



# Semi-Annual Progress Report Mineta Consortium for Transportation Mobility October 1, 2018-March 31, 2019



**To move is to live.**



## Semi-Annual Progress Report for University Transportation Centers Mineta Consortium for Transportation Mobility (MCTM) Led by San José State University

- **Federal Agency and Organization Element to Which Report is Submitted:**  
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- **Project Title:** Tier I University Transportation Center
- **Center Director:**  
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San Jose State University Research Foundation  
210 N. Fourth Street, 4<sup>th</sup> Floor, San Jose, CA 95112
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- **Reporting Period End Date:** March 31, 2019
- **Report Term or Frequency:** Semi-annual
- **Signature of Submitting Official:** *Karen Philbrick*

## ■ I. Accomplishments

### A. Major Goals and Objectives of the Program

The Mineta Consortium for Transportation Mobility (MCTM), led by the Mineta Transportation Institute (MTI) at San José State University, conducts research, education, workforce development, and technology transfer activities to improve mobility of people and goods and make our nation's transportation system safe, efficient, accessible, and convenient for all.

MCTM unifies and focuses the efforts of four outstanding institutions that represent and support the geographical, cultural, racial, and socioeconomic diversity that makes our nation strong: Howard University; Navajo Technical University; San José State University; and the University of North Carolina Charlotte.

This Consortium was designed to foster synergies between leaders in transportation planning, policy, and engineering, each with a long and distinguished record of accomplishment of visualizing and deploying cutting-edge, multimodal solutions that meet our nation's mobility challenges.

MCTM plans to lead the nation in researching safe, reliable solutions that increase mobility of people and goods and strengthen the nation's economy. To achieve this goal, MCTM will:

- 1) Leverage new technologies and innovative processes to achieve a seamless, multimodal surface transportation system that integrates with other "smart city" investments;
- 2) Create a safer, more reliable, and more resilient surface transportation system that improves equity through increased access to jobs, housing, services, and other opportunities;
- 3) Reduce the impact of transportation on climate change by identifying feasible alternative modes and fuels and innovative ways to reduce vehicle miles traveled;
- 4) Increase access to surface transportation so that people of all abilities and - socioeconomic levels enjoy the same opportunities for learning, living, labor, and leisure; and
- 5) Optimize passenger and freight movements to improve mobility of people and goods through development of more accurate data models and advanced application of analytical tools.

It is not an overstatement to say that transportation of people and goods is the linchpin of our economy. Where human beings are concerned, the difference between having and lacking mobility is no less than the difference between having and lacking opportunity. To that end, MCTM research and activities will use a multidisciplinary approach that addresses the complex nature of today's mobility challenges to advance the body of usable transportation knowledge.

### B. Accomplishments Under These Goals

#### **Research Program**

#### **Emerging Leaders Seed Grant Program**

The Emerging Leader Seed Grant Program engages and develops leadership capacity among junior faculty at San José State University. This program supports faculty in the first five years of

an academic position who are interested in exploring transportation research problems aligned with MTI's research goals and objectives and encourages multidisciplinary participation.

To date, MTI has awarded six seed grants through this program. An emphasis has been made on engaging with faculty outside some of the traditional transportation disciplines (e.g. civil engineering, urban planning, etc.) to broaden MCTM's research portfolio and accomplish our stated goal of using a multidisciplinary approach to address the complex nature of today's mobility challenges.

Three projects are complete and the white papers have been [published to the MCTM website](#):

1. [Integrating Smart Cars in Smart Cities: A Particle Swarm Problem](#)  
Faculty Member: Francesca Favaro, PhD, Assistant Professor, Department of [Aviation and Technology](#)
2. [Improving Demand Modeling in California's Rail Transit System](#)  
Faculty Member: Rui Liu, PhD, Assistant Professor, Department of [Economics](#)
3. [Review of Literature and Curricula in Smart Supply Chain & Transportation](#)  
Faculty Members: Seung Jun Lee, PhD, and Tianqin (Kelly) Shi, PhD, Assistant Professors, Department of [Global Innovation and Leadership](#)

Three additional projects are underway:

1. Older Adults' Perceptions Regarding Transportation Services in San Jose, CA: Access, Barriers, and Innovations  
Faculty Member: Deborah Bolding, PhD, Assistant Professor, Department of [Occupational Therapy](#)
2. Wireless Power Charging of Electric Vehicles Using Resonant Converters  
Faculty Member: Mohamed Badawy, Ph.D., Assistant Professor, Department of [Electrical Engineering](#)
3. Freeways and Farms: Prusch & Taylor Street Urban Farms Study  
Faculty Member: Joshua Baur, Ph.D., Assistant Professor, Department of [Health Science and Recreation](#)

### **Ongoing Research**

Since inception, MCTM has funded 48 research projects. Of these, 27 projects were competitively selected, 6 were identified emerging leader seed grants, and 15 projects were commissioned white papers. Details on all MCTM projects can be found in the [UTC project information sheets](#).

### **Leveraging Federal Funds**

MCTM partners acknowledge the significant investment of federal funds into the consortium and consortium members and individual researchers actively strive to use the federal

investment to secure additional funds. MTI researcher, Gary Hsueh, received a grant from MTI to study automated shuttles ([Project 1822](#)). He was able to leverage that work to obtain additional funding from the Silicon Valley Community Foundation where he will apply the methodology developed using MCTM funds to an application in Santa Clara and San Mateo Counties.

### **C. Dissemination of Results**

MCTM utilizes a diverse array of dissemination methods and media to ensure research results, conference proceedings, and expert interviews reach those responsible for managing change. These methods include publication, seminars, workshops, websites, social media, webinars, and other technology transfer mechanisms. MCTM partners include university transportation centers, federal and state agencies, private industry, and nonprofits.

#### **Consortium Website**

In compliance with the Grant Deliverables and Reporting Requirements for 2016 University Transportation Centers, MCTM has a website that features all consortium activities: <http://transweb.sjsu.edu/mctm/index.html>. This website is updated regularly with event information, media coverage, and research activities.

#### **Media Coverage**

During the reporting period, there were 178 stories featured in print, radio, and television media outlets, bringing the total number of stories for the Consortium to 720 since inception. Links to many of these articles are featured on the [Consortium website](#) and below is a snapshot of activity:

- Metro Magazine (October 12, 2018): [California Could Lose \\$100B in Transportation Revenue if Bill Repealed](#)
- The Seattle Times (October 21, 2018): [A Wake-up Call for Investment in America's Transportation Infrastructure](#)
- Marketplace (October 29, 2018): [California Voters to Have Their Say on Gas Tax Hike](#)
- Washington Post (November 24, 2018): [Are Streetcars Paving the Way for Urban Development? A Study Says Maybe](#)
- Southern California Public Radio (December 3, 2018): [Checking in on National Security and Counterterrorism with Expert Brian Michael Jenkins](#)
- Streetsblog (January 16, 2019): [Transit Systems Must Address Women's Safety Concerns](#)
- Medium (January 31, 2019): [How to Fix the Scooter Parking Problem](#)
- Metro Magazine (February 11, 2019): [MTI Research Assesses Mobility and Equity for Low-income Seniors](#)

- USA Today (February 13, 2019): [High-speed Rail Could Still be a Reality in California – and Elsewhere, Proponents Say](#)
- Construction Equipment Guide (February 18, 2019): [Report Highlights How to Bring More Women Into the Transportation Workforce](#)
- Yahoo! Finance (March 5, 2019): [Why People Pick Public Transit Over Driving](#)
- Associated Press (March 23, 2019): [Greyhound Opens Discussion About Women in Transportation](#)

MCTM uses Meltwater for media monitoring and to assess the reach and geographic distribution of articles that cover the Consortium’s research, personnel, and workforce development activities.

### **Regional Forums, National Summits, and K-12 Workforce Development Initiatives**

During this period of performance, MCTM sponsored fifteen technology transfer activities that reached 1,553 attendees; a selection follows:

#### **Friday Night Live Youth Traffic Safety Summit**

October 6-7, 2018 • Santa Clara, CA: Friday Night Live builds partnerships for positive and healthy youth development, which engage youth as active leaders and resources in their communities. The Youth Traffic Safety Summit was a place for young people from across the state of California to come together for two days to share, connect, create and empower one another to make their local communities safer. MTI conducted a workshop that introduced students to an MTI in progress research project that hits close-to-home and remains a transportation safety issue: the debate over e-scooters or the #escooterstruggle. In a mock community forum that debated the pros and cons of e-scooters, students participated in a role-playing model that required them to use a wide range of skills including: team building, problem solving, public speaking and diplomacy, research skills, active listening, critical thinking, and more. Students took away an understanding of the type of research that MTI does and its relevance to the real world. Additionally, participants learned examples of both the benefits and dangers of broader mobility innovation. Participants gained a respect for safe options regarding all modes of transportation.



#### **Opening of the Mineta Archives at Martin Luther King, Jr. Library**

October 9, 2018 • San José, CA: MTI, in partnership with San José State University and the university library, opened the Mineta Archives, which contain over 50 years of artifacts and documents from Norman Mineta's life as internment camp survivor, mayor, congressman, presidential cabinet secretary, and son of San José.

### **San José Film Premiere *An American Story: Norman Mineta and His Legacy***

October 10, 2018 • San José, CA: Immigration. Detention. Executive Order. Secretary Norman Mineta's American story rings true 75 years after he felt the shame and humiliation as a child in a U.S. concentration camp and went on to seek justice for all Americans while serving 20 years in Congress and in two presidential cabinets. His story hit the big screen in the documentary film, *An American Story: Norman Mineta and His Legacy*, which was followed by a post-screening discussion featuring Secretary Norman Mineta and filmmakers Dianne Fukami and Debra Nakatomi. This was an invitation-only event hosted by the Mineta Transportation Institute in partnership with the Mineta Legacy Project.

### **Norman Y. Mineta: The Life & Legacy of a National Leader and Son of San José**

October 10-December 7, 2018 • San José, CA: The Martin Luther King Jr. Library presented a special exhibit highlighting San Jose Mayor and Secretary of Transportation, Norman Y. Mineta along with other political leaders. MTI sponsored an extended exhibit in honor of Sec. Mineta which was on display for all library patrons for two months in the Special Collections Room.

### **Second Annual Autonomous Vehicles and the City Symposium**

October 15, 2018 • San Francisco, CA: MTI was a proud co-sponsor of this symposium which focused on the many ways that technology and innovation is reshaping how we move through our cities. The event brought together national leaders in business, policy and academia, to dialogue how we can innovate cities in the new mobility future focusing on economic growth, energy and the environment, land use and design, social justice, and management and participatory governance. Continuing education credit through the American Institute of Certified Planners was available for participants.

### **PedsCount! 2018**

October 18-19, 2018 • San José, CA: MTI hosted the 5<sup>th</sup> biennial PedsCount! Summit. This pedestrian summit focused on holistic discussion on how to create more just and equitable communities and how to incorporate new and emerging transportation technologies. Among the topics discussed were the housing crisis, gentrification and anti-displacement, climate change, and aging in place. Major takeaways for attendees included tools, research, and strategies for empowerment and successful community-driven change.

### **Visiting Scholar Series: Transportation Finance and Direct Democracy in California with Dr. Martin Wachs**

October 24, 2018 • San José, CA: For more than one-hundred-years Californians have weighed in on transportation policy decisions, especially transportation funding, through the electoral process. Reliance for transportation revenue on citizens voting to tax themselves has recently peaked and other states are emulating the way we do things in California. Drawing on MTI funded research projects, [The Future of California Transportation Revenue](#) and [What Do Americans Think About Federal Tax Options To Support Transportation? Results From Year Nine of a National Survey](#), Wachs's discussed the implications of ballot box transportation funding and policymaking in California. The event was held at the Valley Transportation Authority headquarters to ensure that cutting-edge research results were getting into the hands of transportation professionals.

### **Visiting Scholar Series: A Guide for the Idealist – Launching and Navigating Your Planning Career with Dr. Richard Willson, FAICP**

November 7, 2018 • San José, CA: MTI hosted a participant driven, interactive workshop to help university students launch their transportation planning and engineering careers. Participants worked closely with Dr. Willson to identify their strengths and weaknesses, their desired career plans, and learned about how to work effectively in a team environment.

### **Sips with Scholars: Dr. Richard Willson on Parking Reform and Affordable Housing**

November 7, 2018 • San José, CA: Access to affordable housing is of critical concern in the Bay Area. However, many do not consider the role that parking plays and how parking policies can impact housing affordability. In this presentation, Dr. Willson led a conversation on this important issue facing the greater Bay Area which is adding jobs to housing at a ratio of 7-to-1.

### **Mobility Leaders Series: A Conversation with Nuria Fernandez**

December 3, 2018 • San José, CA: MTI brought the CEO and GM of the Valley Transportation Authority, Ms. Nuria Fernandez, to SJSU to discuss her diverse career experiences with an invitation-only group of 15 San Jose State students from a variety of disciplines including engineering, transportation management, urban planning, business, and Mexican American Studies. Topics discussed included: managing opportunities, the future of public transportation and micro-mobility integration, immigration, women in the workforce, and climbing the corporate ladder. Students came away with a well-rounded understanding of navigating both the public and private sector from a mobility leader who has demonstrated her unique skillset in both arenas.

### **From Wheels to Safety on the Bus**

December 11, 2018 • San José, CA: MTI partnered with the Valley Transportation Authority to teach 1<sup>st</sup> grade students at a Title I San Jose Unified School about public transit safety. Students then received free transit passes to attend an elementary school field trip.

### **VivaCalleSJ: Showcase of Student Learning**

December 13, 2018 • San José, CA: SJSU students, faculty, and San José Department of Parks, Recreation and Neighborhood Services (PRNS) gathered to illustrate how data collected from the MTI-led assessment of San José's open streets event, VivaCalleSJ 2018, was used to provide new insights into the evaluation content and process. The data demonstrated how City and University collaboration helped build community and social capital in San José as well as enhanced student learning.

### **Education and Career Pathways Day**

January 31, 2019 • Crownpoint, NM: Eight members of the Navajo Technical University team led an all-day Education & Career Pathways Day for 150 students at Crownpoint Middle School to introduce young students to career opportunities in transportation.

### **Santa Clara County Women's Leadership Policy Summit**

February 2, 2019 • San José, CA: MTI was a proud co-sponsor of this event which brought together women for a day of education, engagement, and empowerment. Key panels focused on transportation providing an opportunity for participants to learn about how transit and



transportation plans are developed and funded and understand the role advocacy can play in developing safer communities.

### **Grant Writing 101**

March 16, 2019 • San José, CA: MTI partnered with the Masters of Public Administration program at San José State University to provide a workshop on grant writing led by James Griffith from the Governor's Office of Emergency Services.

### **Student Scholarships**

Each year, MTI hosts an annual awards banquet and convocation celebration to recognize students graduating with their Master of Science in Transportation Management (MSTM) degree. This celebration also serves as a fundraising opportunity whereby MTI secures sponsorships that support scholarships for MSTM students. During this period of performance, and using these sponsorship funds, MTI awarded \$21,500 to deserving students.

#### **D. Plans During the Next Reporting Period to Accomplish the Goals?**

No change to the agency-approved application.

## **2. Participants & Collaborating Organizations**

### **What Organizations Have Been Involved as Partners?**

During this period of performance, MCTM universities partnered with the following:

1. Organization Name and Location: **Alabama A&M University** (Huntsville, AL)
  - Partner's Contribution to the Project: In-kind support (consultation on K-12 workforce development)
  - Project: 2019 Summer Transportation Program
2. Organization Name and Location: **American Public Transportation Association** (APTA-Washington, DC)
  - Partner's Contribution to the Project: In-kind support (meeting space/host and program sponsor)
  - Project/Program: Garrett Morgan Sustainable Transportation Competition & MTI/MCTM Board of Trustees meeting, Washington, D.C.
3. Organization Name and Location: **Bond Wilson Technical Center** (Kirtland, NM)
  - Partner's Contribution to the Project: In-kind support (provided space for meetings; recruited student participants for Pre-Engineering, Welding, and Construction Dual-Credit courses)
  - Project: Developing a Certificate in Transportation Careers
4. Organization Name and Location: **California Department of Transportation** (Caltrans-Sacramento, CA and several district offices)

- Partner's Contribution to the Project: In-kind support (live-streaming broadcast network, mentor for Garrett Morgan Sustainable Transportation Competition, facilities for MSTM classes and Garrett Morgan competition)
  - Project: MTI Masters of Science in Transportation Management & Garrett Morgan Sustainable Transportation Competition
5. Organization Name and Location: **Chinle, AZ High School** (Chinle, AZ)
- Partner's Contribution to the Project: In-kind support (provided space for meeting; planning for transportation-related courses in Spring 2019)
  - Project: Developing a Certificate in Transportation Careers
6. Organization Name and Location: **City of Charlotte** (Charlotte, NC)
- Partner's Contribution to the Project: In-kind support (data pertaining to all major new developments and road construction projects in Charlotte)
  - Project: Modeling the Effect of Developments and Road Construction Projects on Transportation System Performance
7. Organization Name and Location: **City of San Jose Department of Transportation** (San Jose, CA)
- Partner's Contribution to the Project: In-kind support (resources and materials to conduct evaluation of open streets event)
  - Project: An Evaluation of VivaCalleSJ 2018
8. Organization Name and Location: **Crownpoint High School** (Crownpoint, NM)
- Partner's Contribution to the Project: In-kind support (provided space for meetings; recruited student participants for Pre-Engineering and Welding Dual-Credit courses)
  - Project: Developing a Certificate in Transportation Careers
9. Organization Name and Location: **Crownpoint Middle School** (Crownpoint, NM)
- Partner's Contribution to the Project: In-kind support (provided space for meetings; recruited student participants for Garrett Morgan Sustainable Transportation Competition)
  - Project: Garrett Morgan Sustainable Transportation Competition
10. Organization Name and Location: **District Department of Transportation (DDOT: Washington, DC)**
- Partner's Contribution to the Project: In-kind support (access to signal timing data)
  - Project: Predicting Acceptable Wait Times for Patrons at Transit Bus Stops by Time of Day
11. Organization Name and Location: **Metropolitan Police Department (DDOT: Washington, DC)**
- Partner's Contribution to the Project: In-kind support (provided police safety assistant for field data collection)

- Project: Predicting Acceptable Wait Times for Patrons at Transit Bus Stops by Time of Day
12. Organization Name and Location: **Many Farm High School** (Many Farms, AZ)
- Partner’s Contribution to the Project: In-kind support (provided classrooms, computer labs and welding shop)
  - Project: Developing a Certificate in Transportation Careers
13. Organization Name and Location: **Navajo Division of Transportation** (Navajo DOT: Mentmore, NM)
- Partner’s Contribution to the Project: In-kind support
  - Project: Developing a Certificate in Transportation Careers
14. Organization Name and Location: **North Carolina Department of Transportation** (NCDOT: Raleigh, NC)
- Partner’s Contribution to the Project: In-kind support (data pertaining to all road construction projects in and around Charlotte and travel time data)
  - Project: Modeling the Effect of Developments and Road Construction Projects on Transportation System Performance; Modeling Operational Performance on Urban Roads with Heterogeneous Traffic Conditions; and How Effective are Toll Roads in Improving Operational Performance?
15. Organization Name and Location: **Wingate High School** (Fort Wingate, NM)
- Partner’s Contribution to the Project: In-kind support (classrooms, recruited students)
  - Project: Developing a Certificate in Transportation Careers

**Have Other Collaborators or Contacts Been Involved?**

- Several organizations have participated as experts in MCTM summits, conferences and other events. These include but are not limited to AC Transit, California Alliance for Jobs, the International Union of Railways, LA Metro, Metropolitan Transportation Commission, and the Silicon Valley Leadership Group.

**3. Outputs**

- Performance Measures for Research Outputs
  - Number of research presentations at professional meetings and conferences annually.
    - Target goal: 35 presentations annually.
      - A total of 54 presentations were given in this period of performance, details following.
  - Number of views and downloads of research reports as tracked through Google Analytics annually.
    - Target goal: 250 views/downloads monthly.
      - During the period of performance, MCTM research reports were downloaded a total of 7,940 times (approximately 1,323 monthly).

## Published Research Reports

During this period of performance, five research reports featuring the results of MTI-funded research, were published on the MCTM website.

- Brown, J., and Mendez, J. (2018, October). [Examining the Development Effects of Modern-Era Streetcars: An Assessment of Portland and Seattle](#)
- Steele, J. (2018, November). [Not Just an Ache: Examining the Rate of Musculoskeletal Pain in City Bus Drivers](#)
- Sideris, A., Wachs, M., Levy-Storms, L., and Brozen, M. (2018, December). [Transportation for an Aging Population: Promoting Mobility and Equity for Low-Income Seniors](#)
- Godfrey, J., and Bertini, R. (2019, February). [Attracting and Retaining Women in the Transportation Industry](#)
- Kos, R., Frey., N., Chowdhury, M. (2019, February). [2018 Census of California Water Transit Services](#)

## Publications, Conference Papers, and Presentations

During this period of performance, 55 academic and professional presentations and one published conference proceedings featured the results of MCTM-funded research. An additional five presentations occurred in the previous reporting period but had not been included in that report. (Full citations for all presentations available upon request).

Academic Presentations			
Presentation Title	Audience/Conference	Location	Date
*Introduction to ICS for Transportation Professionals	TSA Regional I-Step Exercise, Transportation Security Administration Regional Workshop for New England	Worcester, MA	June 12, 2018
*Using ICS in the Field for Transportation	TSA Regional I-Step Exercise, Transportation Security Administration Regional Workshop for New England	Worcester, MA	June 12, 2018
*Creating ICS Kits	TSA Regional I-Step Exercise, Transportation Security Administration Regional Workshop for New England	Worcester, MA	June 12, 2018
*Transportation Challenges for the Boston Metropolitan Area	Briefing for Massachusetts DOT	Boston, MA	June 13, 2018
*Applying Transportation Technology to Solve Public Issues	SJSU Greentalk Series	San José, CA	September 19, 2018
Stretching Pavement Maintenance Dollars Through Pavement Preservation	Presentation to Northstar Engineering	Chico, CA	October 2, 2018
All Hazards and Operations Approach to Disruptions	TRB RISE Conference	Denver, CO	October 9, 2018
ICS Kits and their Role in Speeding Highway Accident Recovery	Regional ESF-I National Capital Region	Online	October 10, 2018

The Economic Impact of High-Speed Rail Construction in California: An Analysis Using the REMI Model	2018 REMI Users' Conference: Policy at the Crossroads -- Growth and Risk	San Diego, CA	October 10, 2018
ICS Train the Trainer Workshop	Colorado Department of Transportation	Denver, CO	October 11, 2018
Measuring and Doing the Right Things in the Era of Driverless Cars	Autonomous Vehicles and the City Symposium	San Francisco, CA	October 15, 2018
Future of California Transportation Revenue	KALW radio, panel discussion with Carl Guardino and Ethan Elkind	Radio Broadcast	October 15, 2018
Scooters in the City: Rider Behavior of Shared Scooter Riders in San Jose	UC Davis 3 Revolutions Future Mobility Research Workshop	Davis, CA	October 16, 2018
Fires, Floods, Faults, & Flu: Threats to Silicon Valley	Santa Clara Chamber of Commerce and Silicon Valley Red Cross Emergency Preparedness Conference	Santa Clara, CA	October 18, 2018
Failure to Arrive: Current Status, New Developments and Leadership in the Development of Safety Culture	International Railway Safety Council Conference 2018	Dublin, Ireland	October 22, 2018
Green Up	California Asphalt Pavement Association Fall Conference & Equipment Expo	Sacramento, CA	October 24, 2018
Optimizing Agency Funding to Deliver SB 1 Projects	California Asphalt Pavement Association Fall Conference & Equipment Expo	Sacramento, CA	October 25, 2018
Local Climate Action Planning and Urban Goods Movement	Association of Collegiate Schools of Planning	Buffalo, NY	October 25, 2018
Telework and Updates of Housing and Transport Trends	2018-19 South Bay Economic Forecast Conference	Carson, CA	October 25, 2018
Winning the Grant Race—How to Build a Successful Team	2018 CSU Facilities Management Conference	Monterey, CA	October 28-31, 2018
Hazard Monitoring for Autonomous Vehicles Particle Swarm Motion	IEEE Conference on Green Technology and Smart Cities	Long Beach, CA	October 29-30, 2018
Modeling the Effect of a Road Construction Project on Travel Time at Link-level	Dissertation Defense Presentation, UNC Charlotte	Charlotte, NC	October 28, 2018
Link-level Travel Time Prediction Using Artificial Neural Network Models	21st IEEE International Conference on Intelligent Transportation Systems	Maui, Hawaii	November 4-7, 2018
ICS for Transportation Field Supervisors	Utah DOT Annual Conference	Sandy, UT	November 5, 2018
Automated Measurement of Heavy Equipment Greenhouse Gas Emission: The Case of Road/Bridge Construction and Maintenance	General Board Meeting, ASCE Young Member Forum	Oakland, CA	November 7, 2017
Risk and Safety Assessment of Autonomous Air and Ground Systems	Silicon Valley Automotive Open Source MeetUp	San Jose, CA	November 12, 2018
The Future of Transportation Funding	Leonard Transportation Center Regional Mobility Dialogue	Santa Ana, CA	November 13, 2018
Transportation Security & Counterterrorism Measures	Briefing for JR Central	San Jose, CA	November 15, 2018

Foundation Funds: Fast Facts and Best Practices	WTS International Chapter Leadership Training	Orlando, FL	November 15, 2018
Tracks to the Future: The Gen Z and Millennial Vision for HSR (Session Moderator)	APTA Leadership Conference	Washington, D.C.	November 27, 2018
The Future of Transportation Funding	Briefing for the California Transportation Commission	Riverside, CA	December 5, 2018
Thoughts on Regulating PTD Use at SJSU	SJSU Campus Planning Board Meeting	San Jose, CA	December 11, 2018
Pavement Preservation	FWHA Pavement Preservation Expert Task Group Meeting	Oakland, CA	December 12, 2018
Showcase of Student Learning: Viva CalleSJ 2018	City of San Jose, Department of Parks, Recreation and Neighborhood Services	San Jose, CA	December 13, 2018
Smart Growth Equity Calculator	Briefing for representations from California State Agencies including Strategic Growth Council, California Air Resources Board, Office of Planning & Research, Caltrans	Sacramento, CA	December 19, 2018
Climate Change and Sustainability	ThinkPlace Inc. Seminar Series	Canberra, Australia	December 20, 2018
Transport Infrastructure Development for Sustainable Indian Cities: Bridging the Gap between the Research and Practices.	Transportation Infrastructure Projects: Conception to Execution	Roorkee, Uttarakhand, India	January 7-10, 2019
Overarching Role of CEs on Road Transportation Infrastructure and Safety (Keynote Presentation)	Transportation Infrastructure Projects: Conception to Execution	Roorkee, Uttarakhand, India	January 7-10, 2019
Assessing the Effect of Light Rail Transit System on Road Traffic Travel Time Reliability	Transportation Research Board 98th Annual Meeting	Washington, DC	January 14-16, 2019
Effect of Tolls Roads on Travel Time Reliability Over Time	Transportation Research Board 98th Annual Meeting	Washington, DC	January 14-16, 2019
Predicting STOP-sign Compliance at All-Way Stop Intersections in Close Proximity to Signalized Intersections	Transportation Research Board 98th Annual Meeting	Washington, DC	January 15, 2019
Sunday Drivers or Fast and Furious: Speed and Rider Behavior of Electric Scooter Share Users in Downtown San Jose, California	Transportation Research Board 98th Annual Meeting	Washington, DC	January 15, 2019
The Relationship between Streetcars and Development Activity: An Examination of Portland and Seattle	Transportation Research Board 98th Annual Meeting	Washington, DC	January 15, 2019
"Electric Kick Scooters on Sidewalks in Virginia but Not in California? A Review of How States Regulate Personal Transportation Devices"	Transportation Research Board 98th Annual Meeting	Washington, DC	January 16, 2019
"What Do Americans Think About Federal Tax Options to Support Transportation? Results from Year Nine of a National Survey"	Transportation Research Board 98th Annual Meeting	Washington, DC	January 16, 2019

"Mind the Gap...Or Maybe Not? An Analysis of Bicycling and Gender at Open	Transportation Research Board 98th Annual Meeting	Washington, DC	January 16, 2019
"Do They Block the Way in San Jose? Where Do Riders Park Dockless, Shared Electric Scooters?	Transportation Research Board 98th Annual Meeting	Washington, DC	January 16, 2019
21st Century Workforce: Strategies for enhancing productivity and attracting talent in a competitive environment through flexible workplace practices	Telework in the South Bay presentation	Torrance, CA	January 16, 2019
Insider Risk in the Transportation Industry-And Lessons Learned for Any Business	InfraGard Training Webinar	Online	January 29, 2019
Preparation for Surface Treatments	Western Regional Association for Pavement Preservation Workshop	Mission Valley, CA	February 7-8, 2019
Emergency Management Training	City Manager's Office, City of Cupertino	Cupertino, CA	February 13, 2019
Emergency Management Consultation	California State Assembly Local Government Committee	Phone	February 15, 2019
Emergency Management Preparedness	Senator Beall's Office, Community Event	San Jose, CA	February 22, 2019
Options for Funding Transportation: An Evaluation Framework & Recommended Actions for the State of California	Briefing for the California Senate Transportation Committee	Sacramento, CA	February 24, 2019
Slimming the Streets: Traffic Volume and Speed Impacts of a "Road Diet" in San José, CA	2019 California Transportation Planning Conference	San Diego, CA	February 24-26, 2019
Local Government Policy and Planning for Unmanned Aerial Systems	2019 California Transportation Planning Conference	San Diego, CA	February 24-26, 2019
What Safety Surrogate Measures Can be Utilized to Proactively Evaluate Pedestrian and Bicyclist Safety at Signalized Intersections?	2019 Student Research Symposium (SRS), San Diego State University	San Diego, CA	March 1-2, 2019
Developing a Vision-based Intersection Safety Monitoring System for Vulnerable Road Users	2019 Student Research Symposium (SRS), San Diego State University	San Diego, CA	March 1-2, 2019
State Spending and Local Financial Impacts from California's 2017 Wildfires in Napa and Sonoma Counties	American Society for Public Administration	Washington, DC	March 10, 2019
High-Speed & Intercity Passenger Rail Committee: Advocacy Partner Roundtable (Moderator)	APTA Legislative Conference	Washington, DC	March 10, 2019
* Occurred during the previous reporting period, but had not been reported.			

## Published Conference Proceedings

1. Mane, A. S. and S. S. Pulugurtha. (2018). **Link-level Travel Time Prediction Using Artificial Neural Network Models**. 21st IEEE International Conference on Intelligent Transportation Systems, Maui, Hawaii, November 4-7.

## Journal publications

During this period of performance, four journal articles were published.

- Alam, Bhuiyan Monwar, Hilary Nixon, & Qiong Zhang. (2018). Factors Affecting Travel Demand by Bus: An Empirical Analysis at U.S. Metropolitan Statistical Area Level. *Transportation Research Record: Journal of the Transportation Research Board*, <https://doi.org/10.1177/0361198118798714>
- Arhin, S.A., Adam Gatiba, Melissa Anderson, Melkamsew Ribbisso, & Babin Manandhar. (2019). Improving Mobility on Segments with Closely Spaced Intersections in Urban Areas. *Open Journal of Civil Engineering*, 9, 46-56. <https://doi.org/10.4236/ojce.2019.91004>
- DiPetrillo, S., Lubin, A., Loukaitou-Sideris, A., Salehian, C., Gibson, S. C., Williams, K. M., & Green, T. T. (2018). Improving Pathways to Fixed-Route Transit: Transit Agency Practices to Expand Access for All Users. *Transportation Research Record: Journal of the Transportation Research Board*. <https://doi.org/10.1177/0361198118769902>
- Favaro, F.M., Eurich, S.O., & Rizvi, S.S. (2019). The "Human" Problem of Semi-autonomous Vehicles: Understanding Drivers' Reactions to Off-nominal Scenarios. *International Journal of Human-Computer Interaction*. <https://doi.org/10.1080/10447318.1561784>

## Books or other non-periodical, one-time publications

MCTM documents eight publications in this category during this period of performance:

- Grush, Bern, and Niles, John. (2018). *The End of Driving: Transportation Systems and Public Policy Planning for Autonomous Vehicles*. Elsevier.
- Edwards, F. "Cultural Competency and Emergency Management: Flooding in Coastalville" in Knox, C., *Case Studies in Emergency Management*. 2019.
- Edwards, F., D. Goodrich, M. Hellweg, and J. Strauss. "Earthquake Early Warning Systems: International Experience", in Kar, B. and Cochran, D., eds., *Understanding the Roles of Risk Communication in Community Resilience Building*, Taylor & Francis, 2019
- Fang, K., Agrawal, A.W., Steele, J., Hunter, J., and Hooper, A. (2018, November). [Where Do Riders Park Dockless, Shared Electric Scooters? Findings from San Jose, California](#) (MTI Perspective)



- Jenkins, B.M., and Butterworth, B. (2018, December). [Does “See Something, Say Something” Work?](#) (MTI Perspective)
- Francoeur, J. (2019, January). [Managing Cyber Risks & Business Exposure in the Surface Transportation Ecosystem](#) (MTI White Paper)
- Ferrell, C. (2019, January). [Measuring Incremental SB743 Progress: Accounting for Project Contributions Towards Reducing VMT Under California's Senate Bill 743](#) (MTI Perspective)
- Jenkins, B.M., Butterworth, B., Clair, J.-F., and Trella, J. (2019, March). [An Exploration of Transportation Terrorist Stabbing Attacks](#) (MTI Perspective)

### Website(s) or other Internet site(s)

- An MCTM website is maintained at <http://transweb.sjsu.edu/mctm/index.html>
- An MCTM presence has been established, and continues to grow, in conjunction with the existing
  - MTI Facebook page - [www.facebook.com](http://www.facebook.com)
  - Twitter feed - [@MinetaTrans](http://www.twitter.com)

### Technologies or Techniques

Nothing to report

### Inventions, Patent Applications, and/or Licenses:

MTI leads the California State University Transportation Consortium (details provided in a [previous progress report](#)). One of our research partners, Dr. Hamid Rahai, completed a disclosure of discovery for a new process to reduce drag of trucks and transport vehicles with rotary cylinder systems. Use of this process significantly reduces fuel consumption and exhaust emissions. Dr. Rahai was recently [elected as a member of the inaugural class of Senior Members of the National Academy of Inventors](#).

### Other Products

- [Data on traffic volumes, signal timing, lane configuration, and driver compliance](#) for 57 all-way stop intersections in Washington, D.C. was developed and is publicly available through SJSU ScholarWorks archive.
- [Data on building permits in proximity to light rail corridors in Seattle and Portland](#) was developed and is publicly available through SJSU ScholarWorks archive.

## 4. Outcomes

- Performance Measures for Research Outcomes
  - Number of policy changes in the transportation system stemming from USDOT-funded research outputs.
    - Target goal: baseline metric for 2018; target to be established in 2019.
    - Activities:

- MTI researcher, Dr. Frannie Edwards, provided consultation to the California State Assembly Local Government Commission to help develop new policies to improve emergency management and evacuation response during wildfires.
  - At the request of the State of California Senate Transportation Committee, Dr. Asha W. Agrawal briefed committee members on options for funding transportation in the State. She provided an evaluation framework and a set of recommended actions for the legislators.
  - Congressman DeSaulnier invited Dr. Karen Philbrick to participate in an invitation-only policy-discussion roundtable about how to improve transportation in metropolitan regions like the Bay Area given the emergence of new technologies and new business models such as transportation network companies.
  - Santa Clara County Supervisor Cindy Chavez invited Dr. Karen Philbrick to serve on the Women’s Policy Leadership Steering Committee to provide expertise on transportation policy-making for the region.
- Number of practice and/or planning changes in the transportation system stemming from USDOT-funded research outputs.
    - Target goal: baseline metric for 2018; target to be established in 2019.
    - Activities:
      - DDOT (District of Columbia DOT) is reviewing MCTM research on all-way stop intersection configuration; if adopted, would expect to see improved mobility and safety along these urban corridors.

## ■ 5. Impacts

- Performance Measures for Research Impacts
  - Description and evidence of how USDOT-funded research outputs have led to increased mobility of people and goods.
    - Target goal: baseline metric for 2018; target to be established in 2019.
  - Description and evidence of how USDOT-funded research outputs have led to increased safety and/or reliability of the transportation system.
    - Target goal: baseline metric for 2018; target to be established in 2019.

### **What is the Impact on the Effectiveness of the Transportation System?**

- MTI’s Security Perspective, *Does See Something, Say Something Work?*, received broad media attention and recognition throughout the surface transportation industry. Thomas Farmer, Assistant Vice President (Security) for the Association of American Railroads wrote on December 12, 2018, “[m]y sincere appreciation to...the Mineta Transportation Institute, for your unfailingly dedicated and high caliber efforts in support of informed awareness and sustainable security enhancement in surface transportation.”

**What is the Impact on the Adoption of New Practices, or Instances Where Research Outcomes Have Led to the Initiation of a Start-up Company?** Nothing to report

**What is the Impact on the Body of Scientific Knowledge?**

- William Canis, from the Library of Congress and Congressional Research Service, contacted MTI researcher Dr. David Czerwinski to follow-up on his research on transit bus manufacturing
- TRB's 2019 [Critical Issues in Transportation](#) cited MTI-funded research on public opinion regarding transportation taxes and fees.

**What is the Impact on Transportation Workforce Development?**

- MCTM partner, Navajo Technical University, continues to develop a program to directly connect careers in the transportation industry with students in this underserved population. Through the [Career Ready](#) and [College Ready](#) program, students develop an increased awareness of career opportunities in transportation.
- Four students who completed Navajo Technical University's 2018 Summer Program have enrolled in the NTU pre-engineering certificate program designed to provide skills to enter transportation and STEM-related careers.
- Navajo Technical University team members have engaged with Navajo Nation leaders in construction and transportation who have expressed interest in the new programs under development as a way to bring qualified graduates into the workforce to improve the Navajo Nation transportation system.
- Dr. Asha Agrawal (SJSU) received an invitation from U.S. DOT Secretary Elaine Chao to participate in a discussion with the Departments of Labor, Commerce, and Health and Human Services about automation and the workforce on March 20, 2019. This effort is anticipated to lead to a special Report to Congress to be delivered in summer 2019.
- Dr. Hilary Nixon was invited to speak at the U.S. DOT's Intelligent Transportation Systems Professional Capacity Building (ITS-PCB) Academic Workshop regarding best practices in higher education for integrating ITS knowledge, skills and abilities into non-STEM disciplines to ensure that students graduating have the necessary tools for success in the transportation workforce.
- MCTM research projects provide opportunities for undergraduate and graduate students, including students from minority-serving institutions, to learn research methods including data collection and data management skills, data analysis, and report writing skills. They are exposed to transportation and STEM-related careers through their roles as research assistants on MCTM projects.
  - Two Ph.D. students funded through MCTM received their doctoral degrees in December 2018.
  - Two SJSU students funded through MCTM have been selected as finalists to represent the university at the 33<sup>rd</sup> Annual CSU Student Research Competition.

- More than 150 students receive financial support through MTI-funded research (federal funds and leveraged federal funding). This support included tuition, stipends, and paid hourly rates.

## ■ 6. Changes/Problems

- **Changes in Approach and Reasons for Change:** Nothing to report
- **Actual or Anticipated Problems or Delays Encountered:** Nothing to report
- **Changes that Have a Significant Impact on Expenditures:** Nothing to report
- **Significant Changes in Use or Care of Human Subjects, Vertebrate Animals, and/or Biohazards:** Nothing to report
- **Change of Primary Performance Site Location from that Originally Proposed:** Nothing to report