




Semi-Annual Progress Report #1

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1. Accomplishments

Major goals of the program

The Pacific Southwest Region (PSR) University Transportation Center (UTC) will serve Region 9 with a comprehensive, integrated program of research, education and technology transfer built upon the priority needs of the region: 1) closing access gaps, 2) increasing the sustainability and resilience of the goods movement system, and 3) expanding workforce opportunities.

Our consortium of universities and community colleges, together with partnerships with state Departments of Transportation (DOTs), Metropolitan Planning Organizations (MPOs), and industry leaders, forms a comprehensive, region-wide network. The University of Southern California (USC) leads the consortium. Partners include California State University Long Beach (CSULB); University of California, Berkeley (UCB); University of California, Davis (UCD); University of California, Irvine (UCI); University of California, Los Angeles (UCLA); University of Hawai'i at Manoa (UH); Northern Arizona University (NAU); Pima Community College (PCC); and University of Nevada, Las Vegas (UNLV). USC and CSULB are both partners in the METRANS Transportation Center, the entity that houses the PSR UTC.

Accomplishments under these goals

Our accomplishments are categorized under research, education, and outreach.

Administrative accomplishments

Dolores Rodriguez at USC METRANS has been promoted to the position of Outreach and Communication Coordinator. In this new role, Dolores will be responsible for coordinating METRANS's outreach to external stakeholders. This will include our communication efforts, ties to stakeholders, and our student outreach and student activities. Dolores has been with METRANS for the past year performing very well in the role of administrative assistant.

Madeline Martell joined USC METRANS on August 15, as our new administrative assistant. Madeline graduated from Occidental College in 2022 earning her degree in Comparative Studies in Literature and Culture. During her time at Occidental College, Madeline was an academic liaison on the Diversity and Equity Board (DEB), a branch of student government that advocates for the needs of underrepresented students on campus. Prior to joining METRANS, she was a personal injury legal assistant at Gentes Law.

PCC recruited for a program coordinator and the position filled as of September 25, 2023.

CSULB experienced the departure of two staff members, Stacey Park (Research Associate) and Thi Young (Student Research Assistant), but they were able to hire a new Program Coordinator, Patrick Schiwiek, to coordinate the Caltrans California Local Technical Assistance Program (LTAP) and other Center and project activities. CSULB also hired one new grad and one undergrad research assistant. In addition to new hires, Dr. Tom O'Brien was appointed Associate Dean of the College of Continuing and Professional Education (CPaCE) at CSULB.

USC set up subcontracts with all partners, including (as needed) first year budget revisions (reported to DOT) and scopes and subcontract documents.

1) Research Accomplishments

The goal of our Center is to address regional issues, engage in transportation research that will transform both knowledge and practice will supporting US DOT strategic goals, and provide public policy advisement, technical assistance to state and local agencies, and innovative workforce development strategies. Our multi-modal, multi-disciplinary research program is organized around two themes, each with three sub-topics, and a topic that cuts across both themes:

Theme 1: Accessibility and Mobility for All

Topic 1.1: Accessibility for Underserved and Isolated Communities

Topic 1.2: Improving the Efficiency of the Mobility System

Topic 1.3: Broadening Access to Low/Zero Carbon Transport

Theme 2: Sustainable and Resilient Supply Chains

Topic 2.1: Addressing Environmental Justice Problems in the Goods Movement System

Topic 2.2: Goods Movement System Efficiencies and Resilience

Topic 2.3: Decarbonizing the Goods Movement System

Cross-Cutting Topic (applies to both Theme 1 and Theme 2): Access to Opportunity Through Strategic Workforce Development

Our research program has four parts: 1) research initiated and conducted by PSR faculty; 2) research conducted by researchers inside or outside PSR but within Region 9; and 3) a graduate research fellowship program, and (4) community-partnered research projects which pair PSR faculty and community organizations from the earliest stages of the research. The community-partnered projects, which are new in the BIL UTC, are intended to increase the research focus on equity and community needs and to accelerate technology transfer by working with communities and practice from the earliest stages of research conceptualization. The more traditional faculty initiated projects is research that is still formative and hence not ready for community partnering at the earliest stages. As with the earlier FAST-Act PSR, we have reserved a small pool fund for a Region 9-wide solicitation with the purpose to promote broader participation across the states and territories. We found that helps PSR maintain vibrant links to scholars throughout Region 9.

In March 2023, **USC** and **UCD** opened a competitive request for proposals (RFP) for [National Center for Sustainable Transportation \(NCST, led by UCD\)](#) and [Pacific Southwest Region University Transportation Center \(PSR, led by USC\)](#) Caltrans funded research grants. That RFP allocated approximately \$1.66 million in Caltrans funding to support research across the NCST and PSR California campuses that addresses the Caltrans Research Needs, of which \$829,831.00 was allocated to PSR projects. The RFP was open to eligible PSR applicants at UC Davis, USC, CSULB, UC Irvine, and UCLA. PSR received 18 proposals and selected 8 projects. These will be match funding projects. The projects are anticipated to start on January 1, 2024. Please see table 1 for a list of new projects.

We also initiated the two community partnered project proposals that were specified as “quick start” projects in our Region 9 BIL UTC application. The PI’s for those two projects wrote proposals using a

standard PSR template and those proposals were reviewed by the PSR Executive Committee, which approved both projects at its September 12, 2023 meeting. The projects are:

- 1) **UC Davis's** Dr. Caroline Rodier will PI "Grassroots Shared Mobility Community-Partnered Project" in collaboration with Dr. Shashi Nambisan (project co-PI) at the **University of Nevada Las Vegas**. The research focuses on community engagement activities and analyses that assess unmet travel needs and identify possible shared mobility solutions in rural Kings County, California, which faces significant environmental and economic challenges. The project will support an in-depth assessment of needs and alternatives through (1) analysis of available reports and data, (2) participation in community engagement activities, (3) conducting resident interviews, focus groups, or surveys, and (4) drafting a final report documenting the process, needs, and recommendations. The project will begin at the start of the next reporting period, budgeted at \$85,000.
- 2) **CSULB's** Drs. Theresa Gregor (PI) and Tyler Reeb (co-PI) received \$100,000 for the project, "Tribal Transportation Oral History of Mobility: Understanding the Past to Improve Future Collaborations and Innovations." That research will utilize an oral history approach based on American Indian Studies disciplinary protocols and relationships to interview tribal leaders, workers, and key personnel engaging in tribal transportation and mobility work in San Diego County. San Diego County is home to 18 federally recognized Indian reservations governed by 17 distinct Tribal Nations. In 2007, the San Diego Association of Governments reached out to the Southern California Tribal Chairman's Association (SCTCA), a regional nonprofit tribal consortium founded following the American Indian Movement's activism to lobby for Indian Self-Determination (1974-1976), to establish a Memorandum of Understanding for SCTCA to become an advisory member of SANDAG's Board of Directors in addition to having representation on several other SANDAG committees, including the regional planning committee and the transportation committee. Because of this government-to-government framework, San Diego Tribal Nations have been able to elevate and amplify their priorities for regional transportation and mobility needs. This intergovernmental partnership between Tribal Nations and local or County governments is rare in California and one in which we seek to research via interviews with tribal leaders who have served as SANDAG representatives for SCTCA. The research will provide a deeper and complex understanding of Southern California Tribal transportation needs. The project will begin at the start of the next reporting period. Project PI Professor Gregor is a member of a tribal nation and has previously worked closely with the SCTCA, and she is well positioned to lead this research. We anticipate that the project will uncover best practices and we plan on reporting those at TRB and National Academies convenings in 2024, and we will reach out to DOT and Caltrans colleagues as this project proceeds.

In addition to the \$829,381.00 allocated to Caltrans match funded PSR projects and the \$185,000.00 to PSR community-partnered projects, USC METTRANS issued an RFP on September 28, 2023. The RFP will allocate approximately \$400,000 US DOT funding to support research. The RFP is open to eligible applicants USC. We also issued the first regional pool fund project call, allocating \$130,000 in US DOT funding to that. Proposals for both calls are due by Friday, November 10, at 5:00 p.m. PST.

Table 1: New Projects

Note on Funding Sources: DOT= DOT funded

CT-PSR= Caltrans funds (for California partners), match funding source

LABC= Los Angeles Business Council, match funding source

| Partner | Project No. | PI | Title | Funding Source |
|-----------|------------------|------------------------------------|--|----------------|
| USC | PSR-23-06 TO 076 | Cyrus Shahabi, John Krumm | Traffic Causality Analysis for Robust Road Freight | CT-PSR |
| USC | PSR-23-04 TO 074 | Bora Gencturk, Botong Zheng | Development and testing of a novel anchor-profiled FRP jacket system for effective confinement of rectangular concrete columns | CT-PSR |
| USC | PSR-23-07 TO 077 | Ketan Savla | Practical Performance Indices to Enable Ranking of Signalized Corridors | CT-PSR |
| USC | PSR-23-01 TO 079 | Genevieve Giuliano | Impacts of e-commerce on warehousing and distribution in California | CT-PSR |
| USC, UCLA | PSR-23-05 TO 075 | Andre Comandon, Evelyn Blumenberg | The Equity, Environmental, and Policy Implications of Long-Distance Commuting in California | CT-PSR |
| CSULB | PSR-23-08 TO 078 | Tyler Reeb | Best Practices in Freight Technology Transfer | CT-PSR |
| USC | PSR-23-09 | Marlon Boarnet, Genevieve Giuliano | Zero Emission Heavy Duty Trucks: An Analysis of California’s Advanced Clean Fleets Regulation | LABC |
| UCD | PSR-23-10 | Caroline Rodier, Shashi Nambisan | Grassroots Shared Mobility Community-Partnered Project | DOT |
| CSULB | PSR 23-12 | Theresa Gregor, Tyler Reeb | Tribal Transportation Oral History of Mobility: Understanding the Past to Improve Future Collaborations and Innovations | DOT |
| UCI | PSR-23-03 TO 073 | Stephen Ritchie | Route-based Freight Activity Metrics along the California State Highway System through a Pilot Multi Sensor Fusion System | CT-PSR |
| UCLA | PSR-23-02 TO 072 | Jiaqi Ma | Modernize Census Infrastructure Technology | CT-PSR |

Additionally, **UCD** received approval from Caltrans and from CARB to use two state-funded research projects as cost-share for the PSR BIL grant. Both projects started before June 1, 2023 but continuing (June 1, 2023 and later expenses) will be claimed as match funding. Those projects are:

- “Methods for assessing the effectiveness of potential vehicle-miles-traveled (VMT) mitigation measures”, PI Susan Handy, Caltrans-funded
- “Policy Briefs: Effects of Transportation and Land Use Policies and Strategies on Vehicle Use, Greenhouse Gas Emissions,” PI Dillon Fitch-Polse, CARB-funded

UCI issued a call for graduate student fellowship applications for fall 2023 and awarded fellowships to two recipients:

- Negin Shariat, PhD student in Transportation Systems Engineering
- Henry Bernal, PhD candidate in Economics

UCB received and processed the award, set up accounting for cost share, attended coordination meetings, held seminars and continuing education and training, and began work on the Call for Student Research



Student opportunities for research

Student support is an important component of research project selection. Highlights of how PSR has supported students:

CSULB students in the Global Logistics Professional designation program and in the undergraduate program in Supply Chain Management were awarded scholarships through the CSULB Center for International Trade and Transportation (CITT) Hollingsworth endowment and the Containerization and Intermodal Institute (CII).

CSULB CITT completed the development of a 12th grade capstone project for the POLB Academy of Global Logistics. The capstone allows students to apply knowledge learned in the four years of the program to a real-world based problem for a fictitious company. The class is approved for transfer credit to the UC and CSU systems.

NAU partially funded 2 faculty and 43 students to attend the 2022 ITS Arizona Conference (see image below). Funding for this trip was split between this grant and the one from the FAST Act.



NAU students at the 2022 ITS Arizona Conference

Additional accomplishments

i. **Research dissemination**

On September 22, 2023, Marlon Boarnet (**USC**) presented research on California’s Advanced Clean Fleets regulation at the Sustainability Summit organized by the Los Angeles Business Council. This high-profile summit features leaders from business, government, and philanthropy, including keynote welcomes from California Governor Gavin Newsom and USC President Dr. Carol Folt. Boarnet’s presentation was the only featured research presentation, to an audience of approximately 200 in-person with many more virtually. Boarnet discussed the state’s requirement for transition to a zero

emission truck fleet, the experience of early adopters of zero emission technology, and policy challenges. A video of Boarnet’s talk is available at <https://youtu.be/PbSaKho6XT0?t=11186>.

Dissemination highlights

Completed final reports and research briefs are available on the PSR research website at <https://www.metrans.org/metrans-research>.

USC METRANS hosted two PSR funded METRANS Research Seminars during the reporting period. Recordings of the seminars are available [here](#).

- “What Does Online Shopping Have in Common with Surviving a Heart Attack?” Dr. Emily Moylan, Senior Lecturer in Civil Engineering at the University of Sydney
- “A Conversation with Uber’s Director of Global Policy for Cities and Sustainability” Shin-pei Tsay, Director of Global Policy for Cities and Sustainability

CSULB researchers published *Trade and Transportation Talent Pipeline Blueprints: Building University-Industry Talent Pipelines in Colleges of Continuing and Professional Education* earlier this year. During the current reporting period, CITT researchers have designed, implemented, and continuously evaluated a proof-of-concept pilot. Throughout this process, CITT researchers have conducted meetings with partners at Gannet Fleming, a global engineering firm, and faculty and staff at the College of Engineering and College of Professional and Continuing Education at CSULB to facilitate the Talent Pipeline program during the Spring 2023 semester and into the Fall 2023 Semester. Three students received paid summer internships at Gannet Fleming. CITT also facilitated a paid workshop with NASA’s Jet Propulsion Laboratory. Participants took part in a pre- and post-workshop survey. Two students were selected for internships with JPL.



Researchers at **CSULB** are currently designing and implementing a Community-Based Mobility Lab at the intersection of Pacific Coast Highway and Santa Fe Avenue in Long Beach, CA. The purpose of the Community-Based Mobility Lab is to address two interrelated research problems:

1. How to collect traffic/mobility data and use artificial intelligence techniques to develop Intelligent Transportation Systems (ITS) technologies to improve congestion and safety conditions at busy truck intersections; and
2. How to ensure that the data privacy rights of Long Beach residents and visitors (who pass through intersections of study) are protected and assured through community-based research and outreach practices that foster stakeholder trust.

Media coverage

PSR researchers are regular contributors to various national media outlets.

USC Professor Marlon Boarnet was interviewed by Spectrum 1 News in September on the topic of fare-free transit. Boarnet discussed research on transit ridership and fares and the implications for Los Angeles Metro's consideration of fare-free transit.

ii. **Plans for next reporting period**

The next reporting period is October 1, 2023 through March 31, 2024.

PCC plans to strategically reorganize to merge Logistics program with the Center for Transportation Training, to create the Center for Transportation and Logistics. This will create more synergy between the programs and staff. Additionally, PCC is planning to explore the creation of a Logistics FastTrack program. This would be a short term, noncredit program built with industry input in order to create short pathways resulting in credentials and student entry into the workforce.

In December 2023, **PCC** will have their first advisory council for the Autonomous Vehicle Driver and Operations Specialist certificate. We are excited to have participation from key autonomous trucking companies (Waabi, Aurora and Kodiak, for example) as well as state DOTs, national organizations, and industry stakeholders to provide input as we evolve the certificate program.

UCD will facilitate a Call for Proposals for Dissertation Grants in Fall 2023 and Spring 2024 to award BIL funding, and expects to award at least one PSR-funded grant from these two calls.

USC will complete the in-progress call for faculty research proposals (described above), review proposals, and allocate funding.

PSR funds will be used to support ITS-Davis Friday Seminars during the next reporting period. Two seminars have been identified so far for the Fall 2023 quarter (see below). These will be available for the public to watch live (remotely), as well as afterwards as a recording.

- “Traffic Signal Coordination Principles and Timing Development - An International Perspective,” on October 6, 2023, with Dr. Zong Tian, Professor and Director of the Center for Advanced Transportation Education and Research (CATER) at the University of Nevada, Reno.
<https://its.ucdavis.edu/seminar/october-6-2023/>
- “Transit Network Design (TND): An Introduction and Some Practical Aspects,” on November 17, 2023, with Dr. Claudio Barbieri da Cunha, Professor in the Department of Transportation Engineering at the Polytechnic School at the University of São Paulo in Brazil.
<https://its.ucdavis.edu/seminar/november-17-2023/>

UCD will support undergraduate students’ attendance at the California Transportation Foundation’s 2023 Transportation Education Symposium in November 2023. The CTF Transportation Education Symposium is a gathering of top California university students and high-level transportation executives for two days of mentoring and role playing. Students are paired with mentors for one-on-one coaching in this intense hands-on workshop. Student teams compete in a real-world RFQ scenario while professionals role play stakeholders and decision-makers.

As this grant is just gearing up, **NAU** plans to use funds to fund a graduate research fellows, undergraduate research interns, and student and faculty travel for dissemination, outreach, and workforce development. Regarding travel, they expect to provide support for travel to the

Transportation Research Board Annual Meeting in January 2024, and the PSR Congress in March 2024. Regarding outreach, plan to complete several in-school K-12 presentations on transportation engineering during late fall 2023 and spring 2024 as part of the Flagstaff Festival of Science In-School Speaker Series.

UH will advertise a new internal RFP, plan to report on published articles and activities associated with PSR funding.

In fall 2023, the **UCI** Graduate Colloquium on Innovation in Transportation, which focuses on a selected topic each year with distinguished invited speakers. Last year's Colloquium focused on Aviation, and Connected and Autonomous Vehicles, and included speakers aviation innovator, Josh Aronoff, Professors Alexandre M. Bayen (UC Berkeley) and Jacqueline Huynh (UCI), and CalSta deputy secretary for innovative mobility solutions, Lori Pepper. In winter 2024, ITS-Irvine's Emerging Scholars Transportation Research Showcase highlights the research of up-and-coming scholars at the Institute, including PSR-supported research.

UCB expects to disseminate Call for Student Research, select projects, award project grants, begin work on student research projects, acquire data, and build out the data initiative.

UCLA plans to launch student fellowship program for continuing students to support their capstone-client projects which support PSR research priorities. Additionally, they hosted the annual UCLA Lake Arrowhead Symposium UCLA Lake Arrowhead Symposium on the Transportation - Environment - Land Use Connection which took place October 15-17, 2023. The theme was titled "Transforming Transportation" which covered solutions for professionals, elected officials, and advocates working on transportation and regional economic issues. Over the 2.5 days, participants explored how governments can overcome obstacles to deliver a transformed transportation system. Participants explored piloting projects, visions for equitable transportation, and governance approaches to building transformative transportation and was attended by 170 guests. More information can be found on the symposium website at www.uclaarrowheadsymposium.org

CSULB anticipates the expected appointment of a new CITT Interim Executive Director during the next reporting period. CITT will also work with the college on posting a grants manager position and hiring additional research support. The hiring of a Geographical Information Systems (GI) Student Assistant will be completed before the end of 2023.

CSULB will conduct literature reviews, surveys, and interviews to compile a final report that will:

1. Call out the unique characteristics, requirements, and constraints of different public sector agencies involved in technology transfer as it relates to freight infrastructure planning and supply chain and logistics operations (i.e. budget constraints, geographical considerations, and stakeholder engagement).
2. Provide a comprehensive list of knowledge-sharing platforms and dashboards that can serve as a repository for the various factors that are involved in freight infrastructure planning.
3. Develop a needs assessment for developing a technology transfer database prototype that would meet the needs of public sector agencies.

B. Educational Accomplishments



PSR’s education goal is to foster education and training to produce the next generation of academic scholars, professionals, and skilled workers. In line with PSR’s educational, workforce development, and outreach/technology transfer goals, **METRANS and CSULB** hosted the International Association of Maritime Economists (IAME) from September 5 through 8, 2023 in Long Beach, California. Since its founding in 1992, IAME has developed into an international association with over 300 individual members from every continent and more than 10 corporate members. The Association is officially linked to two leading academic journals within the field: Maritime Policy & Management and Maritime Economics & Logistics.

The theme for this year's conference was "New Realities in the Global Maritime Economy." Researchers and industry leaders explored what is next for the maritime economy in an environment of lingering pandemic, geopolitical conflicts, rapid technological change, and increasing urgency to manage global climate change. The 2023 conference inspired participants, almost 200, from around the world with innovations and new collaborations between academia, government, and industries in response to a rapidly changing world. Detailed event agenda and details can be found [here](#).

Additionally, a group of fourteen USC students traveled to Long Beach to join the last day of the conference which featured a harbor boat tour of the Port of Long Beach. Students toured the POLB’s 25-mile waterfront and had the opportunity to examine the containers, cargo ships, and machinery used in the port’s day-to-day operations. Attendees learned about the port’s many community outreach programs including their Academy of Global Logistics partnership with Cabrillo High School. This program aims to foster interest in the global trade and logistics sector early in student’s educational careers and provides them with industry-relevant training and resources.

The tour introduced attendees to some of the port’s extensive environmental efforts including their Clean Air Action Plan, Shore Power Program, and Clean Trucks Program. The crowd-favorite tour stop



USC Price School of Public Policy students Tangguh Adiwiguno (left) and Gilang Desnantia (right) pose in front of a container crane.

was the Long Beach Container Terminal, a fully automated container terminal that replaces gear run by diesel with gear powered by electricity and low-emission fuels.

i. Workforce development

A highlight of our workforce development efforts in this reporting period is the METRANS hosted International Association of Maritime Economists conference, convened in Long Beach, California, Sept. 5-8, 2023. That major international event drew almost 200 scholars and maritime practice leaders from across the globe. While no UTC funding supported the event (due to the focus on many global activities worldwide), the synergy with PSR goals and with US DOT goals is clear. The event was co-sponsored by the Port of Long Beach, the Port of Los Angeles, and Starcrest Consulting.

A highlight event of this year’s IAME conference was the World Bank’s Transport Global Unit attendance and participation in the event. The Bank’s Transport Global Unit is led by Dr. Binyam (Ben) Reja, who serves as Global Practice Manager and Acting Global Director for Transport. Dr. Reja previously served as the Regional Practice manager for China, Mongolia, and Central Asia. While the Bank’s primary focus was to share their work on freight and logistics modeling, the Container Port Performance Index, and shipping decarbonization as part of the IAME conference, METRANS also arranged personalized study tours for the World Bank team with entities such as the Port of Long Beach, the Port of Los Angeles, and the Alameda Corridor Transportation Authority. During these tours, Mr. Reja and his team had the opportunity to converse with top executives about the port’s decarbonization efforts, emerging technology, and workforce training initiatives. Additionally, METRANS facilitated intimate meetings between the World Bank and several USC METRANS researchers including Geoff Boeing, Santana Contreras, Genevieve Giuliano, Ketan Savla, Maged Dessouky, and Petros Ioannou. Charles Kunaka, a Lead Transport Specialist on Mr. Reja’s team, met with Maged Dessouky and Petros Ioannou in the weeks following the IAME conference to continue the discussion on the World Bank’s global freight model. METRANS will continue building these relationships between the World Bank team and the local ports and our researchers, and we would be happy to assist US DOT in linking to this World Bank transport group.



Noel Hacegaba, Chief Operating Officer of the Port of Long Beach gives a presentation to the World Bank group.



METRANS director, Marlon Boarnet, and the World Bank Global Transport Unit overseeing the Port of Long Beach complex from a helicopter pad view.

PSR offers many ongoing workforce development programs that have been written about in-depth in past SAPRs. These programs include: **Commercial Driver License (CDL) Training** (PCC), an innovative Truck Driver Training Program that reaches out to a rural/tribal audience to provide the training and certifications necessary to start a career; **Southern California Workforce Development Needs Assessment for Supply Chain and Transportation Industries** (CSULB), identifies existing and future workforce skills gaps for middle-skill occupations in southern California’s supply chain and transportation chain industries; **Academy of Global Logistics (AGL)** (CSULB), this collaborative partnership combines academic curriculum with industry-led training to support academic and career development for high school students; **AZTrans** (NAU), supports STEM outreach activities that provide exposure to transportation to K-12 students and members of the public. Those are continuing with the BIL PSR UTC.

CSULB’s CITT CALTAP team hosted this year’s annual Western Regional NLTAPA meeting in April, bringing together local assistance partners and practitioners from neighboring state LTAPs, FHWA, and Caltrans. These regional meetings are an effective way for LTAP staff nationwide to celebrate successes, address common program challenges, and collaborate on approaches and strategies to better engage, support, and train local public agency clients. New to this year’s meeting was the addition of a one-day tribal peer exchange designed to both celebrate and better understand the cultural differences and transportation needs of California’s wide range of tribal communities. The event also offered an opportunity for CITT/CALTAP to expand their workforce partnerships with the Port of Long Beach, the California Workforce Association, and the Pacific Gateway Workforce Investment Network, all of whom participated in and contributed to the presentations and roundtable discussions.

CALTAP developed and delivered a live online GIS training class that introduced basic concepts, tools, and applications needed to begin creating useful, informative, and data-rich online maps. Held August 3, 2023, this initial pilot provided an opportunity to upskill non-GIS transportation professionals by demonstrating how incorporating GIS concepts and applications into their work products could help them convey complex, map-based dataset relationships in a way that engages with a broader more non-technical audience, like agency leadership and the public.

ii. **Education and Workforce Development goals for next reporting period**

During the next reporting period, PSR partners will continue to administer degree and non-degree training programs to a broad array of students. We will continue the PSR seminar series at USC, UCD, UCI, and UCLA. Seminars will continue to be offered in a hybrid format.

CSULB will provide curriculum development and teacher support to the four-year immersive Academy of Global Logistics (AGL) at Cabrillo High School. In addition, USC will continue these K-12 programs: Hybrid High School uses transportation to introduce high school students from underrepresented backgrounds to college readiness (match funded); Futures in Transportation (NSF and USC funded) introduces high school students to STEM careers in freight, including automation and clean fuels; and Across the Seas (match funded with support from Port of Long Beach) introduces middle school and high school students to goods movement, freight, and the environment. Audience: Approximately 30 students in each program per year.

CSULB will begin the development of a new training program that teaches skills demanded by employers in both public and private transportation organizations but not normally taught in traditional urban

planning programs. Topics include data visualization, modeling principles for non-modelers, mastering the public hearing, project management and budgeting, grant writing, and working with diverse communities. The cohort-based pilot will include representatives from underserved communities, including tribal communities and local agencies (including rural agencies) with limited training budgets. Audience: 10-20 professionals and community members per year.

C. Outreach Accomplishments

PSR conducts many outreach efforts that have been described in past SAPRs. Ongoing outreach activities include: **CSULB CITT Center Updates**, bimonthly e-blasts to industry/academia consisting of brief articles covering relevant Center activities with a focus on the freight sector and workforce development; **Logistics Peer Exchange** (CSULB), a peer exchange on best practices in regional freight planning and coordination; **METRANS on the Move** (USC), this is a weekly e-newsletter written and produced by USC students with staff guidance; **Mobility Matters** (CSULB), a CITT podcast series dedicated to addressing mission-critical issues facing the professionals who design, develop, operate, and maintain mobility systems.

METRANS News: During this past reporting period, USC METRANS and CSULB continued our newsletters, with newsletters in July and August 2023. The monthly newsletters are an example of transformative research. The newsletters cover research briefs, events and more, for example, Professor Dessouky's research on real-time driver-rider ride-matching algorithms was covered in the August newsletter. METRANS News also summarizes METRANS research, education, and outreach, including coverage of NCST- and PSR-funded projects and activities. It is distributed to 2201 scholars, students, staff at Caltrans, USDOT, UTCs and faculty throughout the U.S., to federal, state, and local public and private agencies, and to industry. The average open rate for all the newsletters for this reporting period was 66.55%, which is higher than Constant Contact's overall average of 5.10%. The range for a good open rate is 15-25%, and the newsletter's open rate greatly exceeds this range. The monthly newsletters are archived [here](#).

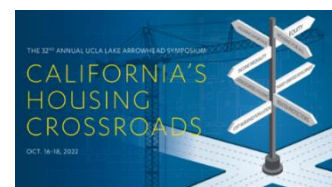
The focus of information dissemination for both **METRANS and CITT emphasizes LinkedIn** over other forms of social media. With the launch of the CA LTAP Center at CITT, efforts took place to launch a LTAP social media presence. CA LTAP has established a regular email newsletter and social media posting schedule.

Transfers Magazine: Transfers Magazine published its 11th issue in January 2023, consisting of three articles and an opinion piece from UC Davis and UCLA scholars. The website

www.transfersmagazine.org, which also features regularly updated blogs with transportation-related news, research and events, had more than 20,000 page views during this six-month period, which is a slight decrease to the previous six-month period.



UCLA Lake Arrowhead Transportation - Land Use - Environment Symposium: UCLA began planning the annual UCLA Lake Arrowhead Symposium on the Transportation - Environment - Land Use Connection which took place October 15-17, 2023. The theme was



titled “Transforming Transportation” which covered solutions for professionals, elected officials, and advocates working on transportation and regional economic issues.

During this reporting period, Tyler Reeb (**CSULB**) produced a podcast, “Mike Davis and American Mobility.” The podcast featured guest Mike Sonksen, a Los Angeles-based educator, journalist, and poet, to discuss the indelible imprint that Davis has left on American letters and his incisive commentary on American mobility. During this reporting period, Tyler also recorded interviews for his next podcast addressing Talent Pipeline Management for the trade and transportation sector.

CSULB hosted the 2023 Western NLTAPA Regional Meeting & Tribal Peer Exchange April 25-27. The National Local & Tribal Technical Assistance Program Association (NLTAPA) is a not-for-profit organization representing and serving the 52 LTAP and TTAP Member-Centers in the United States and Puerto Rico. The western NLTAPA regional meeting in Long Beach allowed the CALTAP team, housed at CITT, to showcase some of the partners and projects that make the city and region unique. The Port of Long Beach hosted the three-day session at its downtown headquarters and offered meeting attendees a tour of the Long Beach Container Terminal. The meeting also included participants from California’s Tribes as well as tribal liaisons from CALTAP, SANDAG, and other organizations as part of a tribal peer exchange.

On September 25, 2023, at the National Transportation in Indian Country Conference, Tyler Reeb (**CSULB**) moderated the Transportation Research Board (TRB) Standing Committee on Native American Transportation Issues mid-year meeting. During that mid-year meeting, Tyler also presented an update on A National Tribal Transportation Peer Exchange Summit, that TRB and National Academies leadership will finalize in October 2023. Titled “Benchmarking Equity and Mobility Needs for Tribal Governments,” the summit will address key transportation workforce development issues for a Tribal Self-determination Model. We anticipate that our community-partnered research project on tribal transportation needs (discussed earlier) will present interim results at this summit in 2024.

i. Outreach plans for the next reporting period

METRANS will hold its next **Advisory Board meeting** on November 1, 2023. The *Transfers Magazine* was released in January and June 2023, <https://transfersmagazine.org/>.

PCC will continue to engage in speaking and outreach opportunities to disseminate results of various programming.

NAU AZTrans faculty have volunteered to provide in-school presentations to local K-12 students every academic year.

UNLV will host the 2024 PSR Annual Congress from March 11-12. The PSR Congress gathers transportation stakeholders from throughout the region together to share new research results, best practices, and education and training tools produced by PSR. It also serves as a major networking event to build a regional transportation community. Each year the Congress is hosted by one of the consortium schools, in partnership with consortium universities and government and industry partners. We open PSR Annual Congress attendance to scholars and students at any university in Region 9, in or out of PSR, to serve the region, and we collaborate closely with the practice community to be sure they

have a role in and benefit from the PSR Annual Congress. Last year's annual congress drew approximately 150 attendees, almost 2/3 of whom were students.

USC and **CSULB** will begin planning for the fall 2024 International Urban Freight Conference, a signature PSR event that serves as a gathering of leading researchers and practitioners in urban freight. The conference is held every two years in Southern California.

The editorial and outreach team at **CSULB** CITT is working with staff at USC to design and implement a communications approach that works for newer staff at both institutions, eliminating superfluous steps. CITT is also helping newer USC staff become familiar with METTRANS website design software. Both CITT and USC teams are also exploring new branding strategies to incorporate into logo, web, social media, editorial outreach, and event planning efforts.

2. Participants & Collaborating Organizations

Participants contribute to the work of the PSR through financial or other support, or directly in research, education, or technology transfer. Collaborating organizations participate in Center activities, provide advisement, or support the center.

A. Financial support

Over the course of the grant, these are among the entities who provided match funding for PSR research projects:

- California Department of Transportation (Caltrans)
- Los Angeles Business Council (LABC)

B. Other support

The following organizations provide or have provided in the past (e.g. Fast Act UTC) indirect or in-kind support to PSR:

- **California:** AECOM (Los Angeles); Alliance for Community Transit; Amtrak Capitol Corridor; California Energy Commission (CEC); California Transit Association; Caltrans Office of Earthquake Engineering, Analysis and Research; City of Anaheim; City of Anaheim; City of Davis; City of Santa Clara; Cool Davis; Council of Supply Chain Management Professionals (CSMCP); Fehr & Peers; Foothill Transit; Gateway City Council of Governments; Governor's Office of Business and Economic Development (GO-Biz); HDR; International Longshoremen and Warehousemen's Union (ILWU) Local 13; Investing in Place (Los Angeles); Kiwi Inc.; Long Beach Transit; Long Beach Unified School District; Los Angeles Department of City Planning; Majestic Realty; MetroLink; Nixon Peabody; Orange County Transportation Authority (OCTA); Port of Los Angeles; San Francisco Metropolitan Transportation Commission; San Francisco Municipal Transportation Agency; Santa Clara County Assessor's Office; Southern California Association of Governments (SCAG); Southern California Edison; Toole Design Group; Tree People/Climate Resolve (Los Angeles); UC Davis Feminist Research Institute; UC Davis Policy Institute for Energy, Environment, and the Economy; UC Davis Road Ecology Center; UC Institute of Transportation Studies (UC-ITS); Watson Land Company; Yusen Terminals LLC

- **Arizona:** Arizona Board of Regents, Chamberlin Group, Pima Association of Governments, Northern Arizona University, Southern Arizona Anti-Trafficking United Response Network (SAATURN)
- **Hawaii:** National Disaster Preparedness Training Center (NDPTC), University of Hawaii
- **Others:** Federal Highway Administration; King County Metro (Seattle, WA); staff from state DOTs in California, Colorado, Maine, Minnesota, Nevada, and Virginia.

Additional Support

PSR has a tremendous network of partners. Additional supporters include: **Council of University Transportation Centers (CUTC)**, Thomas O'Brien (CSULB) completed his tenure as president of CUTC and Genevieve Giuliano (USC) is a past president and past executive committee member, and Susan Handy (UCD) is a member of the board; **Institute of Transportation Studies (ITS)** (UCD, UCI, UCLA), provides match funding and other resources; **MetroFreight Center of Excellence** (USC, CSULB), METTRANS is the home of the Volvo Research and Education Foundation (VREF) Center of Excellence on urban freight and offers many opportunities for international collaboration and partnerships; **National Center for Sustainable Transportation (NCST UTC)** (UCD, USC), strengthens and expands our work in sustainable freight transport; **Southwest Transportation Workforce Center** (CSULB), provides significant infrastructure and professional capacity in support of workforce development programs for PSR; **The Center for International Trade and Transportation** (CSULB), uses its media and social media channels to announce events and other opportunities to a network of students and industry and government partners; **Toastmasters International** (CSULB), provides public speaking competency training for undergraduates; **TuSimple** (PCC), offers program support and priority hiring to graduates; **UCLA Lewis Center for Regional Policy Studies**, provides workspace and matching funds researchers and staff at UCLA ITS; **Velodyne Lidar** (UCI), provided a donation of two LiDAR units that are supporting current graduate student fellowship and faculty research projects. The following **METRANS Associates** provide additional financial support: LA Metro, Majestic Realty, Port of Long Beach, , Metrolink, Southern California Association of Governments, WSP USA, Los Angeles World Airports, San Diego Council of Governments and Nixon Peabody.

C. Collaborations

PSR has an extensive network of collaborations with academic, public and private organizations. Many of these have been described in past SAPRs. Ongoing collaborations include: **Arizona Technology Park** (PCC), seeks to bring economic developers and academic researchers together to attract autonomous vehicle manufactures to southern Arizona; **Florida Atlantic University** (UH), engages in collaborative research on the use of visualizations to improve the understanding of sea level rise Impacts to transportation in FL and HI; **Maricopa Association of Governments** (NAU), continues to work on pilot evaluation projects with the **University of Arizona**; **Oregon State University** (NAU), partners on two research projects funded by the **Oregon Department of Transportation**; **University of Antwerp** (CSULB), developing an executive workshop that address pharmacological supply chains including the rollout of vaccines in the City of Long Beach.

USC partners with:

- The Los Angeles Business Council (funding) and several industry partners (knowledge supporting, partners include the Harbor Trucking Association and trucking firms) on research into California's Advanced Clean Fleets zero-emission truck regulation.

- The World Bank Global Transportation Group
- The California Air Resources Board
- The Southeast Los Angeles Collaborative
- And, though the METRANS Associates Program and wider knowledge and technology transfer interactions, a range of entities including: The Gateway Cities Council of Governments, the City of Los Angeles, L.A. Metro, the Southern California Association of Governments, the San Diego Association of Governments, the Hueneme, Ports of Long Beach, Los Angeles, and San Diego, and several other public, private, and non-profit entities.

UNLV is partnered with the following organizations:

- MGM Grand Hotel and Casino Group in Las Vegas, Nevada. Partner's contribution to the project (identify one or more): in-kind contributions – facilitate engagement with employees (the target audience) by encouraging them to participate in the surveys
- The Regional Transportation Commission of Southern Nevada in Las Vegas, Nevada. Partner's contribution to the project (identify one or more): in-kind contributions – access to relevant data, project reports.
- Nevada Resorts Association in Las Vegas, Nevada. Partner's contribution to the project (identify one or more): in-kind contributions – facilitate engagement with employers.

CSULB is partnered with the following organizations:

California State Transportation Agency (CalSTA)

- World Bank
- International Association of Maritime Economists (IAME)
- California Air Resources Board (CARB)
- Governor's Office for Business (GO-Biz)
- Japanese Ministry of Land, Infrastructure, Transport and Tourism (MLITT)
- Intermodal Association of North America (IANA)
- IANA Expo Sept 2023: provided support to allow 50 students in the Port of Long Beach Academy of Global Logistics to attend the 2023 Intermodal Expo. CITT, as part of its work with the Port on the project, coordinated the student experience during the conference including having high school students shadow undergraduate students taking part in a case study competition.

NAU is partnered with the following organizations:

- MAG (Maricopa Association of Governments). They have an ongoing partnership with MAG is ongoing, and we are currently working with them on scope for two new emerging technologies product evaluations.
- Phoenix: They are working on a task order to provide guidance to the city on implementation of LPIs (Leading Pedestrian Intervals) and other signalized intersection pedestrian treatments across the city. Additionally, we expect to begin work during the next period on a new task order to assist the City with configuration and evaluation of an Advanced Traffic Management System.
- They are still working on coordinating with the City of Prescott with the goal of establishing an IGA between the city and NAU. These efforts are still ongoing.

- NAU has maintained our established relationship with the Arizona Institute of Automated Mobility (IAM). The IAM was established by the Arizona Governor in 2018 to provide technical guidance and coordination aimed at fostering the implementation of automated mobility across Arizona.

At UH, they are collaborating with:

- Lisa Staes, Director, Center for Urban Transportation Research – Lead Institution on the C-STTAR (Center for Surface Transportation Testing and Academic Research) consortium. Lead P.I. on Consolidated Rail Infrastructure and Safety Improvements (CRISI) for the Federal Railroad Administration - Comprehensive Approach to Promoting Railroading Careers and Developing the Current Rail Industry Workforce. UH is a Co-PI on this project.
- Dr. Hilary Nixon, Deputy Executive Director, Mineta Transportation Institute, San Jose Institute – Lead P.I. on Consolidated Rail Infrastructure and Safety Improvements (CRISI) for the Federal Railroad Administration - Climate Change and Extreme Events Training and Research (CCEETR) program. UH is a Co-PI on this project.
- Ruben Pena, Director of Government Surface Transportation; Boris Nejikovskiy, Special Advisor; Eric Sherrock, Senior Engineer; Eric Magel, R&D Manager - ENSCO is the recipient of the contract to manage the Transportation Technology Center, a US DOT Federal Railroad Administration (FRA) center. Working on Hydrogen Transport Futures projects with ENSCO.
- Deborah Matherly and Patricia Bye of MIRTA, LLC on Transportation Research Board, ACRP 04-29 Transportation Emergency Response Application (TERA): Migration Options Beyond 2020, and on proposed research for the Federal Rail Road Administration’s Broad Agency Announcement titled “Derailment Evacuation Planning: Knowledge Management to Action. UH is a subcontractor on the Transportation Research Board, ACRP 04-29 Transportation Emergency Response Application (TERA): Migration Options Beyond 2020 project, and the lead on the “Derailment Evacuation Planning: Knowledge Management to Action” proposal.

3. Outputs

PSR outputs include publications, reports, papers, presentations, media, and others. Our target for peer-reviewed publications is 5 per year; our target for presentations is 10. During this upcoming reporting period, we plan to produce **15 peer-reviewed** journal publications and **15 presentations**.

A. Websites

The [PSR website](#) is the central, authoritative source of information regarding our center. Our consortium members also maintain additional sites that contain information relevant to PSR’s research and activities. Some of these sites are:

- CITT (CSULB): <https://www.cpie.csulb.edu/center-for-international-trade-and-transportation>
- eScholarship (UCD, UCI, UCLA): <https://escholarship.org/>
- ITS-Davis: <https://its.ucdavis.edu/>
- METRANS: <https://www.metrans.org/>
- NAU PSR UTC: <https://in.nau.edu/aztrans/psr-region-9/>
- PCC’s Center for Transportation Training has a facebook, instagram and twitter page: [@pcctruckdriver for all](#)

- Transfers Magazine (PSR flagship publication): <http://www.transfersmagazine.org/>
- UC Davis Feminist Research Institute: <https://fri.ucdavis.edu/>
- UC Davis Policy Institute for Energy, Environment, and the Economy: <https://policyinstitute.ucdavis.edu/>
- UCI ISERT conference: www.its.uci.edu/isert2020
- UCI seminar series: www.its.uci.edu/seminars
- UCLA ITS YouTube channel: <https://www.youtube.com/c/UCLAInstituteofTransportationStudies/>
- UCLA ITS: <http://www.its.ucla.edu>
- UCLA Lake Arrowhead Symposium: <http://www.uclaarrowheadsymposium.org>
- Open access to UCLA Institute of Transportation Studies reports, capstone projects, and policy briefs: https://escholarship.org/uc/ucla_its
- UH website (includes posts on PSR research): <https://ndptc.hawaii.edu>
- UH Twitter: <https://twitter.com/disasterctr>
- UH Facebook: <https://www.facebook.com/disasterctr>

B. New methodologies, technologies, or techniques

Nothing to report.

C. Other products

Nothing to report.

4. Outcomes

PSR's goal is to effectively and efficiently move research to practice so that new knowledge can be shared, acted upon, and contribute to a more efficient, sustainable, and equitable transportation system. We achieve our goal through technology transfer activities: events, communications, training, and client-based research. We define outcomes as any changes made to the transportation system, or its regulatory, legislative, or policy framework, resulting from research and development outputs.

PCC issued few of the commercial driver license (CDL) graduates photos and stories are below:



Carlos V. graduated with his Class A CDL in September 2023 and is researching his local driving job options.



Mario R. passed his Class A CDL September 2023 and hopes to get a job with Shamrock food distribution company now that he has his Class A CDL.

UCLA's fellowship program was able to support 6 graduate students with tuition and fees for the 2023-24 academic year. This includes 2 PhD students and 4 incoming master's students: 3 MURPs, and 1 MPP student. The fellowship program provides funding and education support for students. Through these fellowships, the students gain invaluable experience in transportation through working with clients, faculty researchers, and clients. As such, the program anticipates the development of highly-skilled professionals into the workforce to shape our complex transportation needs in the U.S.

CSULB's work with high school students as part of the POLB Academy of Global Logistics demonstrates the potential for immersive logistics training over a four-year period. Students who are part of the AGL program gain knowledge of the industry and interact with industry personnel over the course of their four years of study. CSULB's work in developing a 12th grade capstone course for the program and helping to get it approved for college credit contributes to the development of career pathways and helps to increase access to college for students where cost is a barrier.

Scholarly Awards:

Nothing to report.

5. Impacts

PSR defines an impact as that which influences the transportation system, or society in general, such as reduced fatalities, decreased capital or operating costs, community impacts, or environmental benefits. The journey of generating outputs and impacts is uncertain and happens over time. Our contributions are judged by the PSR Advisory Council and measured as significant or not significant. PSR's research products are made [available to the public](#).

Nothing to report.

6. Changes/Problems

Changes in approach and reasons for change

Nothing to report.

Problems and delays encountered during the reporting period

Delays in award agreements has post-poned the initiation of **UCLA**-related activities for this grant.

UNLV's administrative / contracting steps have taken on longer than anticipated. But, much of this has been completed. As a result, there has been a delay to bring on a graduate student to work on the Community Partnered Project. Due to the administrative delays, UNLV has not yet incurred any costs to the federal grant account.

Change of primary performance site location

Nothing to report.

7. Special Reporting Requirements

Nothing to report.

8. Appendix A

This appendix includes lists (non-exhaustive) of PSR researchers' publications and presentations from the current reporting period.

Publications

Peer-reviewed journal publications

1. Kim, K., Joo, Y.M., & Lee, D. (2023). Going Slow to Build Resilience: Cittaslow in Korea's Rural Regions. KDI School of Public Policy and Management Paper, 23(05). <http://dx.doi.org/10.2139/ssrn.4540070>.
2. Kim, K., Yamashita, E., Ghimire, J., Bye, P., & Matherly, D. (2023). Knowledge to Action: Resilience Planning Among State and Local Transportation Agencies in the United States. *Journal of Emergency Management*, 21(1). <https://doi.org/10.5055/jem.0715>.
3. Shen, S., Kim, K., & Liu, D. (2023). Aging in Place or Moving to Higher Ground: Older Adults' Adaptation to Sea Level Rise in Honolulu, Hawaii. *Sustainability*, 15(12), 9535. <https://doi.org/10.3390/su15129535>.

Other publications

Conference papers

4. Reeb, T. D., & Park, S. (2023, February). *Trade and Transportation Talent Pipeline Blueprints: Building University-Industry Talent Pipelines in Colleges of Continuing and Professional Education* [Paper presentation]. Mineta Transportation Institute, San José, CA. February 2023. https://transweb.sjsu.edu/sites/default/files/2144-Reeb-Trade-Transportation-Talent-Pipeline-Blueprints_0.pdf.

Presentations

5. Harris, S., Lenentine, M., Forest, J., Balmores, A., Priester, S., Takaki, S., & Kalaiwa'a, G. (2023, May 18). *Introducing Resilience Hub Planning on Oahu: Community-based, Active Learning and Neighborhood Scale* [Online Presentation]. University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars. <https://www.youtube.com/watch?v=pU6NBolwDBQ>.
6. Marasco, D., Pickett, E., Barretto, N., Tremsin, V., & Buckwald, M. (2023, June 15). *Wildfire Mitigation Strategies* [Online Presentation]. University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars. <https://www.youtube.com/watch?v=4See8A8BV8>.
7. O'Brien, T. (2023, March 16). Fourth Annual National Mobility Summit. *Panelist*, 114-140. Washington D.C.: Carnegie Mellon University. Retrieved from <https://mobility21.cmu.edu/wp-content/uploads/2023/03/Presenter-Slides-Combined.pdf>
8. Smaglik, E. (2023, April). *Prioritizing Bicyclist Safety and Mobility: Which Guidance Do I Use?* [Conference presentation]. ITE/IMS A Annual Meeting, Phoenix, AZ, United States.
9. CSULB O'Brien, T. (2023, April 12). eTRUC: Workforce Development Advisory Committee (WDAC) Quarterly Meeting. *Presentation at GRID Alternatives Greater Los Angeles*.
10. Janiszewski, H., Vorce, M., Yanik, F., & Ham, C. (2023, April 20). *Earthquake in Turkey* [Online Presentation]. University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars. <https://www.youtube.com/watch?v=Me8Tpfc2LpY>.
11. O'Brien, T. (2023, May 9). International Warehouse Logistics Association Event. *Presentation at International Warehouse Logistics Association*.

12. O'Brien, T. (2023, May 9). Equity Approaches in Education . *Panelist at Community of Inclusion & Equity Symposium: Equity in Infrastructure*. Brea, CA, United States: Burns McDonnell .
13. O'Brien, T. (2023, May 24). The Paths Ahead: Governance Options for Transforming Ports and Shipping. *Closing Panelist at Governing Green Shipping Transformation Pathways to Marine Sustainability*. Vancouver, BC, Canada: Simon Fraser University.
14. O'Brien, T. (2023, June 16). Next Generation ITS Workforce. *Panelist at ITS Canada*. Windsor, ON, Canada: St Clair College Centre for the Arts.
15. O'Brien, T. (2023, July 1). Network of Next Generation Digital Ports. *Presentation at Digital Ports*. Valparaiso, Chile: University of the Andes.
16. O'Brien, T. (2023, July 18). A Day in the Life of an LTAP Center. *Panelist at NLTAPA* . Columbus, OH, United States: NLTAPA.
17. Hon, K., & Houghton, B. (2023, July 20). *Mauna Kea and Kilauea Eruptions and the CONVERSE Scenario Building Institute* [Online Presentation]. *University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars*. <https://www.youtube.com/watch?v=yM9oREnJfjI>.
18. Ewan, M., & Arumugam, G. (2023, August 17). *Advancing Toward a Hydrogen Powered Society* [Online Presentation]. *University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars*. <https://www.youtube.com/watch?v=LYg-xQ93uOk>.
19. O'Brien, T. (2023, September 6). History of Global Trade & Global Trade Policy. *Presentation at Long Beach, CA: CSULB's Global Logistics Professional program*.
20. Gramann, A., & Miller, R. K. (2023, September 21). Disaster AWARE and the Maui Wildfires. *Online Presentation at University of Hawaii NDPTC National Disaster Preparedness Training Center Webinars*.

Research Reports

Nothing to report.