit/Light Rail Implemented on One Dedicated Lane: Operational Feasibility, Practicality and Systems Analysis	2605	Dr. Wenbin Wei Dr. Jacob Tsao
Caltrans Statewide Cultural Properties Information System	2502	Eric Ingbar
Carsharing and Carbon Dioxide Emission Reduction Across Density and Transit Quality Gradients in the U.S.	2702	Dr. Susan Shaheen
Carsharing and Public Parking Policies: Assessing Benefits, Costs, and Best Practices	2612	Dr. Susan Shaheen
Collaborative Funding to Facilitate Airport Ground Access (deferred)	2503	Dr. Geoffrey Gosling
Effect of Sub-Urban Transit-Oriented Development on Residential Property Values	2609	Dr. Shishir Mathur
Evaluating the Environmental Justice Effects of Land Use Scenarios in the Sacramento Region with the PECAS Activity Allocation Model	2601	Dr. Carolyn Rodier
Evaluation of Green House Gas (GHG) Emission Reduction Policies in the Transportation Sector of California (Seed Grant that does not produce a publication)	2613	Dr. Asim Zia
The Evolving Nature of Terrorist Acts Against Surface Transportation: Capturing Lessons Learned (Includes Random and Selective Searches as an additional topic and separate publication – 06-07)	2501 06-07	Brian Jenkins

Project Title	Project Num	ber	Principal Investigator
Exploration of Data Sources for Air Cargo Studies (Seed Grant that does not produce a publication)		2525	Dr. Wenbin Wei
Exploring the Future of California's Transpor System (Seed grant that does not produce a public	t ation)	2614	Dr. Triant Flouris
From Buses to BRT: Case Studies of Incrementa Rapid Transit Projects in North America	Bus	2704	John Niles
How to Ease Women's Fear of Transportation Environments: Case Studies of Best Practices	1	2611	Dr. Anastasia Loukaitou-Side
The Influence of Service Planning Decisions o Rail Transit Success or Failure	'n	2608	Dr. Jeffrey Brown Dr. Gregory Thompson
Linking Highway Improvements to Changes in Land Quasi-Experimental Research Design: A Bett Forecasting Tool for Transportation Decision-ma	Use with er king	2703	Dr. Hilary Nixon
Phase Two: Evaluating the Environmental Justice of Land Use and Transportation Scenarios in the Sac Region with the PECAS Activity Allocation Model Advanced Travel Demand Model	Effects ramento and an	2705	Dr. Carolyn Rodier
Public Support for Environmental Transportation and Fees? A Survey of Californians	Taxes	2701	Dr. Asha Weinstein Agraw
Strategies for Connecting Transportation Funding ar Growth: State and Regional Best Practices and Inc	nd Smart entives	2607 (07-03) **	Gary Binger
Tribal Corridor Management Plan		2604	Dr. Mary Scoggin Dr. Joy Adams
Walking and Biking to School: An Assessment of Choice and Urban Form (deferred; PI request	Modal :)	2404	Dr. Susan Shaheen
Envisioning Neighborhoods with TOD Potential (Includes Demonstration CD)		2602	Dr. Marc Schlossberg

# 1998-2005 Research Projects/ Publications (TEA-21)

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Applying an Integrated Urban Model to the Evaluation of Travel Demand Management Policies in the Sacramento Region	9804 01-03	Robert A. Johnston
Applying an Integrated Urban Model in the Evaluation of Travel Demand Management Policies in the Sacramento Region: Year Two	2002 01-08	Robert A. Johnston
Applying Smart Growth Principles and Strategies to Resolving Land Use Conflicts Around Airports	2303 (06-05) **	Dr. Richard Lee
Barriers to Using Fixed-Route Transit for Older Adults	2402	Dr. Michael Peck
Best Practices in Developing Regional Transportation Plans	9811 01-10	Dr. Donald N. Rothblatt
Best Practices in Shared Use of High Speed Rail Systems (Formerly Shared Use of Rail Infrastructure by High Speed Rail: Best Practices in Design and Operations)	2113 02-02	Andrew Nash
Beyond Uncertainty: Urban Models in Transportation and Air Quality Planning	2407 07-01	Dr. Caroline Rodier
Bridging the Gap: Planning Interjurisdictional Transit Services (Project Cancelled)	2102	Dr. Patrick McGovern, J.D.
Bus Rapid Transit Guidebook (on Website, pending final printing)	2426 06-02	George Gray Tom Larwin
The California General Plan Process and Sustainable Transportation Planning	2003 01-18	Dr. Richard Lee
Can Consumer Information Tighten the Transportation/Land-use Link? A Simulation Experiment (Formerly Decision Making affuences in Land Use and Transportation: An Experiment on the Impact of Transportation and Housing Information	2202 05-03	Dr. Daniel Rodriguez (formerly Dr. Jonathan Levine)
Construction of Transit-Based Developments: New Policy Initiatives for Governments	9901 01-05	Dr. Scott Lefaver

Developer-Planner Interaction in Transportation and Land Use Sustainability	9905 01-21	Dr. Aseem Inam
Effects of Online Shopping on Vehicular Traffic Patterns	9903 01-20	Dr. Joe Giglierano
Envisioning Neighborhoods with TOD Potential (Includes Demonstration CD)	9810 01-15	Dr. Earl G. Bossard
Exploration of Data Sources for Air Cargo Studies (A Seed Grant Project that does not produce a publication)	2525	Dr. Wenbin Wei
Factors Influencing Voting Results of Local Transportation Funding Initiatives with a Substantial Transit Component (Formerly: Passing Local Transportation Tax Measures: A Follow-up Study)	9904 01-17	Dr. Richard Werbel
Forecasting the Impact of Telecommuter Rail-Cars on Modal Choice: A Behavioral Disaggregate Demand Model	2205 04-01	Dr. James Hayton
The Future of Transportation Education: A Needs Assessment for the Transportation Management Program at San José State University (Formerly Needs Assessment for the Transportation Management Program at San José State University)	2201 03-01	Dr. Linda Valenty
GIS for Livable Communities: Using GIS to Improve Transportation Planning and Community Livability	9806 01-09	Dr. Tom Horan
Higher Density Plans: Tools for Community Engagement (Formerly Assessing the Effectiveness of Tools and Information that Respond to Community Fears and Resistance about the Densification of Communities	2204 03-02	Ken Schreiber
High-Speed Rail Projects in the United States: Identifying the Elements for Success	2304 05-01	Dr. Allison de Cerreño
High-Speed Rail Projects in the United States: Identifying the Elements for Success – Part 2	2401 06-03	Dr. Allison de Cerreño
How to Best Serve Seniors in Existing Transit Services	9902 01-04	David Koffman
How Far, by Which Route, and Why? A Spatial Analysis of Pedestrian Preference	2406 06-06	Dr. Marc Schlossberg

Impact of Ethnic Diversity on Transit: How Do Various Population Groups View and Utilize Various Transit Modes? (Phase I has no published report.)	2109 NA	Dr. Richard Werbel
Impact of Ethnic Diversity on Transit: How Do Various Population Groups View and Utilize Various Transit Modes? – Phase II (deferred)	2207	Dr. Richard Werbel
The Impact of Telecommuter Rail Cars on Modal Choice (Seed Grant that does not produce a publication)	2116 NA	Dr. James Hayton
Implementation of Zurich's Transit Preferential Program	9809 01-13	Andrew Nash
Increasing Transit Ridership: Lessons from the Most Successful Transit Systems in the 1990s	2005 01-22	Dr. Brian D. Taylor
Land Use and Transportation Alternatives: Constraint or Expansion of Household Choice (Formerly Transportation and Land Use Innovation: Impacts on Household Residential Choice)	9803 01-19	Dr. Jonathan Levine
Making Growth Work for California's Communities (Formerly An Assessment of the Receptivity of Smart Growth Land Use and Transportation Planning Concepts at the Local Level in California)	2111 02-01	Ken Schreiber
A Model for Assessing Demand-response vs. Prescheduled Paratransit Systems (Seed Grant that does not produce a publication)	2115 NA	Dr. J. Michael Pogodzinski
Modeling Long-Range Transportation and Land Use Scenarios for the Sacramento Region, Using Citizen-Generated Policies (Formerly Regional Transportation Planning for Smart Growth)	2107 04-02	Robert A. Johnston
NAFTA II: California Border Zone Land Transportation Issues	9802 01-06	George Gray
Neighborhood Crime and Travel Behavior	2405 (07-02) **	Christopher Ferrell
A New Planning Template for Transit-Oriented Development	9807 01-12	Dr. Dick Nelson
Non-Pricing Methods to Optimize High Occupancy Vehicle Lane Usage	9908 01-11	George Gray
The Pasadena Gold Line: Development Strategies, Location Decisions and Travel Characteristics Along a New Rail Line in the Los Angeles Region	2305 04-03	Dr. Hollie Lund
Paving the Way: Recruiting Students into the Transportation Professions	2408	Dr. Asha Weinstein

Protecting Public Surface Transportation Against Terrorism and Serious Crime: Continuing Research on Best Security Practices	9805 01-07	Brian Jenkins
Protecting Public Surface Transportation Against Terrorism and Serious Crime: An Executive Overview	9805 01-14	Brian Jenkins
Saving City Lifelines: Lessons Learned in the 9-11 Attacks (Formerly Public Surface Transportation: Lessons Learned in the 9-11 Terrorist Attacks)	2114 02-06	Brian Jenkins
Statewide Safety Study of Bicyclist and Pedestrian Accommodation and Safety on Freeways, Expressways, Toll Bridges, and Tunnels	9909 01-01	Dr. Thomas C. Ferrara
Toward Sustainable Transportation Indicators for California	2106 02-05	Dr. Richard Lee
Transit Labor Relations Guide	9906 01-02	Dr. Herb Oestreich
The Travel Behavior and Needs of the Poor: A Study of Welfare Recipients in Fresno County, California (Formerly Transportation and Welfare Reform: The Travel Behavior and Needs of Welfare Recipients)	9808 1-23	Dr. Evelyn Blumenberg
Trucks, Traffic, and Timely Transport: A Regional Freight Logistics Profile (Formerly Designing a Template for Understanding Freight Movement and Logistics at the Metropolitan Region Level)	2004 02-04	John S. Niles
Using Fiber Networks to Stimulate Transit Oriented Development: Prospects, Barriers and Best Practices	2007 01-16	Walter Siembab
Using the Internet to Envision Neighborhoods with TOD Potential	2001 01-24	Dr. Earl B. Bossard
Using Spatial Indicators for Pre-and Post-Development Analysis of TOD Areas: A Case Study of Portland and Silicon Valley (Formerly A Pre-and Post –Construction Analysis of Transit-Oriented Developments Using Spatial Indicators: A Case Study of Portland and Silicon Valley)	2203 03-03	Dr. Marc Schlossberg
Verifying the Accuracy of Regional Models Used in Transportation and Air Quality	2108 02-03	Dr. Caroline Rodier
Verifying the Accuracy of Land Use Models Used in Transportation and Air Quality Planning: A Case Study in the Sacramento, California, Region (Formerly Verifying the Accuracy of Land Use Models Used in Transportation and Air Quality Planning: A Year-Two Validation Study	2302 05-02	Dr. Caroline Rodier
Video Transit Training for Older Travelers: A case Study of the Rossmoor Senior Adult Community, California (Formerly: The Elderly and Public Transit: Minimizing Barriers and Maximizing Service)	2404 06-04	Dr. Susan Shaheen
Welfare to Work: A Simulation of Land Use and Transportation Policies	2403	Robert Johnston

# 2005 – 2007 Information Transfer Projects (SAFETEA-LU)

Eighth National Garrett Morgan Symposium on Sustainable Transportation	2750	MTI Staff
Norman Y. Mineta National Policy Summit on Transportation Finance: Tough Choices Down the Road	2651 S(S-07-01) **	MTI Staff
Norman Y. Mineta National Transportation Policy Series: Fourth National Transportation Security Summit	2654 (2653 on prior lists) (S-06-02) **	MTI Staff
Seventh National Garrett Morgan Symposium on Sustainable Transportation	2653 (S-07-02) **	MTI Staff
Sixth National Garrett Morgan Symposium on Sustainable Transportation	2551 S-06-01	MTI Staff James Swofford
Urban Congestion on Rural Corridors: a Regional Forum (deferred)	2652	MTI Staff James Swofford

\*\*Publication numbers in parentheses have been assigned to reports that have been submitted but have not completed one or more of the pre-publication activities (peer review, accepted response to peer review, editing, printing)

# 1998-2005 Information Transfer Projects/Publications (TEA-21)

3rd National Transportation Security Summit: Rail Security: A Symposium on Terrorism and Business Continuity (Changed from 2nd Summit to account for 96-1, below)	2353 S-05-02	MTI Staff
Advanced Technologies in Smart Growth (White paper written but not published. Event cancelled in response to change in Caltrans research process.)	2119	MTI Staff/ Dr. Tom Horan
BART to Silicon Valley: How Now? (Regional Forum)	9913 F-01-01	MTI staff
BART to Silicon Valley – What's Next? (Regional Forum)	2454 F-05-01	MTI Staff James Swofford
Bus in the Fast Lane: A Forum on Bus Rapid Transit in the Bay Area	2451 F-04-01	MTI Staff James Swofford

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California Security Summits (National Symposium)		MTI Staff
Crossing the Bay: Water Transit Initiative Forum (Regional Forum)	9814 F-00-1	MTI Staff
Fast Tracks in the Golden State: Symposia on California High-Speed Rail	2253 S-02-02	MTI Staff James Swofford
Garrett Morgan Youth Videoconference Symposium on Sustainable Transportation	2351 S-03-01	MTI Staff
(Garrett Morgan) Youth Videoconference and Symposium on Sustainable Transportation (National Symposium)	9911 S-01-01	Dr. Dongsung Kong
Garrett Morgan National Symposium and Videoconference on Sustainable Transportation in the 21st Century – 2005	2353 S-05-01	MTI Staff James Swofford
Lessons Learned: Tax Referenda and Why They Succeed or Fail (National Symposium)	2101 S-01-03	MTI Staff
National Garrett Morgan Sustainable Transportation Symposium – 2003	2103 S-02-01	Dr. Dongsung Kong
No Road, No Rage (Water Transit Forum, November 21, 2002)	2251 F-01-02	MTI Staff
Protecting Public Surface Transportation Against Terrorism and Serious Crime: A National Summit (National Symposium)	2110 S-01-02	MTI Staff Brian Jenkins
A Transportation Hot Spot Forum on the Marin/Sonoma/101 Corridor (Regional Forum)	2112 F-01-02	MTI Staff
A Transportation Hot Spot Forum on the Highway 152-156 dilemma. Tentative title: Farm Road or Freeway? (Cancelled; may be rescheduled as a new project)	2252	MTI Staff James Swofford
Transportation Safety and Security: Deploying Technology to Improve Transportation (Summary Proceedings of the California Alliance for Advanced Transportation Systems Annual Meeting)	2452 S-05-03	MTI Staff James Swofford
Visioning: A Forum with US DOT Secretary Rodney Slater	F-00-2	MTI Staff

## Projects Under Separate Contracts

Document and Evaluate a Contraflow Test on Route 168 in Fresno (produced a report for Caltrans, not a publication)	2626 Caltrans NA	Dr. Frances Edwards Dan Goodrich
Motor Carrier Security	2627 Caltrans	Brian Jenkins Bruce Butterworth
Ridership Enhancement: A Quick Study	2425 FTA NA	Dr. Peter Haas
Security Gap Analysis	20-59 (25) NCHRP NA	Dr. Peter Haas
Sustainable Communities/San Joaquin Valley Growth	Caltrans NA	Ken Schreiber
Transportation Financing Opportunities for the State of California	2427 Caltrans 06-01	Dr. Asha Weinstein

### Research and Information Transfer\* Publications (ISTEA)

Title Publica Numbe	tion r	Authors
Why Campaigns for Local Transportation Funding Initiatives Succeed or Fail: An Analysis of Four Communities and National Data	00-1	Dr. Peter J. Haas
Analysis of Policy Issues Relating to Public Investment in Private Freight Infrastructure	99-3	Dan Evans, J.D.
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	99-2	George Gray
Maintenance and Continued Development of the IISTPS Transportation Information System, TRANSWEB <sup>TM</sup>	99-1	Sandra BelangerMTI StaffDr. Stephen Kwan

Rail Transit: Issues and Opportunities for the Bay Area and California	F-98-1	MTI Staff
Sustainable Transportation in the 21st Century: A National Videoconference Symposium with Elementary School Children in Support of the Secretary of Transportation's Garrett A. Morgan Technology Futures Program	S-98-1	MTI Staff
Capital versus Operating Grants for Transit: Economic Impacts for California	97-5	Dr. Peter Haas, et al.
Protecting Surface Transportation Systems and Patrons from Terrorist Activities: Case Studies of Best Security Practices and a Chronology of Attacks	97-4	MTI Staff
Toward a Cooperative Future? Labor-Management Relations in Surface Transportation: A Symposium	97-2	
Public Land with Private Partnerships for Transit Based Development	97-1	Dr. Scott Lefaver, et al.
Issues Relating to the Emergence of the Information Superhighway and California Societal Changes	96-4	Dr. Jan Botha, et al.
Development of a Statewide Surface Transportation Network Utilizing the International Transportation Information System	96-3	Sandra Belanger, et al.
Conduct of Background Research for the Establishment of an International Surface Transportation Policy Conference in California—"Global Cooperation Through Transportation: Joining Forces Across Borders	96-2	Gail Murray, et al.
Terrorism in Surface Transportation: A Symposium	96-1	MTI Staff Brian Jenkins
Planning for Surface Transportation and Land Use: A Symposium	95-1	MTI Staff
Assessment of Needs for Management Training and Education in Surface Transportation in the United States and Canada	94-1	Dr. Joe Giglierano Robert Vitale

Publications in print are available from MTI: http://transweb.sjsu.edu San Jose State University Tel: (408) 924-7560 San Jose, CA 95192-0219 Fax: (408) 924-7565

# Education Program

The goal of MTI's Graduate Transportation Management Program (GTMP) is to develop and administer a multidisciplinary, state-of-the-art program via videoconferencing and Internet technologies, consisting of coursework and experiential learning that provides students the skills and knowledge to manage and lead transportation systems.





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#### **Dr. Peter Haas**

Education Director

A member of the GTMP faculty 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. A former director of the SJSU Master of Public Administration Program, he also has consulted at every level of government and for nonprofit agencies. Dr. Haas is the author of numerous reports and other publications in the field of transportation and is the co-author of the text Applied Policy Research: Concepts and Cases. A Fulbright scholar, he also regularly contributes to MTI research projects in a variety of subjects.



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#### Viviann Ferea

Education Program Assistant

Viviann Ferea was appointed as education program assistant (EPA) in August 2000. As EPA, Ms. Ferea is the primary contact for marketing and administration of the Graduate Transportation Management Program. Her many responsibilities include continued efforts to recruit for the certificate and master's programs, revision and maintenance of the website, and course planning and scheduling. Ms. Ferea received her BS in business marketing from UC Davis. Her studies in public relations and experience in media sales enhance her ability to promote the program's continued growth and success.

### Overview

#### **Enrollment Trends**

During Academic Year 2006-2007, the graduate program recorded 122 graduate student enrollments. These enrollments were associated with 60 individual active students. Thirty-nine matriculated Master of Science in Transportation Management students were enrolled during the academic year, and eight program graduates were recognized in June 2007 These numbers are similar to those from the prior academic year, except for a notable increase in the number of matriculated students and a slight increase in the number of graduates. <u>Approximately 60</u> <u>students are expected to register for fall classes</u>, <u>which would represent a significant increase over</u> <u>the previous year</u>.

#### **Summer Transportation Institute**

During July 2006, the Education Program again offered the Summer Transportation Institute (STI). The STI program, which is funded by the FHWA via the California Department of Transportation, is a national effort to provide career orientation and educational experiences to motivate secondary school students toward professions in transportation. The transportation industry needs, and will continue to need, individuals who are prepared to provide the leadership to build and operate the nation's transportation system for the next century. The primary aim of the STI is to encourage high school students - particularly from traditionally underrepresented backgrounds - to seek professional careers in transportation through obtaining a college education. Participants were engaged in a variety of activities including a college-level environmental science class with an emphasis on transportation issues, field trips to a variety of area transportation

centers, guest speakers from the industry, hands-on projects, and related enrichment activities.

As the following testimonials demonstrate, the program is having a positive effect:

- "This email is to let you know how much I valued being a participant at Summer Transportation Institute. I cannot believe how interesting the class lectures, projects and field trips were. I feel that I definitely had experiences that were a once in a lifetime opportunity. ...I would like to continue to my interest in learning more about public policy as it applies to the environment and transportation."
- "The course was absolutely the highlight of my summer! I am a competitive swimmer and gave up my position in Junior Olympics this summer in order to take the class. My coach was not happy, but I feel that I definitely made the right decision!"

#### **Program Accomplishments**

#### **Courses Offered**

In Academic Year 2006-2007, the GTMP offered 11 courses. Class sites follow each course listing below:

#### Fall 2006

MTM 201: Fundamentals of Transportation Management. Caltrans Sacramento HQ, Caltrans D4-Oakland, Caltrans D6-Fresno, Caltrans D7-Los Angeles, Caltrans D10-Stockton, Caltrans D12-Santa Ana, Metropolitan Transportation Authority (MTA)-Los Angeles, Monterey, and San Jose State University (SJSU).

MTM 214: Transportation Policy and Regulation. Students enrolled in D3-Marysville, D4-Oakland, MTA-Los Angeles, and SJSU.

MTM 226B: Security Issues for Transportation Professionals. Students enrolled in D4-Oakland, MTA-Los Angeles, Sacramento HQ, and SJSU.

MTM 203: Transportation Markets and Business Development. Students enrolled in D4-Oakland, D10-Stockton, Monterey, Sacramento HQ, and SJSU.

MTM 215: Transportation Systems and Development. Students enrolled in D4-Oakland, D6-Fresno, D7-Los Angeles, Sacramento HQ, and SJSU.

#### Spring 2007

MTM 202: Introduction to Transportation Funding & Finance. Students enrolled in D4-Oakland, D11-San Diego, Sacramento HQ, and SJSU.

MTM 226A: Emergency Management Issues for Transportation Professionals. Students enrolled in D4-Oakland, D11-San Diego, Sacramento HQ, and SJSU.

MTM 283: Independent Research. Students enrolled in Sacramento HQ and SJSU.

MTM 217: Leadership and Management of Transportation Organizations. Students enrolled in D4-Oakland, Sacramento HQ, D7-Los Angeles, Monterey, and SJSU.

MTM 296B: Labor Relations. Students enrolled in D4-Oakland, D11-San Diego, and SJSU.

MTM 290: Strategic Management in Transportation. Students enrolled in D4-Oakland, Sacramento HQ, MTA-Los Angeles, Monterey, and SJSU.



#### Graduates

The faculty and staff of MTI and the College of Business at SJSU were proud to present the graduating class of 2007 at the 16th Annual MTI Board of Trustees Awards Banquet on June 30, 2007. Eight students earned their MSTM degrees. The dedication of these students is admirable, especially because each of them completed 30 hours of coursework while meeting the duties of full-time professional employment.

The following MSTM graduates were hooded during MTT's banquet. Copies of their capstone research projects are available upon request.

Walter Richard Allen Roger McKean Bazeley Wajahat Nyaz Kenneth Kao Hassen Beshir Glen Mark Collins Andrea G. Glerum Christina Watson

In addition to our MSTM graduates, the following three students received the graduate Certificate in Transportation Management (CTM):

> James I. Ogbonna Kathleen McClaffin Edward Yee

The 12-unit CTM program is rigorous and intense, consisting of four core courses from the MSTM program. These students' hard work and determination during this academic year helped them successfully complete the CTM program. Many students earn the CTM as a meaningful step towards achieving their MSTM degree.

**Continuing Student Performance (CSP) Fellowships** Twice a year, subject to funding availability, MTI awards \$1,000 MSTM Fellowships. Thanks to this generous program, students can continue their studies. In the 2006-2007 Academic Year, more than \$22,000 was awarded through this program to the following qualified MSTM students:

> Roger Bazeley\* Scott Boim John Carlston Said El-Khatib\* Brandi Hall\* Anand Kapoor\* Ryan Kaufmann\*

Robert Navarro\* Wajahat Nyaz\* Lawrence Orcutt Denise Patrick Sadegh Yazdi\* Wesley Zinke\*

\* received multiple awards

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#### **Success Stories**

### MTI Outstanding Student of the Year (Photo of Christina with Mineta)

MSTM student Christina Watson, a senior transportation planner at the Transportation Administration for Monterey County (TAMC), was honored as MTI's U.S. Department of Transportation Student of the Year for 2007 in a ceremony in Washington DC on January 20, 2007. Aside from outstanding academic achievements in the MSTM program, including a 3.95 GPA out of a possible 4.0, Christina has distinguished herself as a transportation professional both in and out of the workplace. Her responsibilities at TAMC include managing the Caltrain Extension to Monterey County project, administering the Transportation for Livable Communities Transit-Oriented Development incentive grant program, and acting as the staff legislative liaison for the agency's state and federal legislative advisors. She also is a volunteer guide at the Monterey Bay Aquarium and is the president of the Monterey Bay Area Chapter of the Association of Environmental Professionals. Christina received a check for \$1,000 and was acknowledged by several transportation luminaries at the Washington ceremonies, including former Secretary of Transportation Norman Mineta. Former MTI Students of the Year have frequently gone on to increasing career success, and MTI is confident that Ms. Watson will follow in their footsteps.

#### **APTA Foundation Award Winners**

Three students from the Graduate Transportation Management Program have been honored by the American Public Transportation Foundation (APTF) scholarship program. APTF provides scholarships to deserving students who will fill future leadership positions in the public transportation industry. The selection criteria included a demonstrated interest in the public transportation industry as a career, academic achievement, and the need for financial assistance.

Denise Patrick, a current MSTM student, received the APTF's top scholarship, the Jack R. Gilstrap Scholarship Award, which carries a \$5,000 prize. A radio dispatcher for the Santa Clara Valley Transit Authority, Ms. Patrick's essay was titled "Quality of Life."

Christina Watson, Valedictorian of MTI's Master of Science in Transportation Management (MSTM) Class of 2007, won a \$1,000 APTF Hall of Fame Scholarship.

Said El-Khatib, a current MSTM student and instructor with the training department at the San Mateo County Transit District (SamTrans), was also awarded a \$1,000 APTF Hall of Fame Scholarship.

#### **Alumni and Student Achievements**

Alva Carrassco, who recently matriculated into the MSTM program after earning her CTM in 2002, was promoted to transit manager at MTA-Los Angeles.

Ryan Kauffman, a current MSTM student, was hired by Google in Mountain View CA as a transportation specialist.

Scott McCay, who recently joined the CTM program, has earned an entry level job with the City of Palo Alto's Department of Planning, Transportation, and the Environment.

CTM alumna Kathleen Zahniser McClaffin is the Native American liaison for Caltrans District 10 (Stockton) and received a Sustained Superior Accomplishment Award.

MSTM alumnae Joanne McDermott and Leanne Provost have been promoted to positions in the Aeronautics Division at Caltrans headquarters in Sacramento. Chris Morfas was named a co-winner of the Pedestrian Safety Advocate of the Year award from America Walks. He is a legislative liaison for the Sacramento Air Quality Management District.

Ted Yurek was promoted to senior planner at Sam-Trans in San Carlos CA.

Wes Zinke is now a local assistance project manager. He will coordinate a SAFETEA-LU program for Caltrans in Stockton CA.

#### Caltrans Chief Visits MSTM Video Classroom

Caltrans Director Will Kempton visited the May 17, 2007 session of MTI Instructor Wayne Tanda's MTM217, Leadership and Management of Transportation Organizations class. Mr. Kempton described his efforts to lead Caltrans by his principles of partnerships, efficiency, and collaboration. He highlighted and recognized the many accomplishments of the Caltrans staff and pointed out the challenges that lay ahead for the nation's largest state DOT. All 28 students were invited to ask questions, with many focused on the leadership and management of Caltrans. Mr. Kempton's honesty and passion made a positive impression on the class.



#### Outreach

The GTMP continued outreach to locate, contact, and attract eligible students. These efforts included site visits to local transportation-related agencies and underserved professional groups. GTMP staff also visited the annual meeting of the California Transit Association in Long Beach and made several onsite visits to Caltrans as well as to the Metropolitan Transportation Authority of Los Angeles. Other sites were targeted for information/recruitment meetings, including:

- Caltrans Department of Planning (Sacramento)
- Caltrans District 4 Education Fair (Oakland)
- Caltrans District 6 (Fresno)
- Caltrans District 7 (LA)
- Caltrans District 10 (Stockton)
- City of San José DOT
- San Joaquin Regional Transit District
- South Bay Transit Official Association



# Appendices

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### Research Associates Policy Oversight Committee (RAPOC)

#### **Chair**

Dr. Asha Weinstein, Urban & Regional Planning

#### **Members**

Dr. Jan Botha, Civil & Environmental Engineering Dr. Ronald Sylvia, Political Science Dr. Joseph Giglierano, Marketing and Decision Science Dr. Taeho Park, Organization and Management Diana Wu, Martin Luther King, Jr. Library

#### **Ex-Officio**

Rod Diridon, Executive Director Trixie Johnson, Research Director Bob O'Laughlin, Federal Highway Administration Ted Matley, Federal Transit Administration Nancy Chinlund, CA Department of Transportation



### Certified Research Associates

**Dr. Gila Albert** Lecturer Holon Institute of Technology

Lewis Ames Program Mgmt. Analyst Municipal Transp. Agency

**David Audsley** Consultant Pinedale, AZ

**Patricia Backer** Aviation & Technology San Jose State University

Arthur Bauer Executive Vice President Californians for Better Transportation

Michael Bernick Counsel Sedwick, Detert, Moran & Arnold LLP

**Dr. Robert Bertini** Civil Engineering Portland State University

Gary Binger, AICP Consultant

Lisel Blash Senior Researcher San Francisco State University

**Dr. Evelyn Blumenberg** Urban Planning UCLA

Marlon Boarnet Planning, Policy & Design UC Irvine **Dr. Earl Bossard** Urban & Regional Planning San José State University

**Dr. Jan Botha** Civil Engineering San José State University

**Dr. James Brent** Political Science San José State University

**Thomas E. Brightbill** Principal CGR Management Consultants

**Dr. Jeffrey Brown** Urban/Regional Planning Florida State University

Bruce R. Butterworth Independent Consultant

Lisa Callaghan Technology Director Breakthrough Technologies Institute

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Chico, University of California at Los Angeles (UCLA), University of California at Berkeley, California Polytechnic State University (Cal Poly) at San Luis Obispo and Pomona, Florida State University, University of Oregon, Portland State University, City College of New York, and University of Buffalo (State University of New York, SUNY).

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