

**Leonard  
Transportation  
Center**

California State University,  
San Bernardino

[www.CSUSB.EDU/LTC](http://www.CSUSB.EDU/LTC)

# ANNUAL REPORT 2019

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## *A Note from the Executive Director*

It is my pleasure to present the Leonard Transportation Center's (LTC) 2019 Annual Activities Report. During 2019, the LTC continued to grow its programming, activities, and preparing for many good things to come.

One of our main priorities in 2019 was to increase our presence within the local community. To work towards this goal, the LTC held its Regional Transportation Mobility Dialogue Series in both the Inland Empire and the Coachella Valley. Based on the success of the 2019 Dialogues, we are currently working on the 2020 series, with six more discussions based in the Inland Empire. The topics, speakers, and highlights from each Dialogue can be found on the LTC's website, under the Conversations tab. We hope you will be able to join us for these informative and engaging transportation discussions on relevant issues, opportunities, and challenges in the region.

In April, the LTC co-hosted with the Information Decision Sciences Department, the Pathway to Logistics Kickoff. This meeting was held to bring the main stakeholders together to create synergy and support for activities, leverage resources, and create connections among those doing the work. The ultimate goal of the Pathway is to grow the number of local students seeking a post-secondary education in logistics and transportation.

Looking back, we had a dynamic and productive year. With the sustained support from our Advisory Council members and university leadership, we continue to rebuild and create a transportation center that can support the development of 21<sup>st</sup> century institutions in the Inland Empire's Transportation Sector. The faculty and staff of the LTC look to understand the needs and develop programming (research, education, and community development) that responds to local needs. With this in mind, we invite you attend our events, use the information and tools on our website, or get in touch to let us know your ideas and thoughts on the future of the transportation sector in the Inland Empire.

*Kimberly Collins, PhD  
Executive Director, Leonard Transportation Center  
California State University, San Bernardino  
December 2019*



### Remembering Barbara Leonard

Sadly, Barbara R. "Bobbie" Leonard, highly respected community advocate, philanthropist, and longtime supporter of Cal State San Bernardino passed away this last year.

She and her late husband, William E. "Bill" Leonard, contributed greatly to this university's legacy. The two remained committed to CSUSB, giving more than \$2.5 million in support of its educational mission. As part of this support, in 2006, the CSU Board of Trustees renamed the CSUSB Transportation Center as the William & Barbara Leonard Transportation Center.

With the generous support by the Leonard family, the LTC faculty and staff are working hard to carry out their legacy and honor their memories.

# OVERVIEW OF 2019 ACTIVITIES

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“Through greater public and private investment in research and development lays the key to our future mobility while at the same time enhancing safety, energy conservation and air quality.”

-- William (Bill) E. Leonard, Chairman of the California Transportation Commission.

Testimony to the Assembly Surface Transportation Committee, Long Beach, California, 1990



With William Leonard’s words in mind, the focus of the LTC is to be a thought leader and convener on transportation issues in the Inland Empire. This effort is building upon the LTC’s Advisory Council work in February 2018, to establish a central framework to address strategic, operational, and tactical priorities in the region. These include four main areas of concentration as part of the strategic framework set in 2018.

## **1. Research**

- New technologies and Smart Transportation applications
- Data needs and visioning for the IE
- Public transportation in the IE
- Moving toward a more sustainable and equitable transportation system

## **2. Education & Workforce Development**

- Pathway to Logistics
- New Transportation Leaders – LTC Student Research Challenge
- Transportation Leadership Planning and Performance Institute (TLPPi)
- Teaching Transportation Case Studies

## **3. Community Outreach & Development**

- Dialogue Series
- Transportation Talks
- Social media / website / print

## **4. Operations**

- Staffing
- Organizational development
- LTC Innovation Research & Teaching Lab

# 2019 STRATEGIC INITIATIVES

## RESEARCH

### New Technologies & Smart Transportation Initiatives

#### Parking Project

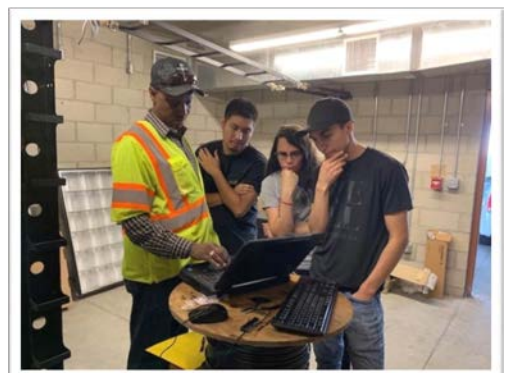
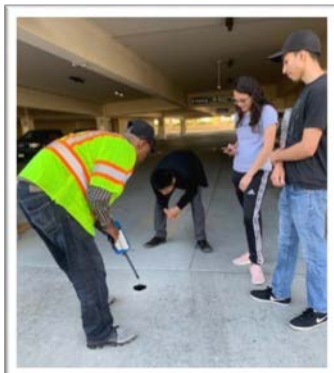
The goals of the transportation systems in a smart campus are three-fold: (a) safety; (b) efficiency; and (c) sustainability. The ever-increasing demand on a limited campus infrastructure leads to traffic congestion, class delays, and accidents, with vast negative impacts on our students. The LTC Innovation Lab is working on a parking monitoring project to provide real-time information on the number of available parking spots in the campus parking structures using computer vision and IoT technologies. We plan to use existing surveillance cameras in the parking structure and install new vehicle counters at parking structure entries.

In addition to counting available parking spaces, the system will disseminate the parking information to users via web and mobile applications. If successfully developed, the system can help to alleviate the frustration in finding a parking spot, and to improve traffic flow by reducing circling vehicles in parking lots. Engaging students in research and preparing them with problem-solving skills are essential elements of this project. We invited students from all disciplines to participate in the project. While programming and system design skills are important, we also need students to work on various aspects, such as survey technology and understanding needs, ground truth of the data, promote the project, gather feedback, etc. The project is supported by Information Technology Services (specifically, Academic Technologies & Innovation and Information Security & Emerging Technologies) and the Office of Student Research.

#### Heavy-duty Truck Mini Simulators

The simulators have been moved to San Bernardino Valley College (SBVC) to provide students in the Medium/Heavy-duty Vehicle Technician Program with new opportunities. With these simulators, students will learn how to drive as well as work on the next generation of heavy-duty vehicles. Through a comprehensive curriculum, this program will train the next generation of technicians and future managers in the transportation field. The next step is to create the articulation to CSUSB.

This exchange of resources has solidified the working relationship between faculty and staff at both the LTC and SBVC, and we expect many good things to come.

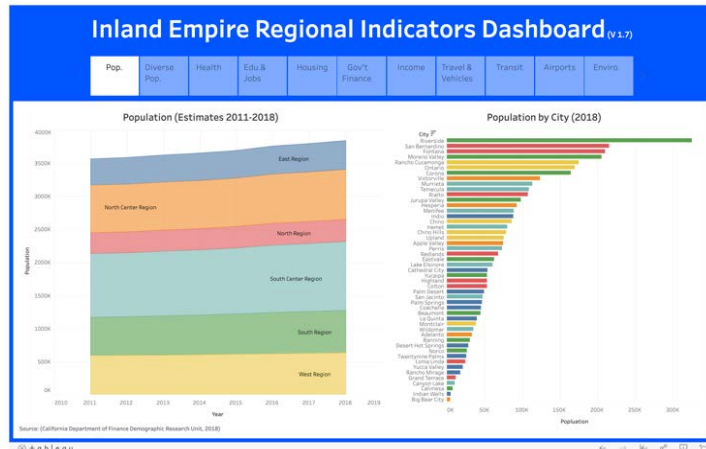




## Data Needs and Visioning

### Indicators Dashboard

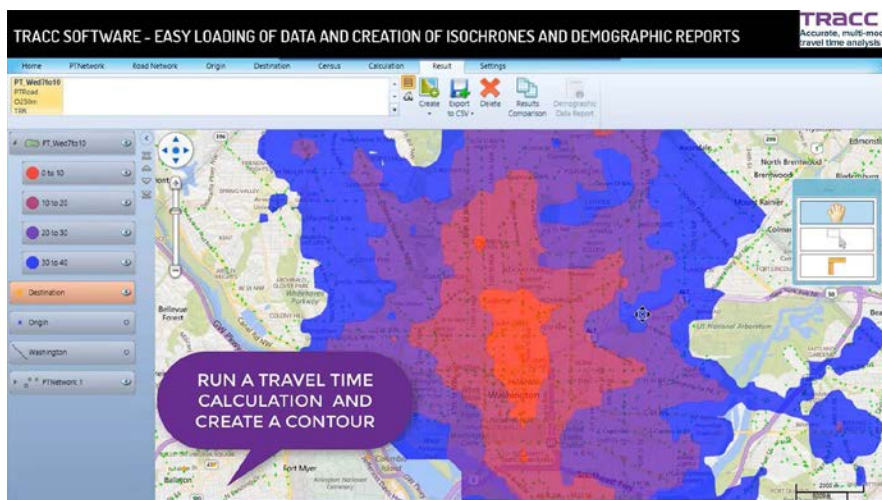
The Inland Empire (IE) consists as two major counties in Southern California – Riverside and San Bernardino. Within this large geographic region there are six subregions that tell a different story on life, community, and transportation impacts. The LTC developed a Regional Indicators Dashboard to provide residents, decision makers, and researchers a view into our regions. As with all of our work, the Dashboard can be found on our website.



## Public Transportation in the IE

### Basemap TRACC Software Training

In the build out of the LTC's Innovation Research & Teaching Lab, we have acquired new software including TRACC from Basemap. As an international market leader in the public transport analysis space, TRACC software uses imported data to run multi-modal journey time calculations. These calculations include walking, cycling, private vehicles and public transportation such as buses and rail. With TRACC software, students, faculty and industry leaders can import and manipulate a wide range of data sets and use those to create detailed travel time maps and reports as well as produce multi-modal travel time contours.



The analyses developed from the software will intuitively assess travel times across various modes of transport and will aid research on how to improve planning and investment decisions. Whether it is for accessibility, efficiency or equity, this modeling can also aid in impacting the changes and decision making as it pertains to our transportation infrastructure. The user-friendly software interface allow users to generate meaningful outputs that bring data to life visually without the need of a mapping expert.

One of the LTC's first activities with TRACC was to host a multiday workshop for CSUSB faculty and staff, and local transit operators with representatives from TRACC. The results were numerous with new partnerships between the community and CSUSB; understanding of the complex issues with public transportation in the IE; and in the future a series of training videos to share.



## **Moving toward a More Sustainable and Equitable Transportation System in the IE**

### **LTC Student Research Challenge**

The center has developed and launched a new program called the "LTC Student Research Challenge." This program will provide regional students and future transportation leaders from CSUSB, California State Polytechnic University, Pomona (CPP), and University of California Riverside (UCR) with the time and resources to think innovatively, learn research techniques, and find solutions to the obstacles in the IE's transportation sector. Each year a new topic that ties into the LTC's research and education goals will be selected.



## **EDUCATION AND WORKFORCE DEVELOPMENT**

### **Pathway to Logistics**

The LTC is working with the Department of Information Decision Sciences faculty, CSUSB's GearUp program, and regional stakeholders on the Pathway to Logistics. The Pathway's purpose is to convene stakeholders; create synergy between current activities; and most importantly, develop opportunities for regional students and industry. The program is operated at San Bernardino's Cajon High School, Chaffey College, and CSUSB. We are working together to create a model for developing connections between area students, industry, and educators.



The primary goal is to increase the number of local middle and high school students seeking a post-secondary education in the logistics and transportation field, and thereby, accessing high paying jobs in the field. A secondary goal is to open the doors of CSUSB to the community and further regional partnerships. The overall vision for the Pathway to Logistics is to develop a flexible program to support industry, local students, and build the economy, creating greater livability in the region.



## Transportation Leadership, Planning and Performance Institute (TLPPI)



The Transportation Leadership, Planning and Performance Institute is a course at CSUSB that provides a comprehensive overview of transportation planning, performance, and leadership. The course has 26 modules and a capstone project. It covers an array of topics that are beneficial to individuals interested in learning about the future of transportation planning and technology such as strategic planning and leadership. The purpose of the TLPPI is to

provide vital skills and applied information to entry-level/mid-level transportation planners working in California. Skills acquired can be applicable beyond transportation, and professionals can learn about how they can improve leadership skills, work with performance indicators, and update their knowledge in transportation planning.

Currently, this program is being offered to Caltrans professionals free of charge. Four cohorts have completed the program and the last cohort will begin in late spring, 2020. With the current changes in the transportation sector in California, the LTC working to obtain additional funding to update the TLPPI in fall 2020.

## Teaching Transportation Case Studies

From the wealth of information generated from the 2018 and 2019 Transportation Dialogues, the LTC has developed a book of Transportation Case Studies for use in the classroom. We plan to publish this work and other applied teaching materials to Amazon Marketplace in the near future for purchase. As part of this initiative, we are developing a LTC Press.





## COMMUNITY OUTREACH AND DEVELOPMENT

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### LTC Regional Mobility Dialogue Series



Throughout the last two years, the Leonard Transportation Center has hosted a series of educational and interactive breakfast dialogues bringing together community leaders like you in a discussion of how to best address the region's mobility needs. Mobility is key to the Inland Empire's future economic growth and quality of life.

Partnering with HNTB, Inc., the LTC developed the Dialogue series to address numerous regional projects and initiatives.

Given the rapid pace of change in the transportation sector, it is critical to provide a forum for community engagement and education. The San Bernardino International Airport joined as a Platinum sponsor this year to further the local commitment to this conversation.

In 2019, we also held a series of conversations in the Coachella Valley in partnership with the Agua Caliente Band of Indians coming in as a Gold sponsor; and the Coachella Valley Association of Governments, the Coachella Valley Economic Partnership, and One Future Coachella Valley as Silver sponsors.

The 2018 and 2019 series were successful in bringing together policymakers and thought leaders from both the public and private sectors as well as CSUSB faculty experts, students, and members of the public. After receiving positive feedback throughout our Dialogue Series, the LTC has brought on several new sponsors and will continue the series in the Inland Empire for 2020.

### Transportation Talks

Based on our Regional Mobility Dialogues, the Transportation Talks are an extension to the series itself. Staff edited the talks into video presentations that are now accessible through LTC website. These Transportation Talks are a treasure trove of rich information and serve as a voice of industry and public sector leaders. As such, they are resource for instruction in the classroom, and provide awareness in the community and insights from the industry. These transportation talks are available on our website in the Education tab.



## In the Media

The most important outcome a university center can have is to share their work widely with community members, and decision makers alike. This will help to move the conversation forward and hopefully assist in building 21<sup>st</sup> century institutions that will improve the transportation sector and residents' quality of life in the IE. With this in mind, Kimberly discussed the work of the LTC and the Transportation Dialogues on iHub Radio in the Coachella Valley, and our work was picked up by the following print media: *The Patch*, *Impact Magazine*, *CSUSB News*, *Inlandempire.us*, *High Desert Daily*, and *Redlands Community News*.

In the coming year, we will continue to outreach to the community through both traditional media sources and through social media. In the inset box to the right, we have provided an overview of the growth of our social media work.

## OPERATIONS

### William E. Leonard Memorial Transportation Internship

In 2019, the William E. Leonard Memorial Endowed Scholarship was renamed, the William E. Leonard Memorial Transportation Internship. This internship supports a paid position for a young leader/student in transportation at the LTC during the summer. Supporting students in their personal goals of getting a higher education was important to the Leonard family.

The center had its first student intern last summer, Joseph Mercado. Joseph is currently an undergraduate student studying cybersecurity at CSUSB. Joseph's work and dedication last summer was tremendous. Because of this, the LTC hired him on as a student assistant. We are pleased to be working with him.



## Outreach through Social Media

The center's social media outreach has continued to experience growth on all platforms – LinkedIn, Facebook, Twitter, Instagram, and YouTube.

A discussion was made to switch the LinkedIn user profile to a LinkedIn business profile in March 2019. Over the course of less than 9 months, the center has garnered over 3,600 impressions on LinkedIn alone. Additionally, Facebook had over 4,300 unique visitors who have seen our posts throughout the year. Twitter had a total of over 150,000 tweet impressions with over 1,700 profile visits.

Platform	Net Followers Gained in 2019
LinkedIn	100%*
Facebook	25.64%
Twitter	45.45%
Instagram	114.29%

\*The LinkedIn business page was created in March 2019.

## ACTIVITY HIGHLIGHTS

In addition to our priority strategic initiatives, the LTC staff participated in numerous community outreach activities during 2019. These included presentations and attendance at conferences, engaging in stakeholder meetings, and working with university colleagues. These activities were invaluable in the development of strong and reliable associations and promoting current and future strategic initiatives for the center.

Key staff members met the demands of a very rigorous monthly schedule.

<b>2019 LTC Activities (By Month)</b>			
<b>Month</b>	<b>Activity</b>	<b>Participants</b>	<b>Comments</b>
<b>January</b>	First Coachella Valley Regional Mobility Dialogue Series - Affordable, Sustainable Transportation in the Coachella Valley: Solutions for the Local Workforce	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>February</b>	First Inland Empire Regional Mobility Dialogue Series - Cybersecurity and Transportation: What are the Potential Threats?	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>March</b>	Advisory Council Meeting	LTC Staff, students, faculty, council members	
	Second Coachella Valley Regional Mobility Dialogue Series - Transportation Planning and Smart Cities: The Next Steps for the Coachella Valley	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>April</b>	Southern California E-commerce and Logistics Summit, Pomona	LTC Staff	

	Pathway to Logistics kickoff	LTC Executive Director, LTC Staff, Pathway to Logistics attendees	
	Second Inland Empire Regional Mobility Dialogue Series - Electrification of Medium/Heavy Duty Vehicles	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>May</b>	Amazon Fulfillment Center Tour, Eastvale	LTC staff	
	Third Coachella Valley Regional Mobility Dialogue Series - The Future Intersection of Technology and Transportation Jobs	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>June</b>	Advisory Council Meeting	LTC Staff, students, faculty, council members	
	Third Inland Empire Regional Mobility Dialogue Series - Integrating Smart City Concepts into Local Transportation Infrastructure	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>July</b>			
<b>August</b>	Fourth Inland Empire Regional Mobility Dialogue Series - Improving the Electric Grid and Infrastructure to Meet the Needs of Electric Vehicles	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>September</b>	Mobility 21, Anaheim	LTC Executive Director	
<b>October</b>	AltCar, Riverside	LTC Executive Director, LTC Staff	



	Advisory Council Meeting	LTC Staff, students, faculty, council members	
	Fifth Inland Empire Regional Mobility Dialogue Series - Developing the Transportation Workforce of the Future	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts
<b>November</b>			
<b>December</b>	Advisory Council Meeting	LTC Staff, students, faculty, council members	
	Sixth Inland Empire Regional Mobility Dialogue Series - Leadership in the Transportation Sector: How to Envision Change in the I.E.	LTC staff, students, council members, public and private sector stake holders, community members	Community engagement, informational opportunity for community members and transportation experts

## LTC Committee Representation

Title	Representative
SCAQMD AB 617 Steering Committee for SB/Muscoy	LTC Staff
Regional Work Based Learning Oversight Committee	Kimberly Collins, LTC Staff
Business Engagement Alignment Team (Linked learning)	Kimberly Collins, LTC Staff
Distribution Management Association	Kimberly Collins/Danny Chung
Inland Southern California Climate Collaborative	Kimberly Collins
SCAG/SBCTA Technical Advisory Group	Kimberly Collins
Good Neighbor Environmental Board	Kimberly Collins
Redlands Park and Recreation Commission	Kimberly Collins

## 2019 ADVISORY COUNCIL MEMBERS

Member	Affiliation
Kome Ajise	Executive Director, Southern California Association of Governments (SCAG)
Doran J. Barnes / Josh Landis	Executive Director, Foothill Transit / Planning Manager, Foothill Transit
Matthew Barth, Ph.D. / Nicole Cleary, Ph.D.	Professor of Electrical and Computer Engineering, Director / Deputy Director, CE-CERT, University of California, Riverside (UCR)
Rick Bishop / Christopher Gray	Executive Director, Western Riverside Council of Governments / Director of Transportation, Western Riverside Council of Governments (WRCOG)
Michael Beauchamp / Ray Desselle	District Director, Caltrans District 8 / Deputy District Director of Planning, Caltrans District 8
Mike Burrows	Executive Director, San Bernardino Airport Authority
Garry Cohoe, Council Chair	Senior Vice President, Advanced Civil Technologies
Kimberly Collins, Ph.D.	Executive Director, Leonard Transportation Center (LTC); Professor of Public Administration, Jack H. Brown College of Business and Public Administration, CSUSB
Carrie Gilbreth	Senior Partner, Westbound Communications
Paul Granillo / Jason Cordova	President and CEO, Inland Empire Economic Partnership (IEEP)
Yunfei Hou, Ph.D.	Associate Director, Leonard Transportation Center (LTC); Assistant Professor Computer Science & Engineering, CSUSB
Xudong Jia, Ph.D., P.E.	Professor and Chair of Civil Engineering, California State Polytechnic University, Pomona (CPP)
William "Bill" R. Leonard	Leonard Family representative; Capitol Commission volunteer; State Legislator 1978-2002; Board of Equalization 2003-2010, Secretary State and Consumer Services 2010
Frank Lin, Ph.D.	Professor, Information and Decision Sciences, CSUSB
Erin Rogers	Interim CEO, OmniTrans
Lawrence C. Rose, Ph.D.	Dean of the Jack H. Brown College of Business and Public Administration, CSUSB
Liza Wilson	Leonard Family Representative; Account Executive, Sanofi Genzyme

## LTC Staff

### Kimberly Collins, PhD

Kimberly is the Executive Director of the Barbara and William Leonard Transportation Center (LTC). Kimberly's current research focuses on social equity, sustainability, networks, and democracy in search of developing 21<sup>st</sup> century institutions to respond to the future. She currently is a Professor of Public Administration; serves on the Good Neighbor Environmental Board (a U.S. EPA Presidential Advisory Commission) in 2018; and is the North American Regional Editor for the Journal of Borderlands Studies.

### Yunfei Hou, PhD

Dr. Hou is the Associate Director of the Leonard Transportation Center, and Assistant Professor, School of Computer Science and Engineering. He received his Ph.D. from Department of Computer Science and Engineering, University of Buffalo, SUNY in 2016. His current research interest include applications in transportation cyber-physical systems, and data and information analysis for transportation engineering. Recent projects span areas such as intersection management with connected vehicle technologies, electric taxi-sharing and taxi fleet dispatch, and on-road infotainment services.

### Kathleen Ramirez

Bachelor's in communication with an emphasis on Media Studies, from California State University, San Bernardino. Kathleen started working for the Leonard Transportation Center in 2016, and was recently hired on as the centers Administrative Support Coordinator. Her interests include broadcast journalism and human organization.

### Danny Chung

Currently an MBA graduate student with a dual concentration in cybersecurity and supply chain at California State University, San Bernardino, Danny has a strong interest in supply chain, logistics and transportation. He also has a vested interest in the Inland Empire and is currently an advisor to the board of directors at the Distribution Management Association (DMA) of Southern California.

### Joseph Mercado

Joseph is an undergraduate studying cybersecurity at the School of business here at CSUSB. He is in his first year and started with the Leonard Transportation Center as a recipient of the William E. Leonard Memorial Transportation Internship. Because of his hard work and dedication, the LTC kept Joseph on as a Student Assistant.



## 2020 EXPECTATIONS

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In the coming year, the LTC will continue to build on its work over the past few years and develop a few new initiatives as well. One work in progress comes with discussing and researching smart transportation technologies. The IE has yet to fully capitalize on new opportunities provided by new innovations and the LTC faculty and staff are working in partnership with a variety of organizations, both public and private, to create a space in the region to bring stakeholders together. Within this

space we hope to find solutions, develop new ideas, start and solidify local business, and through technology advancements work toward a more sustainable and equitable future in the transportation sector. This initiative will build upon our research, education, and community development work, and move it toward the 21<sup>st</sup> century. Universities have a unique role in their communities – to educate the next generation of leaders, workers, and residents – that will ultimately improve the economy, community conditions, and people’s lives. This goal might sound grand and maybe a bit overly optimistic, but in today’s world, grand thinking is in order.

As we look to encourage new leaders in the transportation field, the LTC will start the Outstanding Student Award in 2020 to recognize undergraduate and graduate students for their outstanding efforts in academia, research, and leadership, in line with our mission. We will be highlighting the students on our website so be sure to read about the remarkable young people that are working with us. This award is part of the LTC’s continuing efforts to recognize and encourage excellence in creative and outreach activities by CSUSB students across disciplines. If you know of a CSUSB student that fits this profile, please let us know. We would like to meet them and possibly bring them into the LTC family.