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1. Accomplishments

What are the major goals of the program?

The Pacific Southwest Region University Transportation Center (PSR) addresses the transportation issues of Region 9 through an integrated, multidisciplinary program of research, education, and technology transfer aimed at FAST Act research priority area 1: improving the mobility of people and goods throughout the region. The goal of PSR is to improve passenger and freight transportation throughout Region 9.

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, Davis (UCD), University of California, Irvine (UCI); University of California, Los Angeles (UCLA); University of Hawai'i at Manoa (UH); Northern Arizona University (NAU); and Pima Community College (Pima).

The regional UTC must reach beyond the consortium, offering connections to all transport stakeholders within the region. In order to fulfill its goal, the PSR:

- Established a region-wide advisory council of government, academic, and industry leaders to provide guidance on all aspects of the center's activities
- Executes a research program informed by the needs of the region
- Is establishing a web-based clearinghouse for degree and non-degree curricula
- Develops training and workforce development programs transferable across the region
- Holds an annual Region 9 Congress to share research and best practices
- Conducts a comprehensive program of information dissemination, technical assistance, and communications.

What was accomplished under these goals?

During this reporting period we completed the setting up of the new center. We established the PSR Advisory Council, held our first PSR Congress, held several signature events, launched Year 1 research projects at 6 of the 8 partner universities, issued the Year 2 RFP, and completed our Data Management Plan.

a. Administrative Accomplishments

- We held PSR Executive Committee meetings in July 2017, January 2018, and March 2018. Additional meetings were held for approval of proposal awards (August 2017) and planning for the PSR Congress (July 2017, December 2017, February 2018). The first meeting of the PSR Advisory Council took place March 2018.
- UCLA Institute of Transportation Studies (ITS) concluded the hiring process for two staff positions: Communications Manager and Data and Systems Manager. The Communication Manager serves as the Managing Editor for the PSR *Transfers* magazine

- University of Hawaii (UH) has hired an Assistant Director for Course Development and Research (Dr. Pradip Pant) under the National Disaster Preparedness Training Center (NDPTC). He will provide assistance with some of UH's PSR administrative and research activity monitoring duties.
- The UTC Program kick-off meeting with USDOT was held on August 17, 2017, with representatives from each partner in attendance.

Our research, education, and technology transfer accomplishments are presented in the following sections of the report.

b. Research Accomplishments

The role of a regional center is to address regional issues 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 four themes that are derived from the transportation needs assessment conducted during the proposal preparation process.

Research Themes and topics

Theme 1: Technology for Improved Mobility

This theme explores technology solutions for improving mobility for both passengers and freight. It is organized around three topic areas:

- **Technology and mobility (Topic 1-1):** Emerging technologies and their potential for improving passenger and freight mobility.
- **Smart infrastructure and vehicles (Topic 1-2):** Technology for connected and autonomous vehicles (CAVs).
- **Public policy and implementation (Topic 1-3):** The role of government in technology implementation and regulation.

Theme 2: Improving Mobility for Disadvantaged Populations

Research in Theme 2 addresses mobility and accessibility problems of disadvantaged populations. It includes two topic areas:

- **Novel modes for improved mobility and accessibility (Topic 2-1):** The potential of novel modes, new models of public transport, and new models of private vehicle access to address mobility problems.
- **Land use, accessibility, mobility (Topic 2-2):** Impacts of limited accessibility and mobility both in urban and rural areas; role of land use policies in reducing access barriers for underrepresented groups.

Theme 3: Improving Resilience and Protecting the Environment

Research in Theme 3 addresses all aspects of environmental protection. It includes three topic areas:

- **Analyzing alternative resilience strategies (Topic 3-1):** Frameworks to analyze resilience strategies at different geographic scales; resilience and unexpected events
- **Smart technologies (Topic 3-2):** Smart technologies for system monitoring and maintenance
- **Reducing environmental impacts (Topic 3-3):** Reducing environmental impacts while meeting the mobility needs of society, fostering healthy communities, and supporting economic growth.

Theme 4: Managing mobility in high growth cities and regions

This theme addresses the transportation problems of regions and metro areas experiencing rapid population and employment growth, and are expected to continue to grow.

- **Managing passenger demand (Topic 4-1):** Meeting human needs while lessening travel required; role of planning and urban design; urban rural, and intercity travel.
- **Managing freight demand and its impacts (Topic 4-2):** Managing freight, both last mile and regional; impacts of e-commerce and other changes on local and regional mobility.

Research Selection

Our research program has three parts: 1) research conducted by PSR faculty; 2) research conducted by researchers inside or outside PSR but within Region 9; and 3) a graduate research fellowship program. We have reserved a small pool fund for a Region 9 wide solicitation. Its purpose is to promote broader participation across the states and territories, in keeping with the purpose of a regional UTC.

Year 1 RFP

The Year 1 RFP was distributed on a rolling schedule by USC and partners. As noted in PPPR 1, USC created a template that is customized to each university. The Year 1 RFP includes only USDOT funds. It was distributed by USC and CSULB in April 2017, UCLA in May 2017, and UH in June 2017. UCD combined its NCST and PSR RFP and issued it in March 2017. UCI did not issue a Year 1 RFP until September 2017 when match funding became available; at UCI the USDOT funds are used mainly for student fellowships. Pima College does not have a research program, and NAU is using its USDOT research funds for graduate fellowships. A total of 15 research projects were selected for funding: five from USC, four from UCD (including one white paper and one seed grant), two from UH, and one from UCLA. One CSULB project is approved, but awaiting match funding. One UCD project was delayed due to delays by the overall project lead, City of Davis. A revised proposal was submitted and approved. Pooled fund projects were awarded to UC Riverside and UC Santa Barbara. Year 1 projects funded and approved are listed in Table 1 by partner/ID, theme, title, funding source, and status. Abstracts for all Year 1 projects are available on the PSR website.

Year 2 RFP

We aim for an RFP schedule that starts in early spring so that projects can be approved and ready for funding at the beginning of the following academic year. The California universities have the additional objective of scheduling the RFP to include both USDOT and match funds from Caltrans, and USC and UCD seek to coordinate RFPs for PSR and the National Center for Sustainable Transportation.

The Year 2 RFP template was circulated by USC in February 2018.

- USC/CSULB issued a combined RFP for PSR and NCST, and for USDOT and Caltrans (Year 1) match funds in March, with proposals due in April. Eleven proposals were received from USC and other pool fund universities, and are currently under review.
- UCD issued two RFPs, one for USDOT funds in February, and one for Caltrans funding in March. Both included NCST and PSR. Proposals are currently under review.
- UCLA issued the Year 2 RFP in February, and proposals are currently under review.

UCI and UH did not issue a Year 2 RFP during the reporting period

Table 1: Year one research projects

Partner	Project No.	Theme	Title	Funding Source	Status
USC	MT-17-02	Technology for improved mobility	Integrated Traffic Flow Control in a Connected Network	USDOT	Active
USC	MT-17-04	Improving resilience and protecting the environment	The Cost-Effectiveness of Alternative Policies for Reducing GHG Emissions in the Freight Sector	USDOT	Active
USC	MT-17-06	Technology for improved mobility	An Empirical Analysis of the Impact of Smart, Connected Navigation Systems on Traffic Congestion	USDOT	Active
USC	MT-17-09	Improving mobility for disadvantaged populations	Examining Spatial Mismatch Through a New Geography of Opportunity Index	USDOT	Active
CSULB	MT-17-11	Technology for improved mobility	Evaluation of Autonomous Vehicles and Smart Technologies for Their Impact on Traffic Safety and Traffic Congestion	Caltrans	New
UC Davis	UCD-17-03	Technology for improved mobility	Next-Generation Transit System Design Under Revolution of Shared Mobility	USDOT	New
UC Davis	UCD-17-09	Managing mobility in high growth cities and regions	Socio-cultural and Historical Factors in Active Transportation	USDOT	New
UC Davis	UCD-17-13	Improving resilience and protecting the environment	Automated Analysis of Wildlife-Vehicle Conflict Hotspots Using Carcass and Collision Data	USDOT	New
UCLA	UCLA-17-05	Improving resilience and protecting the environment	BridgeR—a Regional Seismic Hazard Assessment Tool for Transportation Networks & its Application to Freight Loss Assessment	USDOT	New
UC Riverside	UCR-17-10	Improving resilience and protecting the environment	Connected Emission Control Technologies for Freight Vehicles	USDOT	Active
UC Santa Barbara	UCSB-17-05	Improving mobility for disadvantaged populations	Vertical Equity Statewide Pilot, Data Inventory, and Guidelines for Performance Based Planning	USDOT	Active
University of Hawaii	UH-17-01	Improving resilience and protecting the environment	A Primer on Coastal Transportation System Resilience and Adaptation to Sea Level Rise on Oahu Using Living Shorelines and Green Infrastructure	USDOT	New
University of Hawaii	UH-17-02	Improving resilience and protecting the environment	Physical Exposure and Social Sensitivity: Estimating Sea Level Rise Impacts to Transportation through Vulnerability Assessment and Social Media Analysis	USDOT	New

Match Funding

PSR has the following match funding priority rankings: new funding, match from other existing research projects, and in-kind match. We have focused on obtaining new funding. First, the University of

California partners were awarded a new source of state funding. SB1, which increased the California fuel tax by 12 cents per gallon, provides annual funding to the UC Institute of Transportation Studies. UCD, UCLA, and UCI receive SB1 funds that will be used for PSR match. Second, Caltrans has committed to a 25% to 50% match for PSR (25% in Year 1, 50% thereafter). A new Caltrans contract is still pending, and therefore all Caltrans match projects are delayed. Third, USC has obtained research funding from local industry and agencies for specific projects (these will start in the next reporting period). NAU has received match funding from the Arizona Board of Regents Research Innovation Fund for research aimed at increasing freight safety and mobility along the I-10 corridor. It is anticipated that additional funding will come from the Arizona state DOT. U Hawaii requires each research project to provide its own match; the match is mainly in-kind.

Graduate Research Fellowships

Graduate research fellowships are reported in the Education section below

Opportunities for Research

Student support is an important component of research project selection. USC, CSULB, and UCD require that research projects include student support. Of the Year 1 projects that were in progress during this reporting period, a total of 23 student positions were included: USC, 4 graduate, UCD 3 graduate, 3 undergraduate; UCLA, 4 graduate; UH 2 undergraduate, UCR, 4 graduate, UCSB, 1 graduate, CSULB, 3 graduate and 2 undergraduate.

Dissemination

Dissemination of our research results takes place via research reports and research briefs, scholarly publications, popular publications, conference presentations, and media. None of the research projects have yet been completed, and no research reports have yet been produced. Two presentations (one at TRB (NAU), one at PSR Congress (UCD)) and one paper (TRB, NAU) have resulted from PSR research during this reporting period.

Plans for Next Reporting Period

The next reporting period is April 1, 2018 through September 30, 2018. Our plans for the next reporting period are:

- Begin the remaining Year 1 projects
- Complete the review and selection of Year 2 projects at USC, CSULB, UCD, UCI, UCLA, UH with projects beginning in Fall 2018
- Continue solicitation of new match funding for research

c. Educational Accomplishments

PSR's education goal is to foster education and training to produce the next generation of academic scholars, professionals, and skilled workers. PSR seeks to:

- Attract large numbers of the best students from non-traditional transportation fields – especially those from underrepresented groups – into transportation careers through personal and targeted recruitment from high-schools, community colleges, and universities
- Expand and enhance the multidisciplinary aspects of our transportation education programs, and student exchanges among campuses

- Conduct a comprehensive workforce development program

New and Continuing Activities Associated with Degree Programs

Postdoctoral researcher: For the 2017-18 academic year, we appointed two postdoctoral scholars at USC using remaining Tier 1 funds.¹ UCLA ITS hired 1 postdoc during the 2017-18 year. This position is not funded with PSR State or Federal Funds. UH's budget does not include the hiring of a Postdoc, but funding through the RFP may provide partial support for postdocs by PIs. Other consortium members have no plans to hire postdocs for 2017-2018 using PSR funds.

Graduate research fellowship program: Attracting the best, brightest, and most diverse students to transportation education programs at the graduate level is critical to the future of the discipline, and is a central component of the PSR program. Research fellowships are administered by the individual campuses as part of the student recruitment process, and in each case culminates with a student-led, faculty-supervised transportation research project to be posted on the PSR website.

- NAU awarded a partial AY18-19 fellowship focused on investigating the impacts of Particulate Matter (PM) in megaregions.
- NAU awarded an AY18-19 fellowship focused on investigating the causes and impacts of crashes in the Arizona megaregion, and identifying possible countermeasures to reduce impacts.
- UCD awarded Cory Parker with a \$25,000 grant to support his dissertation on "Homeless mobility: Low-tech sustainable approaches to transcending transportation exclusion."
- In fall 2017 UCLA awarded fellowships to 31 incoming and continuing student: 3 PhD Urban Planning, 3 MPP, 25 MURP.
- In fall 2017, UCI awarded fellowships to 14 graduate students

USC, CSULB, UCD, and UH support graduate students through research projects and education and outreach activities. The number of students supported was reported in the Research section.

Graduate student exchange program

To take advantage of the substantial disciplinary and geographic variety of the PSR transportation education programs, PSR funds a graduate student exchange program to support their research visits to other member campuses to work with transportation faculty for up to one summer month. No student exchanges took place during the reporting period.

Supporting students to attend conferences and other events

Students at two partner institutions were supported to attend conferences and other events. NAU brought 15 students to ITE/IMSA, the annual traffic operations conference; partially funded 3 students to present at the TRB Annual Meeting, funded 6 students to present at the ITE Western District Conference, and one student to attend the I-NUF conference. UC Davis supported one student to attend the I-NUF conference.

Seminars

¹ Presented here for information only; reported as part of METTRANS Tier 1 UTC.

Table 2: PSR Research Seminars

USC		
Date	Title	Speakers
9/27/2017	Scalable Microscopic and Macroscopic Management of Urban Traffic Systems	Ketan Savla University of Southern California
11/01/2017	An Empirical Analysis of Digital Freight Matching	Seiji Steimetz Long Beach State University
11/29/2017	Technology Adoption and Usage Business Model Development in Urban Freight	Jon Williamsson University of Gothenburg
1/31/2018	Agglomerations in Southern California	Peter Gordon University of Southern California John Cho Southern California Association of Governments
2/16/2018	Logistics Sprawl: Spatial Patterns and Characteristics of New Warehousing Establishments	Gagandeep Singh University of Toronto
2/21/2018	Centralized Processing of Chassis: Modelling, Analysis, and Optimization	Timothy Vanderbeek Claremont Graduate University/Long Beach State University
UC Irvine		
Date	Title	Speakers
11/21/2017	Information collection behaviour and stability of day-to-day dynamics in a transport system	Takamasa Iryo Kobe University, Japan
6/28/2017	Connected and automated vehicles: summary of current activities	Dean Deeter Athey Creek Consultants
1/24/2018	Graduate colloquium on redefining mobility	Randy Iwasaki Contra Costa Transportation Authority Ramin Massoumi Transportation Systems, Iteris, Inc Philip Trom San Diego Association of Governments
UC Davis		
Date	Title	Speakers
10/13/2017	Network Congestion Effect of E-Hailing Transportation Services	Dr. Jeff Ban Department of Civil & Environmental Engineering University of Washington
11/17/2017	Driving More Sustainable Mobility	Adam Gromis Global Lead on Sustainability and Environmental Impact Uber , Policy & Communications Team
02/09/2018	Assessing impacts of transport innovations – Electrification Automation, and Sharing – through ride-hailing research	Dr. Alejandro Henao Transportation Systems Group National Renewable Energy Laboratory (NREL)

The PSR hosts approximately 12 seminars each year, available online for students at all PSR institutions (via webinar or recorded and available through iTunesU). The main purpose of the seminar series is to share cutting edge research throughout the consortium and to the general public. METTRANS (USC/CSULB), UC Davis, UC Irvine, and UCLA hold regular research seminar series. The PSR seminars are incorporated into the series of the partner institutions. The southern California partners share all seminar notifications, and students now travel to neighboring campuses to attend seminars. The seminars serve as a forum for faculty, guest presenters, and advanced graduate students to present their research. They are open to the public, and are often a collaborative effort of PSR and cosponsors such as student, academic, and professional groups. Table 2 lists the seminars presented during the reporting period.

Facilitating Connections between Students and Employers

Our consortium facilitates connections between students and the transportation industry by providing a variety of professional development and employment opportunities.

Professional Development Opportunities

PSR partners with WTS Los Angeles (WTS-LA) and WTS Orange County (WTS-OC) to facilitate and sponsor membership and attendance at WTS events and with WTS-LA to promote student participation in the transportation resume book. PSR Associate Director Victoria Deguzman is the WTS-LA chapter University Liaison and a WTS-OC Mentor, and conducts outreach for both chapters to high schools and institutions of higher learning throughout the greater LA region; a graduate level transportation student at USC serves as the WTS-LA and WTS-OC chapter Student Liaison. We also continue to offer career services to students interested in a transportation related career, and facilitate connections with students and industry. UCLA ITS provides numerous professional development opportunities for students and professionals in the transportation field through lectures and conferences.

METRANS Mentor Program

In this program, transportation practitioners (mentors) guide students to make informed career decisions and to develop into well-rounded professionals. Thirty-two students were mentored during the reporting period (29 members of underrepresented groups, 17 female, 16 both female and members of underrepresented groups - Hispanic/Latina and Asian/Pacific Islander). The mentor program now includes students at UCI and UCLA.

METRANS Lunch with a Practitioner Series

Designed to facilitate career planning and provide guidance from and connections with practice. These events allow current transportation students to meet and learn from active transportation practitioners.

Employment opportunities

Internships and Employment Assistance

Internships provide professional experience and often lead to jobs. Students in the MPL, MPA, and MPP degrees at USC and in the MSSCM Accelerated program at CSULB complete internships prior to graduating. CITT has established a job and internship post on its website at <https://www.ccpe.csulb.edu/TheManifest/JobPostings.aspx> and works with the CSULB Career Development Center matching students to employment and internships. CITT also includes trade and

transportation-related job postings in its email blasts and news updates. UCLA ITS provides an online platform for UCLA students interested in transportation to share job opportunities and internships. Pima College has recruiters that come to most Truck Driver Training Program classes from Schneider, Covenant, Danny Herman Trucking, and Werner. They give presentations to the students about careers in the trucking industry.

During the reporting period, student placements included City of Anaheim, County of Orange, US Representative Alan Lowenthal’s office, Mobile Programming LLC, Port of Long Beach, Boeing, Sony, Belmont Village and Senior Living, CEVA Logistics, Jimway, and SSG.

Get the Job: A new professional development speaker series launched during the reporting period, created to meet the demand for specific job-seeking guidance which could not be met by our practitioner lunch series and mentor programs alone. It is designed to provide a small group environment in which students receive advice from active practitioners on securing employment.

The professional development events held during the reporting period are listed in the table below.

Table 3: USC Professional Development Series Event

Date	Title	Speaker(s)
2017		
10/04/2017	Get the Job: Careers for Women in Academia What Does it Take to Reach the Top?	Elizabeth Daley, Dean, School of Cinematic Arts Karen Symms Gallagher, Dean, USC Rossier School of Education
12/05/2017	Lunch with a Practitioner: From Wet Behind my Ears to Wise Beyond my Years	Susan Metros, USC Associate Vice Provost of Technology Enhanced Learning
2018		
01/17/18	Get the Job: Careers in Mobility	Shawn Chavira Associate Director of Transit Operations, USC
02/07/2018	Lunch with a Practitioner: The Case for Graduate Degrees	Kate Amisshah, LA Metro Sue Dexter, Toyota Shichun Hu, USC Viterbi School of Engineering Michael Lin, Milken Institute
03/06/2018	Get the Job: Socially Conscious Careers New Opportunities for Twenty-First Century Graduates	Suzanne Dworak- Peck, National Association of Social Workers

Educational Enrichment

PSR offers many opportunities for students to engage directly with professional organizations. PSR students provide support to transportation-related student and professional groups at several of the partner universities and in the community to assist them with strategic planning, event planning and execution, membership recruitment and retention, awards, scholarships, and operations. These groups include:

- WTS-LA and WTS-OC (USC, CSULB, UCLA); Women in Transportation in Los Angeles (UCLA); Women in Trucking (Pima)

- Student Chapters of the Institute for Transportation Engineers (ITE; USC, NAU), American Planning Association (APA; USC), National Society of Black Engineers (NSBE; USC), Society of Women Engineers (SWE; USC and CSULB), WTS (UCD, UCLA), Asian Pacific Islander Caucus (APIC; USC and CSULB)
- Eno Foundation and Transportation Research Board (UCLA)
- National Association of Publicly Funded Truck Driver Training Schools (Pima)
- Several school or university specific programs, for example:
 - USC Price Women Leading Policy, Planning, and Development (WLPPD)
 - CSULB Society for the Advancement of Management (SAM) and Graduate Business Association
 - UCLA Luskin Community Scholars Program

2. Products

We also provide opportunities for students to experience transportation outside the classroom, such as field trips, resource and guest speaker referrals, and opportunities for publication of their written work and accomplishments.

Field Trips and Site Visits

These are a regular component of our enrichment programming. During the reporting period, USC hosted field trips and site visits to The Port of Los Angeles (September 2), Foothill Transit (October 28), The Gerald Desmond Bridge (February 15), The Boring Company and SpaceX (February 23), and The Anaheim Regional Transportation Intermodal Center (March 24).

METRANS on the Move

A weekly, e-newsletter written and produced by students under the guidance of the Associate Director, Deguzman. Over 2,000 subscribers receive this weekly publication containing transportation news, and notice of transportation events and opportunities, such as conferences, seminars, webinars, scholarships, internships, and job listings. Forty-three issues were published during the reporting period. Students USC, UCLA, UC Davis, UC Irvine, and CSULB participated as authors of feature stories.

Resume workshop at ITE

NAU's ITE chapter held a resume workshop using PSR funds to assist the chapter. PSR funding supports ITE student chapter activities, including providing food at chapter meetings and assisting with travel to conferences and events.

23rd Annual California Transportation Foundation Transportation Education Symposium

Undergraduate students from UC Davis and USC attended the CTF Transportation Education Symposium at the Lake Arrowhead Resort in November 2017. The symposium brings together industry leaders and students interested in transportation career paths. The conference culminated in preparation and presentation of a Request for Proposals for a rapid transit line extension and station project. UC Davis student Joseph Kaylor acted as the Project Manager for his team, which was selected by the committee as the winning consulting group.



UC Davis undergraduate, Joseph Kaylor (far right), and his team at the 23rd Annual CTF Transportation Education Symposium, including Joseph's conference mentor, former Caltrans Director Will Kempton (seated).

Non-Degree Programs

PSR has an extensive non-degree and workforce development program. In order to manage and coordinate efforts across the partners, PSR established a **Workforce Development Committee**. The committee is chaired by Thomas O'Brien (CSULB), and members include Victoria Deguzman (USC), Karl Kim (UH), Tyler Reeb (CSULB), and Ian Roark (Pima). During the reporting period, members of the team met in Tucson to review workforce development strategies to increase reach across the region and to begin the development of pilot programs involving tribal partners. The WDC also coordinated on the development of the workforce-related component of the first PSR Congress.

Training Courses

PSR is offering or developing a broad array of training courses and programs aimed at various skill and experience levels.

Courses for Professionals

Metropolitan Transportation Management Certificate (MTMC): Curriculum development was coordinated with LA Metro and designed to cover multi-modal transportation planning fundamentals, with a focus on passenger-freight conflicts. The class was conducted in four sessions which started on Feb. 10 and concluded on March 3. The success of this pilot program has motivated the METRANS team

to further develop its curriculum and share it as an educational tool for planning and transportation professionals around the country.

Caltrans Freight Academy: CSULB offers a four-day freight academy designed for planners and engineers as part of a regular series of Caltrans-specific classes. During the reporting period, one workshop on intermodal transport was held in Ontario CA; and a second workshop on agricultural supply chains was scheduled for April 2018 in Sacramento.

Incorporating transportation resilience into FEMA certified training: The UH National Disaster Preparedness Training Center (NDPTC) will incorporate PSR transportation resilience research into both face-to-face and online training courses for transportation professionals and other responders. UH also plans to incorporate applicable research outcomes into FEMA certified training. UH NDPTC is currently working to complete the certification of the FEMA training course on Evacuation Planning. The course, once FEMA certified, could provide emergency management and first responders the knowledge to better plan for evacuations. The course could also be delivered to transportation agencies as part of their professional development program. UH NDPTC is working to identify other transportation-related training that could be certified by FEMA, but also serve as a way to prepare transportation agency staff for emergencies and make systems more resilient to future disasters.

Community College Courses

Transition of AAS in Logistics and Supply Chain Management to online: Pima will transition its Associate of Applied Science (AAS) degree in Logistics and Supply Chain Management (with a focus on Arizona and California cross-border trade logistics) into a 100% online format to extend the program's reach and enrollment. CSULB will support Pima in this effort through its Virtual Logistics Peer Exchange and by providing access to CITT's 30-hour online training program "Introduction to Logistics and Supply Chain Management." Pima began the process of developing all of its Logistics and Supply Chain Management classes to an online format in spring 2017. The goal is to develop online versions of the courses required for the Basic Certificate before the end of calendar year 2018.

Best practices in online commercial driver's license (CDL) training: Pima is using PSR funding to transition sections of its in-class CDL program into an online format, the development of which is scheduled to begin in early 2019. Pima's Truck Driver Training Program manager completed the online "Teach and Build" training. A staff instructional employee is scheduled for the course in summer 2018. These trainings will prepare them as subject matter experts to provide instructional designers the content and support they require to develop online courses.

Workshops

Training Workshop on Evacuation Planning Strategies and Solutions (UH): UH partnered with National Hurricane Conference and provided a one-day training workshop to the 2018 National Hurricane Conference participants. The conference was held in March 2018 in Orlando, FL.

Pima College hosted a meeting of the **National Association of Publicly Funded Truck Driver Schools** November 2-3, 2017 with 19 attendees from TX, NM, CA and AZ. Attendees discussed current trends in truck driver training and emerging technologies relevant to the surface transportation industries who hire their graduates. The gathering in Tucson was an opportunity for Pima College to highlight the creative ways in which truck driver training is delivered to the College's students.

Workforce Development

PSR is developing a comprehensive workforce development program through the efforts of CSULB and Pima College.

K-12 outreach

K-12 outreach is taking place at USC, CSULB, NAU, and Pima College

METRANS STEM program participation: Associate Director Victoria Deguzman leads the K-12 outreach efforts for METRANS at USC. During the reporting period, METRANS provided event support and sponsorship for two Society of Women Engineers (SWE)-led, day-long STEM programs for elementary school girls on the USC main campus, and a day-long transportation engineering program for high school girls lead by WTS-OC and held at a local public school. We are currently planning three events for the summer and fall.

CSULB support of Cabrillo High School Academy of Global Logistics: CSULB continues to support the Port of Long Beach Academy of Global Logistics at Cabrillo HS through its annual Teacher Externship and by coordinating engagement with the industry. The AGL is a four-year small learning community which combines an academic curriculum with industry-relevant training and information to support academic and career development. The Academy introduces high school students to career opportunities in global trade and logistics and shows them how to prepare for those careers. During the reporting period, CSULB worked on curriculum development for the summer 2018 Academy. AGL sent representatives to I-NUF in October 2017 where a student speaker was featured.

AZTrans Exhibit at the 2017 NAU Science and Engineering Day: On September 16th, 2017, AZTrans operated an exhibit at the NAU Science and Engineering Day, which was part of the Flagstaff Festival of Science. The exhibit, staffed by NAU faculty and students, had equipment set up to show how traffic signal systems detect vehicles and efficiently move traffic through intersections, as well as a computer showing how traffic simulation software is used to analyze signal timing before it's implemented in the field. Two traffic-related games were set up for children ages K-8 to play; one where they could create their own traffic signal timing plans and one that illustrated the dangers of distracted driving. Over 100 students (including a significant number of students from schools located on tribal land) and members of the public interacted with the exhibit. A similar exhibit was set up at the ***2018 Flagstaff Community STEM Celebration***, Over 50 students and members of the public interacted with the exhibit.

Pima truck driver training for Boy Scouts: Pima's Truck Driver Training Program hosts twenty Boy Scouts each March and October for half-day sessions to teach them about the role of surface transportation in the importing and exporting of goods in support of the Truck Transportation Merit Badge. The seminar helps the Scouts achieve that Badge. The Scouts must research the logistics and supply chain management industry prior to coming to class, where they learn what a truck driver must do to prepare and deliver goods. The program includes a short ride in a semi-tractor/trailer. The Scouts learn the difference between a gas and diesel engine, how trucks fit into a company's supply chain, the role of truck transportation in commerce, safety, driver's logs and federal regulations. The goal of the seminar is to introduce the Scouts to trucking transportation as a career option. The Scouts particularly enjoyed the hands-on components of the badge seminar. The badge is rarely earned by Scouts, so the College was honored to be a part of this community transportation initiative.

Dissemination

Dissemination of education activities takes place through the degree and non-degree programs offered by the partner universities, the various student programs and events, METRANS on the Move, and social media. As noted above, PSR has engaged with under-represented youth, including at the tribal nations in Arizona.

Plans for Next Reporting Period

Plans for the next reporting period include continuing all existing programs, and starting the following new activities:

- Award 2018-19 graduate fellowships at UCD, UCLA, NAU, and UCI
- Award 1-2 dissertation fellowships at UCD
- Continue PSR seminar series, seminar series at USC, UCD, UCLA, UCI
- Continue student engagement and enrichment programs
- Begin development of online CDL training courses at Pima College
- Begin development of online transportation soft skills curricular materials at CSULB
- Develop outline for and schedule a Virtual Peer Exchange focused on State DOT and regional planning organizations undertaking freight planning exercises, including FAST Act compliant plans (CSULB and Pima)
- Develop a PSR workforce development program focused in GIS Tribal Training.
- Complete the 'wrapping' of two commercial tractor/trailer rigs at Pima College to advertise the Truck Drive Training Program.
- Pima College's seminar in 2018 will be a noncredit OSHA 10 course offered to students in the logistics and truck driver programs at the College, and participants from the Pascua Yaqui Native American Tribe. This seminar will provide successful graduates with an OSHA 10 credential, recognized by industry employers throughout the U.S.

a. Technology Transfer Accomplishments

The goal of our technology transfer program is to enhance the transition of research to practice. We accomplish this goal through conferences and events, publications, and social media. We listed the following plans in the previous PPPR: 1) hold the I-NUF conference, and continue planning for PSR Annual Congress and NaTMEC; 2) make decision on Access magazine; 3) complete website reconstruction and launch permanent website; 4) produce branding materials. All but the third item have been accomplished.

New Events

Region 9 Annual Congress: We held the first Region 9 Annual Congress on March 29, 2018 at CSULB, this year hosted by USC, CSULB, UCI, and UCLA. It gathered the PSR Advisory Council and Executive Committee, as well as transportation stakeholders, students, faculty and staff from throughout the region together to share new research results, best practices, and education and training tools produced by the PSR. This annual event serves as a major networking event to build a Region 9 transportation community. It also serves as the annual in-person meeting of the PSR Advisory Council. The first half of the day was devoted to an introduction of PSR and the partner universities' programs. The second half of the day included the PSR Advisory Council meeting and a student meeting. Students from every

partner university attended the conference, and several presented posters of their research during the lunch break. The conference planning committee included faculty and staff of the host universities.

NaTMEC Biennial Conference (USC): PSR was asked to host the biennial North American Travel Monitoring Exposition and Conference, to be held from June 10 – 13, 2018. Steve Ritchie (UCI) is planning committee co-chair and Victoria Deguzman, METRANS Associate Director, is leading the logistics planning for the conference. The conference will take place at Hotel Irvine, in Irvine, CA. Logistics and program were finalized during this reporting period.

Summer Meeting of TRB Committee AHB25, Traffic Signal Systems (NAU): NAU will be hosting the summer meeting of Traffic Signal Systems Committee of TRB. This event will take place at the High Country Conference Center July 22nd – 24th in Flagstaff, AZ. Edward Smaglik, NAU, is handling all of the logistics for this event.

Irvine Symposium on Emerging Research in Transportation (ISERT; UCI): (January 12–13, 2018) UCI hosted the first in a series of annual symposia intended to promote exchange of emerging research ideas among top US and Pacific Rim researchers returning from TRB. For this first ISERT, presentations were by invitation and almost entirely by UCI alumni, researchers, and other distinguished colleagues who have had a close association with ITS-Irvine. Future ISERTs will broaden the list attendees.

Continuation of Signature Events

International Urban Freight Conference (I-NUF; USC and CSULB): Attendees from 18 countries gathered in Long Beach to participate in the seventh METRANS International Urban Freight Conference (I-NUF). The event, which took place from October 18-20, 2017, hosted scholars and industry specialists who presented highly relevant research about the rise of e-commerce, transformational technology, and other developments that influence urban freight movement. Over 200 presentations were made. Presentations from INUF 2017 were featured in a November 2017 FHWA “Talking Freight” webinar. Presenters included Paul Bingham, EDR Group; Joanna Amaya Leal, Iowa State University, and Anne Goodchild, University of Washington.

LA Forum on Transportation, Land Use, and the Environment (UCLA): The Downtown Los Angeles Forum will take place on May 18, 2018. The event will focus on Transit Oriented Development (TOD) and the effects of affordable housing on TOD. The event will be attended by over 100 guests including academics and practitioners from the public and private sectors.

Lake Arrowhead Symposium (UCLA): UCLA hosted the Lake Arrowhead Symposium on the Transportation - Land Use - Environment Connection in October 2017. The theme was “Global Climate Change, Local Growing Pains.” The event was attended by 160 guests including academics, practitioners, and elected officials. UCLA will host its first steering committee meeting in April 2018 to plan the October 2018 event.

CITT State of the Trade and Transportation Industry Town Hall Meeting (CSULB/USC): The 2018 Town Hall meeting was held on March 29, 2018, with approximately 150 attendees. The topic was, “Clean Air Action Plan 3.0: Balancing Benefits and Costs.” The evening included the presentation of a 15-minute video on clean air policy and the ports developed by CSULB’s Advanced Media Production team. This

was followed with a roundtable discussion by a panel of industry leaders representing public agencies and private firms.

National Summit on Transportation and Environmental Sustainability (UCD): UC Davis organizes the biennial Asilomar Conference, the leading international conference on transportation, energy, and environmental sustainability. It took place August 22-25, 2017. Consortium faculty from UCD, USC, and CSULB organized sessions and participated in the conference.

Pacific Risk Management Ohana (PRiMO) Conference: University of Hawaii is one of the partners that annually organize the PRiMO Conference. The theme for 2018, is Technology and Disaster Risk Reduction and it will take place August 6-9, 2018. UH NDPTC is one of the sponsors; it has organized sessions and will participate in the conference.

Workshop on Intelligent Transportation Systems and Disadvantaged Populations: Technology Adoption Challenges and Bridging the Digital Divide (UH): (November 4-7, 2018) Maui, Hawaii, USA. UH is facilitating a workshop at *the 21st IEEE International Conference on Intelligent Transportation Systems*. The workshop is sponsored by the IEEE Intelligent Transportation Systems Society.

Other activities

Working and Living in a Port City Series (CSULB): Introducing local decision makers and community residents to the port, its position in the global supply chain, and careers available in international trade and transportation, this three-part series is offered twice a year and is taught by industry professionals and a career advisor. It is supported by industry sponsorships and offered free of charge. CITT plans to hold a seminar series in fall 2018.

Transportation is a Women's Issue Series (UCLA): UCLA ITS engaged faculty, students, and public audiences in two events related to specific issues women face in using various forms of transportation. *November 30, 2017 - Public Transportation and #MeToo* focused on women's transportation needs and how transportation agencies are not meeting those needs. *March 7, 2018 - A Gendered Planning Mismatch* focused on the gap in mobility patterns between women and men in the household as well as the transportation policies that affect them.

Media and Communications

Publications

PSR News: The PSR e-newsletter has been launched as a part of *METRANS News*. The first issue with PSR news was published in May 2017. As the activities of the center ramp up, the e-newsletter will be established as a publication linked to *METRANS News*. *METRANS News* has a national circulation of about 3,000, most via email link. Bi-weekly news blasts are issued throughout the year to provide current information on METRANS and PSR activities.

Transfers Magazine: The PSR Executive Committee decided to replace *ACCESS Magazine* with a new, high quality biannual digital magazine in the style of *ACCESS*, but with a more modern appearance: *TRANSFERS Magazine*. The goal of the magazine is to translate the research of faculty, staff, and students at the PSR campuses into highly accessible content for an audience of elected officials,

transportation planners, members of the media, and the general public. UCLA ITS staff have taken the lead in this endeavor. UCLA ITS hired a communications manager to serve as the magazine's managing editor, with editorial support from two student assistants, ITS associate director and editor-in-chief Madeline Brozen, and Professors Donald Shoup and Martin Wachs, who will advise the publication and solicit article contributions from PSR scholars. The first issue will appear in May 2018. Five articles representing three campuses have been



submitted and edited for the first issue. In addition to the twice-yearly issues, the Transfers website (<https://transfersmagazine.org>) will feature a supplemental, regularly updated blog with news, research, and events from around the PSR network. Additionally, the directors of the affiliated PSR research centers have formed an editorial board to provide guidance to the editorial team and meet annually to assess the magazine. *TRANSFERS* will be the flagship publication of PSR.

Research Briefs: A “Research Brief” that provides a short summary of research results suitable for a non-technical audience is required for all research projects. These briefs are widely circulated through both traditional and social media. No research briefs have been published during the reporting period.

Website

PSR website: The PSR website is complete and currently housed at <https://www.metrotrans.org/psr-utc>. The PSR website is managed as part of the METRANS website. Incorporating PSR, along with several other changes within METRANS, required a restructuring of the entire website. We decided to take this opportunity to update the entire website to take advantage of new dynamic and interactive capabilities. The restructuring of the website is currently in progress. The RFQ for the new website was issued in Winter 2018, and the developer has been selected. We anticipate that the new website will be deployed by fall 2018.

Partner websites: PSR partners include PSR activities on their own websites. Information regarding UCLA ITS’s participation in PSR has been shared on the websites for UCLA ITS, UCLA Luskin School of Public Affairs, and the UCLA main page. ITS-Davis will be adding a “Partner Centers” section to its Research Centers webpage to highlight ITS-Davis’s affiliation with PSR and other centers not led by UC Davis. Planning continued for UCI’s PSR-UTC website in conjunction with a broader redesign of the ITS-Irvine website. Pima has listed the UTC grant on the College’s website: <https://www.pima.edu/administrative-services/grants/grants-list.html>. NAU has put together a website to display the work they do at the center: <https://nau.edu/aztrans>

Media

PSR activities and events have been incorporated into the METRANS social media outlets (Facebook (<https://www.facebook.com/metrotranscenter/>) and Twitter (https://twitter.com/metrotrans_center?lang=en)), and into the weekly student e-news. This reporting period we had 623 Twitter followers and 42 tweets. We had 651 Facebook “Likes” and 69,812 Facebook visits, as measured by “impressions” (the number of times people have encountered a post or the page itself). Our LinkedIn page has grown to 1,375 members.

METRANS and UCLA seminars are available on YouTube. In addition we have several series that are available online:

- **ContainerCasts** are webcasts focused on topics of interest to the international trade community. No ContainerCasts were produced and posted during the reporting period; past ContainerCasts can be accessed at <https://www.ccpe.csulb.edu/TheManifest/ContainerCast.aspx?PID=13>.
- **TransCasts** are podcasts featuring interviews with METRANS researchers and other distinguished transportation experts. METRANS 20th anniversary TransCasts will be posted during the summer of 2018. Past episodes are at <https://www.metrans.org/transcasts>.
- **Trade and Transportation Perspective and Trade Talks:** METRANS Associate Director O'Brien hosts a quarterly television series called Trade Talks produced by CSULB's Advanced Media Production services and distributed through a regional cable network. The episodes are also available via YouTube. Two episodes were produced during this reporting period: the October 2017 episode featured Michael Browne, Professor of Logistics and Urban Goods Transport at the University of Gothenberg in Sweden; and the March 2018 episode featured Genevieve Guiliano, Director of METRANS Transportation Center. These and all past episodes can be viewed here: <https://www.youtube.com/watch?v=D0ouTGwCt0o>

Dissemination

Dissemination is achieved through the events, media, and communication channels described above.

Plans for Next Reporting Period

Plans for the coming report period include:

- Continue planning and hold NaTMEC in June 2018
- Begin preparations for INUF 2019
- Host the Downtown Los Angeles Forum, and host the Steering Committee to plan the 2018 UCLA Lake Arrowhead Symposium
- Launch *TRANSFERS Magazine*
- Complete website reconstruction
- UCI will deploy its PSR-UTC website

3. Products

a. Publications

During the reporting period, PSR research resulted in one paper and two presentations

b. Websites

The PSR website is at <https://www.metrans.org/psr-utc>. It is described in the "Media" section.

c. Technologies

Nothing to report during this period

d. Inventions

Nothing to report during this period

e. Other Products

Webcasts and podcasts of seminars and events; professional training courses and programs

4. Participants and Collaborating Organizations

What organizations have been involved as partners?

Table 4 lists the PSR partners, provides a brief description, and describes the main contributions of each partner.

Table 4: PSR Partners

Institution (Diversity)	Description	Contribution to the Consortium
USC (AANAPISI)	USC is the largest private research university in the US, with over 43,000 students. Ranked 23rd among national universities by U.S. News & World Report; public policy school is ranked 2nd, and engineering is ranked 12th nationally; \$4.7 billion endowment	Leading faculty; top ranked graduate programs in transportation, including public policy, systems engineering; proven track record of consortium leadership
CSULB (HSI, AANAPISI)	Public regional university, ranked 5th among western regional universities according to U.S. News & World Report; 37,000 students	Undergrad and masters level programs, workforce development, tech transfer
UCD	Public research university; ranks 11th among US public universities by U.S. News and World Report; ranked 1st ecology/environmental research; ranks 12th in graduate civil engineering; 35,500 students	Leading faculty, interdisciplinary MS and PhD, policy outreach; energy and environment; lead institution of the current National Center on Sustainable Transportation
UCI (AANAPISI)	Public research university; ranks 9th among US public universities by U.S. News and World Report; ranked 1st in the U.S. and 7th in the world among universities less than 50 years old (Times Higher Ed, 2015); 31,551 students	Leading faculty, strong graduate programs, ITS research facilities, interdisciplinary PhD, strong connected and automated vehicles research program
UCLA	One of the world’s leading universities, public or private; ranked 13th globally for scholarly reputation by Times Higher Education 2015, ranked #2 public university in the US by U.S. News and World Report. Ranked 6th among US public universities in Nobel Prize winners.	Leading faculty; large, highly ranked graduate transportation programs (MPP, MURP, & PhD) in Public Affairs, as well as in engineering
University of Hawai’i at Manoa (AANAPISI, NHSI)	University of Hawai’i at Mānoa is the flagship campus of the University of Hawai’i System. Consistently ranked a “best value” among U.S. colleges and universities. Classified by the Carnegie Foundation as a “very high research activity” university.	Leading transportation and infrastructure resilience faculty; planning program with specialization in transportation and infrastructure planning, includes courses in disaster management planning
NAU (HSI, AIANSI)	Public University; ranked in the top 25% of programs with a Masters as the ultimate degree by U.S. News & World Report.	Leading faculty; undergrad and master's transportation program; transportation and environmental workforce development and outreach
Pima (HSI, AIANSI)	Public community college, 47,500 students on 6 campuses; one of the largest multi-campus community colleges in the US	College transition; technical training; workforce development

Participants

Participants contribute to the work of the Center 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.

The following organizations provide match funding to PSR:

- California: California Department of Transportation; Los Angeles County Metropolitan Planning Authority; South Coast Air Quality Management District, Port of Long Beach, Southern California Association of Governments, Los Angeles World Airports
- Arizona: City of Phoenix, Arizona Department of Transportation, Arizona Board of Regents

The following organizations provide scholarships, indirect or in-kind support to PSR:

- California: MetroLink, Foothill Transit, Ceres/Yusen Terminals, Port of Los Angeles, Majestic Realty, Volvo Research and Education Foundation, Los Angeles Transportation Club (LATC), Harbor Transportation Club (HTC), Harbor Association for Industry and Commerce (HAIC), Council of Supply Chain Management Professionals (CSMCP), Long Beach Transit, City of Anaheim, Orange County Transportation Authority (OCTA), California Energy Commission (CEC), Governor's Office of Business and Economic Development (GO-Biz)
- Arizona: Flagstaff Metropolitan Planning Organization, Pima Association of Governments, Southern Arizona Anti-Trafficking United Response Network (SAATURN)
- Hawaii: University of Hawaii

Have other collaborators or contacts been involved?

Collaborating Organizations

The PSR partners have extensive relationships with other universities, public agencies, and private industry. Almost all PSR consortium members are currently part of a UTC or other major research consortium; all have experience in collaborative partnerships, and all participate in ongoing joint activities.

Advisory Organizations

PSR Advisory Council: The Advisory Council provides guidance on: 1) the most pressing problems facing the member agencies that can be addressed by university research; 2) themes to be addressed at the PSR annual congress; and 3) workforce and training requirements of the member agencies and their client or constituent government entities. The Advisory Council also plays a role in dissemination of research results and in hosting tech transfer events. We selected members to represent state departments of transportation, MPOs, tribal governments, and private and non-profit sectors. Table 5 below lists the current members of the PSR Advisory Council. A few slots remain to be filled. The first in-person meeting of the Advisory Council took place at the Annual Congress in March 2018. In addition to the PSR Advisory Council, each partner has its own advisory group (not listed in this report).

Table 5: Members of the PSR Advisory Council

Name	Affiliation	Representation
Allison Yoh	Director of Transportation Planning, Port of Long Beach	Transportation Stakeholder organization
Alvin Au	Executive Director, Oahu MPO	Metropolitan Planning Organization (MPO)- area over one million
Amanda Eakin	Director of Transportation and Climate, NRDC	Transportation stakeholder organization
Brian Hoeft	Executive Director, Regional Transportation Commission of Southern Nevada	Executive Director- MPO- area over one million
Coco Briseno	Chief Deputy Director, Caltrans	State Department of Transportation (DOT)
Dave Stumpo	Executive Director, Southern California Regional Transit Consortium (SCR TTC)	Transportation Stakeholder organization
Dave Wessel	Executive Director, Flagstaff MPO	MPO- area less than one million
Farhad Moghimi	Executive Director, Pima Association of Governments	MPO- area over one million
Hasan Ikhata	Executive Director, Southern California Association of Governments	Metropolitan Planning Organization (MPO)- area over one million
Jade Butay	Director, Hawaii Department of Transportation	State DOT
John Halikowsky	Director, Arizona Department of Transportation	State DOT
Jon Nouchi	Deputy Director, Honolulu Department of Transportation Services	Local transportation agency
Lauren Armstrong	Executive Director, Maui County Metropolitan Organization	MPO- area over one million
Stephanie Ramirez	Associate State Director, American Association of Retired Persons (AARP)	Transportation Stakeholder organization

Relationships with Other Universities

Council of University Transportation Centers: The center director (Giuliano) is a past president and executive committee member. Currently, Dr. O’Brien (CSULB) is serving on the executive committee and as Secretary. Dr. O’Brien serves as PSR lead for the CUTC workforce development efforts.

MetroFreight Center of Excellence: METRANS is the home of the Volvo Foundation for Education and Research (VREF) Center of Excellence on urban freight. MetroFreight seeks to improve the sustainability of goods movement in metropolitan areas around the world. It is an international consortium that includes the University Transportation Research Center (Region 2 UTC), Institute of Science and Technology for Transport (IFSTTAR), and the Korean Transport Institute (KOTI). MetroFreight has greatly expanded our international linkages, and offers many opportunities for collaboration and partnerships.

National Center for Sustainable Transportation: The National Center for Sustainable Transportation (NCST) UTC was established in 2013 and renewed 2016. Led by University of California, Davis, consortium partners include METRANS (USC and CSULB), University of California, Riverside, Georgia Tech, and University of Vermont. METRANS’ role is sustainable freight transport, which links well with

MetroFreight. The NCST Director, Susan Handy, also serves as the UC Davis PSR Associate Director, and the NCST Program Manager also serves as the UC Davis PSR Program Manager. This overlap helps to facilitate coordination and collaboration among the UTCs.

Southwest Transportation Workforce Center: The Southwest Transportation Workforce Center (SWTWC) seeks to connect and empower the 21st century transportation workforce through research, education, and industry engagement. SWTWC is led by CSULB, with USC, Texas A&M Transportation Institute (TTI), ICF International, and the National Occupational Competency Testing Institute as partners. The mission of SWTWC is to provide a more strategic and efficient approach to transportation workforce development. The partnership of CSULB and Pima began within the SWTWC, and led to Pima joining the PSR consortium. The SWTWC leads an FHWA-funded National Transportation Career Pathways initiative with partners from the other regional workforce centers at the University of Vermont, University of Memphis, University of Wisconsin, and Montana State University.

Arizona Technology Park: Pima partners with the University of Arizona Technology Park in a Smart Vehicle Innovation Team (SVIT), which seeks to bring economic developers and academic researchers together to attract autonomous vehicle manufactures to southern Arizona. Dr. Ian Roark, and our Dean of Applied Technologies, Mr. Gregory Wilson, serve on the committee.

Arizona High Tech Freight Corridor: NAU is part of a partnership between the three Arizona universities, investigating the use of I-10 as a high tech freight corridor. The partnership includes a portfolio of seven projects, including safety, efficiency, alternative fuels, and education and outreach, among others. Each project is being conducted by at least two of the three schools, and some involve all three. Outcomes of the partnership include publications, proposals, and dissemination of results through various educational channels (webinars, case studies, and academic modules). This portfolio of projects is funded by the Arizona Board of Regents

Institute of Transportation Studies (ITS): ITS is the University of California transportation research institute. It has branches at UC Berkeley, UC Davis, UC Irvine, and UCLA. ITS is funded by the state of California, as well as by Caltrans research contracts. There are several statewide research collaborations taking place through ITS.

UH partnership for transportation resilience: Through its involvement with the Transportation Research Board's Standing Committee on Emergency Evacuation, UH has partnered with Louisiana State University, Florida Atlantic University, and the Gulf Coast Center for Evacuation and Transportation Resiliency (MarTREC UTC, University of Arkansas) to examine opportunities to increase and improve transportation resilience.

5. Impact

What is the impact on the development of the principal discipline(s) of the program?

Scholarships and fellowships have attracted new students to transportation.

What is the impact on other disciplines?

Nothing to report during this period

What is the impact on the development of transportation workforce development?

Training courses and certificate programs have increased the expertise of transportation professionals

What is the impact on physical, institutional, and information resources at the university or other partner institutions?

Increased space and computing requirements

What is the impact on technology transfer?

Our faculty are editors and on boards of several scholarly journals, and are members of state or local committees and task forces, providing advice on transport policy and practice.

What is the impact on society beyond science and technology

Nothing to report during this period.

6. Changes/Problems

No changes in the grant have taken place. We expect a later than anticipated start for Caltrans match fund projects. No problems to report.

7. Special Reporting Requirement

There are no special reporting requirements and nothing to report during this period.