2020

2019-2020 CUTR Annual Report

CUTR

Follow this and additional works at: https://digitalcommons.usf.edu/cutr_annual_reports

Recommended Citation
https://digitalcommons.usf.edu/cutr_annual_reports/12

This Book is brought to you for free and open access by the CUTR Publications at Digital Commons @ University of South Florida. It has been accepted for inclusion in CUTR Annual Reports by an authorized administrator of Digital Commons @ University of South Florida. For more information, please contact digitalcommons@usf.edu.
MESSAGE FROM THE DIRECTOR

This year, the University of South Florida (USF) Center for Urban Transportation Research (CUTR) celebrates 32 years of transformative research, education and technology transfer. From motorcycle safety, public transportation security, and pedestrian outreach to connected and autonomous vehicles, regional planning and complete streets, CUTR remains an industry leader for improving transportation safety and developing innovative solutions to a broad array of transportation problems and challenges! Although the landscape of transportation is evolving, CUTR faculty, staff and students remain on the forefront of new technologies and are working with our partners and sponsors to proactively develop solutions to protect, prevent, and perfect transportation throughout the world.

With over $20 million in annual expenditures, we pride ourselves on delivering relevant, accurate and innovative solutions to our partners. We were honored recently to earn the designation as the first National University Transportation in history in Florida and the Southeast U.S. This funding comes from the U.S. Department of Transportation (DOT) and is supporting the establishment of the National Institute for Congestion Research (NICR) at CUTR. Along with our partnering universities, the University of California Berkeley, Texas A&M University and its affiliated Texas A&M Transportation Institute, and the University of Puerto Rico Mayagüez, we are excited to begin our first year of research, education and technology transfer and share our results! We’re so grateful to the Florida Congressional delegation, the Florida Department of Transportation and many other partners for their support in securing this important designation.

CUTR also prides itself on the amazing success of our students, who are the future leaders in the transportation field. CUTR students provide invaluable assistance to programs while gaining insight into career paths and research. This year, CUTR awarded almost $20,000 in scholarships to provide students the opportunity to focus on furthering their education and research. Three of our students were also designated as Eisenhower Fellows by the Federal Highway Administration, three students were selected for the Summer Transportation Internship Program for Diverse Groups (STIPDG) program, and two of our students were selected as U.S. DOT Students of The Year.
We look forward to connecting and partnering with you in the future. We were proud to present our CUTR Transportation Achievement Award/Florida Transportation Hall of Fame designation to Ysela Llort last year and we hope you will participate in our annual Transportation Achievement Awards event in November 2020. Stay in touch.

Warm regards,
Robert L. Bertini, Ph.D., P.E.

**CUTR Executive Director and Professor of Civil and Environmental Engineering**
rbertini@usf.edu

---

Last year, three long-time employees retired from the CUTR family: Robert Gregg, Dennis Hinebaugh, and Steven Polzin, Ph.D. These former Program Directors dedicated 19, 27, and 30 years respectively to the transportation profession and helped CUTR become the robust research institution that it is today.

*We will miss you and hope you enjoy retirement!*
Since early March, the CUTR team has worked remotely to slow the spread of COVID-19. The programs adapted their work plans to operate at home, but remain in full operation. At the beginning of the outbreak, programs moved items from their offices into their homes for online communications including equipment for web conferencing and webinars.

Every week, CUTR hosts an “All Hands in Meeting” for all employees and students to discuss lessons learned while working at home. These successful meetings are attended by over 50 people each week, and these meetings allow everyone to check in with one another during the pandemic. The Transportation Demand Management Program introduced an online Telework Certificate program that provides training for employees and managers in online, remote environments.

Although we are operating very differently, CUTR remains fully engaged with its research, projects, and each other during this difficult time.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABOUT CUTR</td>
<td>6</td>
</tr>
<tr>
<td>MISSION &amp; VISION</td>
<td>8</td>
</tr>
<tr>
<td>PROGRAM DIRECTORS</td>
<td>9</td>
</tr>
<tr>
<td>AUTONOMOUS-CONNECTED MOBILITY EVALUATION (ACME)</td>
<td>10</td>
</tr>
<tr>
<td>MOTORCYCLE INJURY PREVENTION</td>
<td>12</td>
</tr>
<tr>
<td>ITS, TRAFFIC OPERATIONS &amp; SAFETY</td>
<td>14</td>
</tr>
<tr>
<td>TRANSIT SAFETY AND WORKFORCE DEVELOPMENT</td>
<td>16</td>
</tr>
<tr>
<td>TRANSIT RESEARCH PROGRAM</td>
<td>18</td>
</tr>
<tr>
<td>PLANNING &amp; CORRIDOR MANAGEMENT</td>
<td>20</td>
</tr>
<tr>
<td>TRANSPORTATION DEMAND MANAGEMENT</td>
<td>22</td>
</tr>
<tr>
<td>TRANSIT MANAGEMENT &amp; INNOVATION</td>
<td>25</td>
</tr>
<tr>
<td>FACULTY &amp; STAFF POINTS OF PRIDE</td>
<td>26</td>
</tr>
<tr>
<td>BERTINI LAB</td>
<td>30</td>
</tr>
<tr>
<td>MANESS LAB</td>
<td>31</td>
</tr>
<tr>
<td>CONNECTED AND AUTONOMOUS TRANSPORTATION SYSTEMS LAB</td>
<td>32</td>
</tr>
<tr>
<td>SUSTAINABLE TRANSPORTATION COURSE</td>
<td>33</td>
</tr>
<tr>
<td>USF’S SUSTAINABLE URBAN MOBILITY STUDY ABROAD - NETHERLANDS</td>
<td>34</td>
</tr>
<tr>
<td>USF - ITE</td>
<td>35</td>
</tr>
<tr>
<td>STUDENT SUCCESS</td>
<td>36</td>
</tr>
<tr>
<td>NATIONAL INSTITUTE FOR CONGESTION REDUCTION</td>
<td>40</td>
</tr>
<tr>
<td>NATIONAL CENTER FOR TRANSIT RESEARCH</td>
<td>42</td>
</tr>
<tr>
<td>2019 TRANSPORTATION ACHIEVEMENT AWARDS</td>
<td>44</td>
</tr>
<tr>
<td>2020 TRANSPORTATION RESEARCH BOARD MEETING</td>
<td>46</td>
</tr>
<tr>
<td>2020 USF TRANSPORTATION DAY</td>
<td>48</td>
</tr>
<tr>
<td>GREEN POLICY, CONSERVATION, AND EQUITY</td>
<td>49</td>
</tr>
<tr>
<td>CUTR TRADITIONS</td>
<td>50</td>
</tr>
</tbody>
</table>
CUTR was established in 1988 in the College of Engineering at the University of South Florida, in Tampa, Florida. USF’s largest non-health research center, CUTR is an internationally recognized transportation research, education and technology transfer/training/outreach center, with a focus on producing products and people. Our work supports transportation agencies, the transportation profession and community, and the public. CUTR provides high quality, objective expertise in the form of insightful research, comprehensive training and education, effective technical assistance and in-depth policy analysis, that translates directly into benefits for CUTR’s project sponsors.

CUTR’s faculty of researchers and students combine academic knowledge and extensive “real world” experience in developing innovative, implementable solutions for all modes of transportation. The multidisciplinary research faculty includes experts in engineering, planning, computer science, economics, public policy, public health, and geography. CUTR logs nearly $20 million per year in expenditures through contracts and grants to support its research, education, training and technical assistance missions.
MISSION & VISION

MISSION
CUTR’s mission is to proactively support implementation of innovative multimodal transportation solutions and develop leaders through research, education and action.

VISION
A vibrant, multimodal, multidisciplinary university transportation center that is an exciting place for students to learn and an engaging environment for faculty to conduct compelling research.

VALUES
Safety | Service | Diversity | Sustainability | Mentoring | Global Engagement | Inclusivity | Integrity | Accountability Transparency | Supportive
PROGRAM DIRECTORS

Robert L. Bertini, Ph.D., P.E.
- National Institute for Congestion Research, Director
- Bertini Lab, Program Director
- Center for Urban Transportation Research, Director

Sisinnio Concas, Ph.D.
Autonomous-Connected Mobility Evaluation (ACME)

Chanyoung Lee, Ph.D.
Motorcycle Injury Prevention Program

Pei-Sung Lin, Ph.D., P.E., PTOE, FITE
Traffic Operations and Safety

Victoria Perk, Ph.D.
Transit Research

Lisa Staes
Transit Safety and Workforce Development

Kristine Williams, AICP
Planning and Corridor Management

Philip L. Winters
Transportation Demand Management
AUTONOMOUS-CONNECTED MOBILITY EVALUATION (ACME)

ACME specializes in performing economic analysis and performance evaluation of autonomous and connected transportation solutions. Researchers specialize in advanced econometric methods, traffic engineering and safety, data mining, machine learning and artificial intelligence applications to produce quick response solutions to better inform practitioners and policy makers in selecting and prioritizing cost-feasible alternatives.

During September 2016, the U.S. Department of Transportation (USDOT) initiated three Connected Vehicle Pilot Deployments in Tampa, New York, and Wyoming. The Tampa CV Pilot is deploying a suite of vehicle-to-vehicle (V2V) and vehicle-to-infrastructure (V2I) safety and mobility applications. The $21-million project aims to create a connected urban environment to measure the effect and impact of CV technologies in Tampa’s vibrant downtown.

ACME is leading the performance measurement and evaluation of the Tampa CV Pilot. ACME oversees the collection of data generated by more than 1,000 vehicles traveling to the Tampa central business district, as well as the assessment of the Pilot impact on safety and mobility.

To assist USDOT in tracking and measuring the performance of the CV Pilot, ACME developed a data visualization dashboard, the first-ever interactive CV analytical platform using near-real time data.
ACME researchers developed an algorithm (pending patent no. 62/833322 with U.S. Patent and Trademark Office) that uses CV technology to identify the presence of road debris hazards. Using high-resolution vehicle trajectory data and machine learning techniques, the algorithm accurately identifies the location of road debris. The algorithm leverages the potential of CV technology data and uses driver-swerving behavior to output a heat density map that shows the location(s) of road debris with the assumption that drivers will swerve or change lanes to avoid such debris. The algorithm can be implemented by local traffic monitoring centers to rapidly and cost-effectively dispatch service vehicles to remove the dangerous debris contributing to the safety of our community.
The Motorcycle Injury Prevention (MIP) program at CUTR conducts behavioral traffic safety research and educational outreach to prevent motor vehicle injuries and deaths focused on motorcycles. The MIP program is one of the few research teams in the U.S. with specialized and dedicated resources to explore and study technical and policy approaches to improve motorcycle safety.

The team’s areas of expertise include strategic safety planning, crash data analysis and visualization, epidemiology of motor vehicle collisions and injuries, crash modeling, traffic safety education program development and evaluation, and traffic safety policy including TZD (Toward Zero Death) and regulation development. Additionally, the team has collaborated with community partners to design, administer, and analyze numerous statewide public opinion surveys using various survey techniques.
Currently, the MIP program provides technical and administrative support to Florida’s Motorcycle Safety Program, including facilitating the Florida Motorcycle Safety Coalition and conducting an annual Florida motorcyclist survey. The team is tasked with developing a Florida Motorcycle Strategic Safety Plan (MSSP) in support of the strategies and goals set forth in the Florida Strategic Highway Safety Plan (SHSP). The MSSP provides focused guidance for motorcycle safety and the reduction of motorcycle fatalities, serious injuries, and crashes on Florida’s public roadways by providing a comprehensive strategy to address motorcycle safety issues. In addition, the team has developed and implemented an online motorcycle safety education program, the Mentorship Program for Every Rider (MEPER), that aims to provide an extended learning experience to motorcyclists and promote a complete motorcycle riding experience.

The MIP program also assists with coordination of the Florida Impaired Driving Coalition and provides technical support to analyze and understand various data related to impaired driving. In addition to behavioral traffic safety, the MIP program works to improve the mobility of older adults through the Healthy Buddy Program, a community-based volunteer effort and research initiative to identify local transportation and health resources and tailor information for transportation-disadvantaged older adults. In 2019, the Healthy Buddy Program trained its inaugural group of USF student volunteers and began working in Hillsborough County senior centers. The Healthy Buddy Program is expanding its program to accommodate Hispanic older adults in 2020 and has plans to expand the program further by creating a national level resource center for Hispanic older adults.

Contact MIP Program Director Chanyoung Lee, Ph.D.
ITS, TRAFFIC OPERATIONS & SAFETY

This program actively pursues innovative projects and collaborates with peers to develop and apply new concepts and technologies to solve real-world transportation problems. The expertise of its faculty and staff covers Intelligent Transportation Systems (ITS), Connected Autonomous Vehicle (CAV), traffic operations, transportation safety, and technical training. Additionally, researchers and staff specialize in public education and outreach, public opinion surveys and analysis, graphic design and production, and development of effective paid media campaigns. The ITS program also manages and operates the prestigious Florida Local Technical Assistance Program (LTAP) Center to serve and provide training and technical assistance to Florida local and tribal agencies.

INTEGRATION OF A ROBUST AUTOMATED PEDESTRIAN DETECTION SYSTEM FOR SIGNALIZED INTERSECTIONS

Completed in December of 2019 for Florida Department of Transportation.

This FDOT-sponsored research evaluated selected automated pedestrian detection systems and provided a key step to apply automatic pedestrian detection technologies to further enhance pedestrian safety at signalized intersections and midblock crosswalks, reduce unnecessary vehicle delay, and make roadway facilities safer for everyone.

CAMPUS AUTOMATED SHUTTLE SERVICE DEPLOYMENT INITIATIVE

Completed in June 2019, NCTR Livability PPPR #9, prepared for National Center for Transit Research (NCTR) and FDOT.

This NCTR-sponsored project featured a week-long automated shuttle demonstration held on the USF Tampa Campus. Results from the onboard survey of 500+ riders showed an overwhelmingly positive attitude towards their rider experience during the demonstration and indicated their willingness to use these automated shuttles as a mode for travel on campus. This is a perfect example of the ITS Team’s dedication to researching and demonstrating new and emerging technologies.
Sponsored by FDOT and FHWA, the ITS Team first utilized the national naturalistic driving study (NDS) to prove concept and perform intensive data analysis to assess the effectiveness of key pedestrian feature signs used at signalized intersections. Researchers further conducted pilot implementation and before-after studies to evaluate the implementations of these feature signs. Based on the results of pilot implementations, this research report provides recommendations and guidelines to FDOT and local agencies on how to effectively implement the four major pedestrian feature signs to significantly increase driver compliance and improve pedestrian safety.

FLORIDA LTAP CENTER

Project in progress for FDOT.

The ITS Team is proud to serve the local transportation agencies through the Florida Local Technical Assistance Program. Due to the pandemic, we have transitioned the training from in-person classes to webinar series since March 2020, and have seen some trainings attract over 1,000 participants. Over the past year, the Florida LTAP had about 12,000 training attendees, and achieved 23,000 contact hours.

TESTING AND EVALUATION OF THERMAL CAMERA-BASED AND VIDEO-ANALYTIC SYSTEMS ON WRONG-WAY DRIVING, STOPPED VEHICLES, AND PEDESTRIANS

Completed in October 2019 for Johnson, Mirmiran & Thompson, Inc. and FDOT.

This FDOT District 7-sponsored project evaluated the performance of a thermal camera-based detection system and a video-analytic detection system to help detect wrong-way driving (WWD) vehicles, stopped vehicles, and the presence of pedestrians on freeways, which can lead to severe consequences.
TRANSIT SAFETY AND WORKFORCE DEVELOPMENT

Through our robust training, technical assistance, and research activities, CUTR’s Transit Safety and Workforce Development program is laser-focused on giving public transportation agencies the tools and resources needed to improve operations, maintenance, and leadership functions. Safety is central to our mission – we provide technical assistance and training to ensure compliance with federal and state regulations and standards, including Federal Transit Administration Drug and Alcohol testing requirements, the adoption and institutionalization of Safety Management Systems and associated Public Transportation Agency Safety Plans, and Florida’s operational and safety standards.
Our expansive safety focus includes Emergency Management – whether the threat is a hurricane or a pandemic, we deploy. We provide direct on-site support to our agencies and other first responders and the latest guidance and resources available to navigate all “storms.” In 2020, the world was thrown into COVID-19 mitigation, response, and recovery missions. We were there to support the industry with webinar series, such as the two-part “Emergency Preparedness, Mitigation and Response – COVID-19 and other Pandemics.” We also developed and continue to update COVID-19 – Emergency Management Tips and Practices for Bus Transit Systems.

In addition, to further our support of public transit agencies during COVID-19, we quickly translated many of our instructor-led courses to the virtual environment and we continue to expand this library and our webinar series.

Contact Transit Safety and Workforce Development Program Director Lisa Staes
The Transit Research Program (TRP) is led by a multi-disciplinary research team that specializes in conducting integrated mobility research and technical assistance for a variety of public transportation modes. Areas of expertise include transit planning, bus rapid transit (BRT), economic analysis, transit automation, shared mobility, alternative fuels, program and performance evaluation, research dissemination and outreach, and strategic planning.

TRP uses the National Transit Database (NTD) to inform the development and maintenance of a historical database for transit agencies in Florida on behalf of FDOT. NTD assistance to FDOT also includes the annual provision of data for funding allocations and performance reporting, as well as administration of training to agencies in Florida. The program has provided NTD support to FDOT for nearly 30 years. Program researchers also administer the Automated Transit and Shared Use Network (ATSUN), a partnership with FDOT that serves as a resource for the most current, objective, and innovative research and information on the topic of transit automation and shared mobility services in Florida.

FEDERAL RESEARCH STRATEGIC PLANNING, EVALUATION, AND OUTREACH

TRP provides assistance to the Federal Transit Administration (FTA) through several integrated research-to-practice endeavors, including strategic planning, developing a framework and implementation plan for evaluation of FTA’s research program, and serving as the independent evaluator for multiple federal demonstration grant programs. The team’s administration of FTA’s Information Dissemination and Outreach Program enables FTA to achieve the mandates of authorizing legislation and to communicate the results of FTA projects, programs, and strategy in an effective, consistent, and accessible way to all key stakeholders.

Contact Transit Research Program Director
Victoria Perk, Ph.D.
BUS RAPID TRANSIT

TRP also hosts the National BRT Institute (NBRTI), a joint program of CUTR and FTA that includes training, technical assistance, research, and innovation in the field of BRT. Program staff serve as a resource to transit agencies, consultants, and government agencies that are planning, designing, engineering, building, or operating BRT systems. Program activities include compiling current BRT-related information, providing technical assistance and conference support, conducting research and system evaluations, and testing/demonstrating innovative tools, technologies, or methodologies within the realm of BRT.

ECONOMIC AND ENVIRONMENTAL ANALYSIS OF ALTERNATIVE TRANSPORTATION FUELS

TRP researchers study also studies the economic and environmental benefits of alternative fuels and advanced vehicle technologies to assist local, state, and federal agencies with planning, policy, deployment, and evaluation of these vehicle technologies. The Tampa Bay Clean Cities Coalition, hosted at CUTR, is a U.S. Department of Energy sponsored initiative that works to build partnerships on a local and regional level to advance affordable, domestic transportation fuels and technologies. In partnership with the National Renewable Energy Laboratory, the team investigated the role of advanced transportation fuels for resiliency and explored various strategies employed by transit agencies and public fleets in the Tampa Bay area, including emergency fuel supply, prioritizing fuel use, strategic asset placement, backup power, and fuel diversification and redundancy.

CONFERENCE PLANNING AND TECHNICAL SUPPORT

The TRP team provides support for national, state, and regional conferences in association with industry partners. Program staff planned, developed, and moderated the conference sessions on transit automation and shared use for the Florida Public Transportation Association’s (FPTA) 2020 Mid-Year Professional Development Workshop and the 2020 FPTA Annual Conference. The Program also partnered with the Miami-Dade Expressway Authority (MDX) and the Tampa Hillsborough Expressway Authority (THEA) to plan the 7th Annual Florida Automated Vehicle (FAV) Summit in Miami, Florida. The Summit brings together industry leaders and experts to discuss the implementation and deployment of automated, connected, electric, and shared mobility technologies. CUTR has been involved with the Florida Automated Vehicle Summit since its inception in 2013.
PLANNING & CORRIDOR MANAGEMENT

For over 20 years, the Planning and Corridor Management program has delivered high-quality applied research, policy development, training and technology transfer services for public, nonprofit, and private sector clients on a range of contemporary transportation planning topics. Program focus areas include access management, equity and health, metropolitan transportation planning, multimodal planning, and public involvement.

ACCESS MANAGEMENT

As authors of the TRB Access Management Manual, our faculty are international leaders in access management. We provide training and technical support to transportation agencies in the U.S. and abroad interested in developing or updating access management and right-of-way preservation plans, policies and regulations.

NCHRP Synthesis 549: Incorporating Roadway Access Management into Local Ordinances:

Published in 2020, documents regulatory tools and practices used by local governments to implement access management, and provides examples of how state transportation agencies are coordinating with local governments to advance access management objectives.

METROPOLITAN TRANSPORTATION PLANNING

Our program provides research and staff support to the Florida Metropolitan Planning Organization Advisory Council (MPOAC) and intensive training for MPO elected officials. We also conduct research on regional coordination, MPO organizational structure and staffing, programming and system development, funding, and performance measurement.

MPO Regional Coordination Structure Research & Best Practices for the Tampa Bay Region:

This project provided support to six MPOs that make up the Tampa Bay region as they explored organizational options and identified a preferred framework for improving regional coordination.
MULTIMODAL PLANNING

Our multimodal planning research offers a path to innovation for agencies seeking to advance their transportation policies, plans and procedures. Services include statewide policy research, planning and regulatory models, impact assessment and mitigation guidance, and technology transfer.

Assessment of Planning Risks and Alternative Futures for the Florida Transportation Plan Update:
This award-winning project engaged faculty and graduate students across Florida in interdisciplinary research on planning risks and alternative futures to inform the update of the Florida Transportation Plan (FTP) and help FDOT understand how to address risk and uncertainty in long-range transportation planning.

PUBLIC INVOLVEMENT

Public involvement has been an ongoing research focus area since the early 1990s. Services include state of the practice assessments, best practices research, and public involvement performance measurement.

2018 Assessment of the Practice of Public Involvement in Florida
This update of a 2006 study documents the current state of the practice in Florida relative to public involvement in transportation decisions and suggestions for strengthening the process.

TRANSPORTATION EQUITY AND PUBLIC HEALTH

Our program is making significant contributions to the growing body of work in transportation equity and public health. Our research has produced best practice guides, tools, toolkits, and other resources to assist transportation agencies in advancing equity and health in decision-making processes.

Integrating Equity into MPO Project Prioritization:
This research documents effective methods used by MPOs in project prioritization with a focus on improving access to opportunity for communities of concern. The study explores 35 case examples across the nation, including 16 in Florida, and reviewed numerous project prioritization methods relevant to equity.

Transportation Equity Toolkit:
This toolkit, once completed, can be used by transportation planning agencies and community partners to advance equity in transportation planning. Equity based tools and guidance for needs assessments and project prioritization bring communities of concern (COCs) to the forefront of transportation planning decision-making and ensure a more equitable transportation system.

Contact Planning & Corridor Management Program Director Kristine Williams, AICP

Transportation Equity Scorecard – A Tool for Project Screening and Prioritization developed by CUTR faculty.
TRANSPORTATION DEMAND MANAGEMENT

The most cost-effective way to solve a transportation problem is to manage demand. CUTR’s Transportation Demand Management (TDM) program focuses on helping communities and employers change their travel behavior. The program’s balanced portfolio of research, technical assistance, and workforce development help them meet their travelers’ needs by using different modes, departing at different times, making fewer trips or shorter trips, or taking different routes. CUTR has the nation’s largest and most comprehensive TDM research program, ranging from Incorporating TDM into the Land Development Process to developing the TRIMMS model for estimating the impact of TDM to developing patented technologies for global positioning system-enabled mobile phones to track travel behavior. Our technical assistance efforts include managing Best Workplaces for Commuters, which recognizes and supports employer-provided transportation services; operating the Florida TDM Clearinghouse; administering a 2,000+ member TRANSP-TDM listserv to foster peer-to-peer exchanges; and advancing safety by conducting targeted bicycle and pedestrian safety educational outreach programs to community groups. Our workforce development component offers nationally recognized Commuter Choice Certificate, Social Marketing in Transportation Certificate, and Telework Certificate training programs. This multifaceted approach means communities get the benefits of the access to cutting edge research, rapid response to questions from peers, and increased performance from training.
RECENT PROJECTS

MEDIA FRAMING OF FATAL BICYCLE CRASHES IN HILLSBOROUGH COUNTY: A CRITICAL DISCOURSE ANALYSIS

Words matter in identifying problems and providing policy and programmatic responses to them. This research examined the linguistic choices that frame the relationships between bicyclists and other parties involved in fatal crash events. Textual data were collected via media reports of bicyclist traffic fatalities between January 2009 and June 2018 in Hillsborough County, Florida, which has a disproportionately high number of bicyclist and pedestrian deaths compared to other metropolitan areas of the United States. The reports were coded with qualitative data software for repeated textual features and analyzed using critical discourse analysis (CDA), a rigorous qualitative method used to analyze both oral and written communication. Through CDA, the researchers examine how linguistic choices produce meaning and reinforce the “common sense” or “taken for granted” lexicon of transportation.

TAMPA BAY COMMUTER ASSISTANCE PROGRAM REGIONAL DEVELOPMENT PLAN

The TDM Team is preparing the Tampa Bay Commuter Assistance Program Regional Development Plan (CAPRDP) to raise the profile of transportation demand management strategies in the Tampa Bay region, as a means to efficiently achieve long-range planning goals and objectives. The CAPRDP will propose recommendations for alternative regional TDM program scenarios, with estimated performance results and associated implementation costs.

FLORIDA COMMUTER CHOICE TRAINING

Florida Commuter Choice Training is a broad and flexible program of training in transportation demand management (TDM) for commuter assistance programs, transportation management associations/organizations and public transit systems. The training program is customized to meet the changing needs of these stakeholder groups. The Commuter Choice Certificate, initiated nearly 20 years ago and sponsored by FDOT, is the country’s only continuous running training program for TDM professionals with several hundred participants. Most of the 30+ courses are instructor-led and web-based. Recognizing that influencing behavior requires a better understanding of how people change and also how to help people in their efforts to change, we partnered with the USF’s Florida Prevention Research Center in the College of Health to create the Social Marketing in Transportation Certificate. This certificate can help transportation professionals who are looking to reduce congestion and improve access by increasing carpooling and transit ridership, or seeking to reduce pedestrian injuries and fatalities. In 2020, we introduced the five part Telework Certificate to support managers of teleworkers as well as teleworkers in response to COVID-19.
TDM TECHNOLOGY TRANSFER

We foster an active peer-to-peer exchange through the Florida Commuter Transportation Summit, tdm listserv, and a robust webinar series through our Best Workplaces for Commuters and the Florida TDM Clearinghouse programs. We are proud of our academic credentials and accomplishments, but we do not treat projects as academic exercises. The TDM team has 17 patents in place, and is quite familiar with the process. CUTR is well-positioned to further all of our clients’ T2 goals from ideation to outreach to commercialization.

Improving the Quality and Cost Effectiveness of Multimodal Travel Behavior Data Collection

Multimodal transportation such as transit, bike, walk, transportation network companies (TNCs) (e.g., Uber, Lyft), car share, and bike share are vital to supporting livable communities. However, current data collection techniques for multimodal travel behavior, including apps built specifically for travel behavior surveys, have limitations (e.g., significant negative impact on battery life, user acquisition) that prevent a better understanding of significant real-world challenges (e.g., multimodal traveler choices, relationships between travel behavior and health).

In this project, the research team developed and deployed a proof-of-concept system to collect multimodal travel behavior data on an ongoing basis directly from users of a popular open-source mobile app for multimodal information, OneBusAway (OBA). An update to the OBA Android app was released to almost 700 beta testing users. Over 10 weeks, about 10% of these users opted into the study without any incentive and they contributed nearly 66,000 trips. Key concerns for data collection when conserving battery life are the timeliness and accuracy of data. Location data was collected for 86% of all origins and destinations. Most delays in location acquisition when starting or ending an activity were under a few minutes (e.g., 90th percentile of delay at origins was 3.2 minutes and the 68th percentile was 14 seconds). The locations for trip origins and destinations were accurate approximately to a building-level or better – the 95th percentile of estimated accuracy was approximately 48 meters. The software deployed in this project is a promising new tool with a tradeoff of reduced data density for the ability to collect data from many users for longitudinal studies with little to any incentives required.
TRANSPORT MANAGEMENT & INNOVATION

The Transit Management and Innovation (TMI) program provides practical technical support, transit management services, and research to transit agencies and local governments, specializing in service planning and operational matters, capital and operating analysis, project management, public involvement, and grant management. Research conducted includes operational procedures, technology applications, and urban and rural mobility and data analysis. Additionally, the TMI program is responsible for managing the Florida Transit Planning Network (FTPN) and the Florida Transit Marketing Network (FTMN) supported by FDOT.

UNIVERSITY TRANSPORTATION AND OPERATIONS

This project performed an operations analysis of the USF Bull Runner routes and system. The project included examined operating costs, route optimization, capital investment needs, peer university analysis and funding models and assessments.

EVALUATION OF ON-DEMAND SERVICES FOR INDIVIDUALS WITH DEVELOPMENTAL DISABILITIES (IDD)

This project identified and analyzed performance metrics of on-demand service for persons living with physical and intellectual disabilities. The project was the basis of a report sent to Florida State legislatures to evaluate a pilot project.

IMPACT OF ON-DEMAND SERVICES ON MOBILITY OF ADA CLIENTS

This project is for transit agencies seeking to rein in costs associated with demand response service by investigating the impact of on-demand services on customer experiences and costs. The report aims to address the feasibility and sustainability of on-demand services to ADA customers.

Chart from the Evaluation of On-Demand Services for Individuals with Developmental Disabilities (IDD).
CUTR awarded $7.5 million to open a national University Transportation Center focused on congestion, the National Institute for Congestion Reduction.

Learn More

Congressman Ross Spano visits CUTR to discuss the future of transportation.

Learn More

CUTR Director Robert Bertini, Ph.D. appointed as chair of Tampa Bay Transportation Committee.

Learn More

Susan A. Bracken Faculty Fellow Xiaopeng Li, Ph.D. research group receives NSF grant.

Learn More
Senior Research Associate Jodi Godfrey elected as Secretary of the APTA Bus Safety Committee. 

Learn More

CUTR’s Chanyoung Lee, Ph.D. receives Outstanding Contributions & Dedication Award. 

Learn More

Together with FSU and UF, USF MURP and CUTR received the APA Florida Student Project Award for research in support of the FDOT Future Transportation Plan update. 

Learn More

CUTR’s THEA CV Pilot earns ITS World Congress Hall of Fame Americas Winner distinction. 

Learn More
CUTR Program Director Philip Winters, TDM-CP earns “TDM – Certified Professional” – one of the first to earn this designation.

Learn More

Program Director Kristine Williams, AICP receives Emeritus Member status by the Standing Committee on Access Management.

Learn More

U.S. Representative Kathy Castor visits CUTR to learn more about NICR – Representatives Castor and Ross Spano were both integral to the UTC grant (NICR) being awarded to CUTR, and we are extremely grateful for their support!

Learn More

U.S. Representative Daniel Webster visits CUTR to learn more about AV technologies.

Learn More
Susan A. Bracken Faculty Fellow Xiaopeng Li, Ph.D. earns USF’s College of Engineering’s 2020 Outstanding Research Achievement Award.

Program Director Pei-Sung Lin, Ph.D. wins Outstanding Student Organization Advisor Award for his involvement with USF-ITE.

CUTR Research Associate Jason Jackman teaches bicycle safety to USF students.

Cong Chen, Ph.D. honored as the 2019 Tampa Bay ITE Young Professional of the Year.
BERTINI LAB

Dr. Bertini’s research team focuses on sustainable transportation solutions, traffic flow theory informed by empirical and experimental measurements, intelligent transportation systems (ITS), multimodal transportation “big data” for improving performance measurement, planning and operations, and proactive traffic management and operations.

LORI PALAIOT’S RESEARCH:

- Investigating the effects of special calendar days on system-level bikeshare ridership on a multi-city level.
- Reviewing large data platforms to improve bicycle repositioning during special days and special events and assist city planners and engineers determining the most feasible time to maintain and clean bicycles.

BRIAN STAES’ THESIS RESEARCH:

- Identifying, verifying, and determining bottlenecks and their features that were observed on SR-91 (Florida’s Mainline Turnpike) during the evacuation for Hurricane Irma.
- Investigating autonomous vehicles shuttle routing methodology for universities to use if they plan to test or operate AV shuttles on campus with the goal to utilize available university data (parking inventory, classroom enrollment location, university transit stops and residential halls) and eliminate the need for surveys.

PHD STUDENT EREN YUKSEL RESEARCH:

- Analyzing inductive loop detector data to diagnose bottlenecks on I-5 in the Portland, OR area to better understand what triggers bottlenecks.
- Visualizing traffic stream data for heavy vehicles in order to be able to see the effect of heavy vehicles on a traffic streams.
- Forecasting future traffic conditions using machine learning techniques to adjust traffic before congestion.
Established in 2019, the Socially-Inspired Mobility Modeling Laboratory is led by Michael Maness, Ph.D. His research program centers on exploring the social sustainability and social resilience of society’s technical systems by incorporating social interactions into behavioral modeling. Recently, the lab has conducted three surveys across the areas of leisure activity behavior, electric vehicle charging behavior, and attitudes toward autonomous vehicles and ridesharing.

Contact Michael Maness, Ph.D.
Established in 2019, the Connected and Autonomous Transportation Systems (CATS) Lab is led by Susan A. Bracken Faculty Fellow Xiaopeng Li, Ph.D. The CATS lab houses two full-scale connected autonomous vehicles (CAVs) equipped with the CARMA 3.0 platform and associate infrastructure control units. Currently, the CATS lab has conducted a number of field tests, partnering with SunTrax, USF, Busch Gardens (including their Henderson Field, an old airport runway), Tampa Uptown District and other facilities. With the support of these facilities, Dr. Li and his students have continuously worked on a number of research projects sponsored by agencies including NSF, USDOT, FDOT, UTCs and Connected Wise LLC. The research topics include CAV control and modeling on both freeways and arterials, traffic trajectory analysis, and transportation systems analysis.
**SUSTAINABLE TRANSPORTATION COURSE**

The Sustainable Transportation class is a graduate course for students in engineering, urban planning, and global sustainability that includes an overview and analysis of concepts and designs for sustainable transportation. From both a global and local level, this interdisciplinary course explores safety and planning for all road users including pedestrians, bicyclists, and public transportation. The Sustainable Transportation course also addresses economic and environmental factors with a strong focus on equity.

Each year, there is an in-depth, hands-on complete streets project designed by students in the class. In spring 2020, the class partnered with the University of South Florida’s Community Sustainability Partnership Program in collaboration with Manatee County’s transportation planning efforts. Manatee County selected several corridors for the student groups to provide corridor retrofitting concepts to help improve accessibility, safety, and community. The students redesigned the corridors based on concepts and treatments they learned in class; the projects bring new life to the community and maximize new opportunities for Manatee County to incorporate sustainable transportation into comprehensive planning efforts.

For the students, the class offers assignments to create new corridor designs, build teamwork experience, and articulate their designs and recommendations to a panel of local transportation experts. As transportation systems, policies, and guidelines continue to evolve in Florida and around the country, it’s a never-ending effort to keep students, employers, employees, and the public up-to-date with these changes. Education is an important approach through which states, counties, and cities can implement their transportation efforts.

Contact Jason Jackman
USF’S SUSTAINABLE URBAN MOBILITY STUDY ABROAD - NETHERLANDS

In 2019, CUTR Director Robert Bertini, Ph.D. led USF’s Sustainable Urban Mobility course in the Netherlands. This two-week course is an immersive experience in the city of Delft, and it teaches how the pedestrian, bicycle, public transportation, water, and auto modes can work together to create sustainable urban mobility.
**USF - ITE**

**USF ITE Student Chapter** is a branch of the University of South Florida Student Government. The chapter is composed of full-time, part-time, and cooperative students enrolled in the College of Engineering with the shared interest of transportation. USF ITE has over 290 members and they host a variety of academic and social events throughout the year. USF ITE welcomed 153 students to the spring 2019 event and 142 to the fall event. More than 150 students participated with USF ITE’s booth and activities during USF’s 2020 Transportation Day.
CUTR prides itself on student involvement and success. CUTR students earned several prestigious awards and scholarships due to their dedication to the fields of planning and transportation. Many students work closely alongside researchers to investigate and solve complex issues within Tampa Bay communities, the state of Florida, and the country! We are honored to have such dedicated students.

The University of South Florida team placed second in the ASCE Blue Sky competition during the 2020 ASCE Southeast Regional Student Conference at the University of Central Florida.

CUTR students participate in the 2020 Student Leadership Summit at Florida International University.

Kevin Dennis honored as the National Center for Transit Research (NCTR) Student of the Year.

Three USF College of Engineering transportation students received the prestigious Dwight David Eisenhower Transportation Fellowship Program fellowship: Trang Luong, Lori Palaio, and Brian Staes.

Learn More
Student researcher Brian Staes named the Center for Transportation Equity, Decisions, and Dollars (CTEDD) Student of the Year.

USF team selected as one of three regional finalists for ITS World Congress Global Challenge.

Learn More

Divyamitra Mishra, Rakesh Rangaswamy, Nazmus Sakib, Brian Staes, and Eren Yuksel participate in the 2019 Transportation Technology Tournament in Austin, Texas.

Learn More

USF ITE participates in the 2019 Tampa Transportation Supersession.

Learn More

CUTR student researchers gather together at TRB 2020 in Washington D.C.

Learn More
2019 Automated Vehicles Symposium (AVS) in Orlando, Florida.

Learn More

ITE workshop at Albeck Gerken.

FRIDAY TRANSPORTATION SEMINAR SERIES

Every Friday during the fall and spring semesters at 12pm EST, CUTR hosts the Friday Transportation Seminar Series. Engineers, urban planners, student researchers, and members from the transportation community present innovative ideas and new findings. These seminars are available to stream online.
GARRETT MORGAN DAY

CUTR participates in the annual COMTO Garrett A. Morgan Youth Career Shadow Day. The program was developed by Rodney E. Slater, former United States Secretary of Transportation, in honor of Garrett A. Morgan, a significant African American inventor and community leader. Teaming up with local transportation agencies, CUTR hosts middle and high school students for a day of transportation education and explains the exciting career opportunities in transportation. In 2019, HART transported students in its newly wrapped bus celebrating African American transportation pioneers and innovators.

View more photographs

COMMUNITY OUTREACH

CUTR participates in several outreach events throughout the year. In 1999, CUTR began a partnership with Pasco Healthy Families that works with families in need. Our CUTR employees also adopt families for a Back to School drive in August; K-12 students receive supplies for their upcoming school year. During Thanksgiving, CUTR collects food for Feeding Tampa Bay. In 2019, CUTR collected 344 pounds of food, providing 287 meals for members in the community. For over 21 years, CUTR has provided gifts for children in the Tampa Bay area during the holiday season.

View more photographs
In July 2019, **CUTR was awarded $7.5 million from the U.S. Department of Transportation to open its own University Transportation Center.** CUTR, along with partners from the University of California Berkeley, Texas A&M University and the University of Puerto Rico at Mayagüez will form innovative solutions to transportation issues under the **National Institute for Congestion Reduction (NICR)**. With our partners, NICR consists of 54 distinguished faculty: 46,000 citations, 1,400 conference presentations, 600 journal presentations (since 2014), and 450 reports. CUTR was one of 50 applicants for the grant, and the NICR projects are underway.

**MISSION STATEMENT:**

The National Institute for Congestion Reduction (NICR) will emerge as a national leader in providing multimodal congestion reduction strategies through real-world deployments that leverage advances in technology, big data science and innovative transportation options to optimize the efficiency and reliability of the transportation system for all users. Our efficient and effective delivery of an integrated research, education, workforce Mission Statement development and technology transfer program will be a model for the nation.
NICR’s aim—to optimize the efficiency and reliability of travel for all transportation system users—will serve as the overarching Topic for all activities. It will be supported by two additional Topics: data modeling and analytical tools to evaluate the effects of shifting transit incentive structure; and ridesharing and alternative forms of transportation. Our research will include 17 projects grouped under four Pillars and aligned with the three specified Topics. This alignment provides NICR with a cohesive and strategically-focused research plan starting from day one. This plan will propel NICR into a position of national leadership, along with our state DOTs and other partners, in addressing the crisis of passenger and freight congestion for all Americans—ensuring equitable access to underserved populations in a range of land use contexts.
The National Center for Transit Research (NCTR) is a program of CUTR in partnership with Texas A&M University, University of Illinois at Chicago and Florida International University. In September 1999, NCTR was established as a program by the U.S. Department of Transportation’s Research and Special Programs Administration (RSPA). NCTR was competitively selected as a Tier I UTC in 2002, and in 2006. In 2011, NCTR was selected as a Tier I Transit Focused UTC, and in 2013 NCTR was selected as a Livable Communities Tier I UTC. NCTR’s activities will end on September 30, 2020.

NATIONAL CENTER FOR TRANSIT RESEARCH

• Campus Automated Shuttle Service Deployment Initiative Photos
• Florida’s Public Transit and Women’s Safety – Real and Perceived Concerns
• Improving the Quality and Cost Effectiveness of Multimodal Travel Behavior Data Collection
• Improving Transportation Access to Health Care Services
• Increasing the Desirability of Transit and All Other Travel Choices via Best Workplaces for Commuters
• Enhancing Cybersecurity in Public Transportation

View the NCTR Project Archive
Since 2010, CUTR has hosted the biweekly CUTR Transportation Webcast Series and completed a total of 178 webinars. The webinars were scheduled every other Thursday at 12pm (ET) to accommodate attendee participation from across the country and provide a standing appointment for when webinars occurred. Webinar series presenters included those from private industry; students, researchers, and faculty members from CUTR; and university faculty and staff from around the globe. While most of the presentations were based in the United States, we did coordinate a presentation from Australia. The webinars provided the presenters an opportunity to share completed research and best practice strategies on topics in all areas of transportation. Additional topics were selected from completed National Center for Transit Research (NCTR) reports and Journal of Public Transportation (JPT) articles.

The Journal of Public Transportation is an international peer-reviewed open access journal containing original research and case studies associated with various forms of public transportation and related transportation and policy issues. Topics are approached from a variety of academic disciplines, including engineering, planning, economics, geography, public policy, political science, and others, and include policy, methodological, technological, and financial aspects. Emphasis is placed on the identification of innovative solutions to complex public transportation problems.
The 2019 Transportation Achievement Awards was held Thursday, November 7, 2019, and it was the second-highest-grossing event in CUTR’s history! CUTR was thrilled to host several transportation officials including U.S.DOT Deputy Assistant Secretary Diana Furchtgott-Roth, Secretary of the Florida Department of Transportation Kevin J. Thibault, Florida Department of Transportation District Seven Secretary David Gwynn, and many, many others!

Awarded to an outstanding student who will become a future public transportation professional with a goal to build strong public transportation systems via workforce development programs to prepare for tomorrow’s multimodal challenges and opportunities, the National Center for Transit Research (NCTR) Student of the Year Award was presented to Kevin Dennis.

Educating students for careers in transportation is vital to enhancing the quality of life for our state and the nation. To assist in that education, and to help attract the best and brightest to careers in transportation, CUTR established the Georgia Brosch Memorial Transportation Scholarship, named in memory of the infant daughter of former CUTR Director Gary Brosch and his wife Barbara. In 2019, CUTR presented the highest amount of scholarships in the history of the Transportation Achievement Awards.

**Georgia Brosch Memorial Scholarship Winners:** Tobias Coon, Alayna Delgado, Andrew Gray, Lori Palaio, Brian Staes, Yu Wang, and Chunfu Xin.

---

**2019 Transportation Achievement Awards Poster Competition Winners:**
- 1st place: Hualong Tang, Chunfu Xin
- 2nd place: Rakesh Rangaswamy
CUTR is partnering with the Women’s Transportation Society (WTS), Central Florida Chapter of Conference of Minority Transportation Officials (COMTO) and Institute of Transportation Engineers (ITE) to recognize an individual at an earlier stage in their career who is demonstrating leadership in the transportation profession with significant potential for making an impact on transportation in Florida. We hope that this award will be a suitable companion to the Hall of Fame Award, and that it will help us to celebrate the diversity within our profession and that the recipient will inspire others to achieve excellence. We were excited to present the 2019 New Voice in Transportation Award to Sophia Villavicencio-Ortiz of VHB.

The Florida Transportation Hall of Fame Award was designed in 2003 for the CUTR Advisory Board to recognize individuals who have made significant contributions to Florida transportation. Recipients are nominated by the CUTR Advisory Board in the Spring of each year and are honored at the Awards event in the Fall that recognizes their significant transportation leadership, insight, and innovation throughout their distinguished careers. We were honored to present the 2019 Transportation Achievement Awards to Ysela Llort of Renaissance Planning.

2019 Transportation Hall of Fame Awardee: Ysela Llort of Renaissance Planning

Save the Date for the 2020 Transportation Achievement Awards | Thursday, November 12, 2020

COVID updates and sponsorship information

Click here to more photographs from the event.
CUTR was excited to participate in the Transportation Research Board (TRB) 2020 Annual Meeting in Washington, DC, which was held Sunday, January 12 – Thursday, January 16. CUTR has been actively involved with TRB since its establishment in 1988, providing 31 years of commitment to exploring ideas, breakthroughs, challenges, and solutions for building livable communities with transit through a strong, engaged, and growing network of industry leaders. Numerous CUTR faculty researchers serve as TRB committee and subcommittee chairs, and participation by our faculty and students in TRB Annual Meetings includes serving as panel moderators and session organizers, chairing sessions, serving as speakers and panelists, chairing poster sessions and making poster presentations, and authoring papers for publication. In addition, many of our researchers and students have been recipients of annual TRB awards. CUTR was proud to co-sponsor the fourth TRB Reception and Alumni Reunion with ENSCO - Engineering, Science, and Advanced Technology. It was held on Sunday, January 12, 2020, from 5:00 pm - 7:00 pm at Zaytinya restaurant.

CUTR student Kevin Dennis was honored as the National Center for Transit Research (NCTR) Student of the Year while Brian Staes earned the distinction as the Center for Transportation Equity, Decisions, and Dollars (CTEDD) Student of the Year.

39 CUTR/USF EMPLOYEES AND STUDENTS INVOLVED ON THE 2020 PROGRAM:
- 15 LECTERN SESSION SPEAKERS
- 21 POSTER PRESENTERS
- 1 WORKSHOP PRESENTER
- 1 WORKSHOP CHAIR
- 2 COMMITTEE CHAIRS
- 1 TASK FORCE CHAIR
- 2 LECTERN SESSION CHAIRS
- 1 SECTION CHAIR
- 1 GROUP CHAIR
USF closed a campus street to vehicular traffic for the second annual **USF Transportation Day** on Thursday, February 27, 2020. The transportation *celebration* focused on sustainable, multi-use, and non-car commuting options in the Tampa Bay region, including bicycles, scooters, and electric vehicles. This car-free zone allowed event-goers to visit vendor booths and play games throughout the afternoon event.

The annual event attracted hundreds of visitors and students to information booths and games, and plans are underway for the 2021 event. The event is hosted by the Center for Urban Transportation Research (CUTR) and College of Engineering at the University of South Florida (Tampa Campus), Element Engineering Group, Bike/ Walk Tampa Bay, and FDOT District 7.

To learn how you can participate in the upcoming event, please contact, **Julie Bond, Senior Research Associate**.
GREEN POLICY, CONSERVATION, AND EQUITY

CUTR’s policy is to support green purchasing at all times. Under current leadership, CUTR has banned all styrofoam and all bottled water. CUTR provides reusable ceramic coffee mugs and reusable stainless steel drinking glasses. There are five filtered water dispensers within the building in order to eliminate the use of wasteful bottled water. Since the water dispensers installation, CUTR has saved over 25,000 water bottles from landfills!

CUTR is a part of the Green Lights Program. As a part of the program, the University of South Florida and CUTR have upgraded the lighting systems throughout the Tampa campus academic buildings with modern, high-efficiency electronic ballasts and energy-conserving fluorescent bulbs. This program currently saves over $1 million annually, and over $11 million kilowatt-hours annually.

CUTR also participates in USF’s Supplier Diversity Program, focusing on increasing the diversity and use of local suppliers. USF supports businesses owned by women, minorities, veterans, and disadvantaged enterprises.
CUTR TRADITIONS

Throughout the year, CUTR hosts several signature events for our employees, partners, and students including socials and lunches. The CUTR Olympics is an annual day of games between programs including a highly-competitive ping-pong match. For the holidays, CUTR hosts an international Potluck to celebrate the diverse cultures and foods of our employees. We also have an annual holiday party hosted at CUTR Director Dr. Robert Bertini’s home.
www.cutr.usf.edu

Sign up for our newsletter!