



# PacTrans

## PacTrans 2018 Special TRB Meeting Newsletter

University Transportation Center Newsletter

SPECIAL ISSUE  
FEBRUARY 2018

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## 2018 Transportation Research Board (TRB) Annual Meeting

The Transportation Research Board (TRB) 97th Annual Meeting was held this past January 7–11, 2018, at the Walter E. Washington Convention Center, in Washington, D.C. The event attracted more than 12,000 transportation professionals from around the world. Those professionals hosted more than 5,000 presentations in nearly 800 sessions and workshops. This year’s meeting had a spotlight theme of *Transportation: Moving the Economy of the Future*.

With policy makers, administrators, practitioners, researchers, and representatives of government, industry, and academic institutions in attendance, the TRB annual meeting continues to be an excellent forum for PacTrans to demonstrate our abilities, expertise, innovation, and research, as one of the country’s leading regional University Transportation Centers (UTCs).

PacTrans student and faculty researchers were in active attendance from all seven of our consortium institutions (Oregon State University, University of Alaska, Fairbanks, University of Idaho, University of Washington, Washington State University, Boise State University, and Gonzaga University). In total, PacTrans Universities participated in over 120 lecterns, poster sessions, workshops, committees, and subcommittees, and submitted over 100 papers to the meeting.

This special edition newsletter will highlight the PacTrans researchers and research that was presented during the five-day convention.

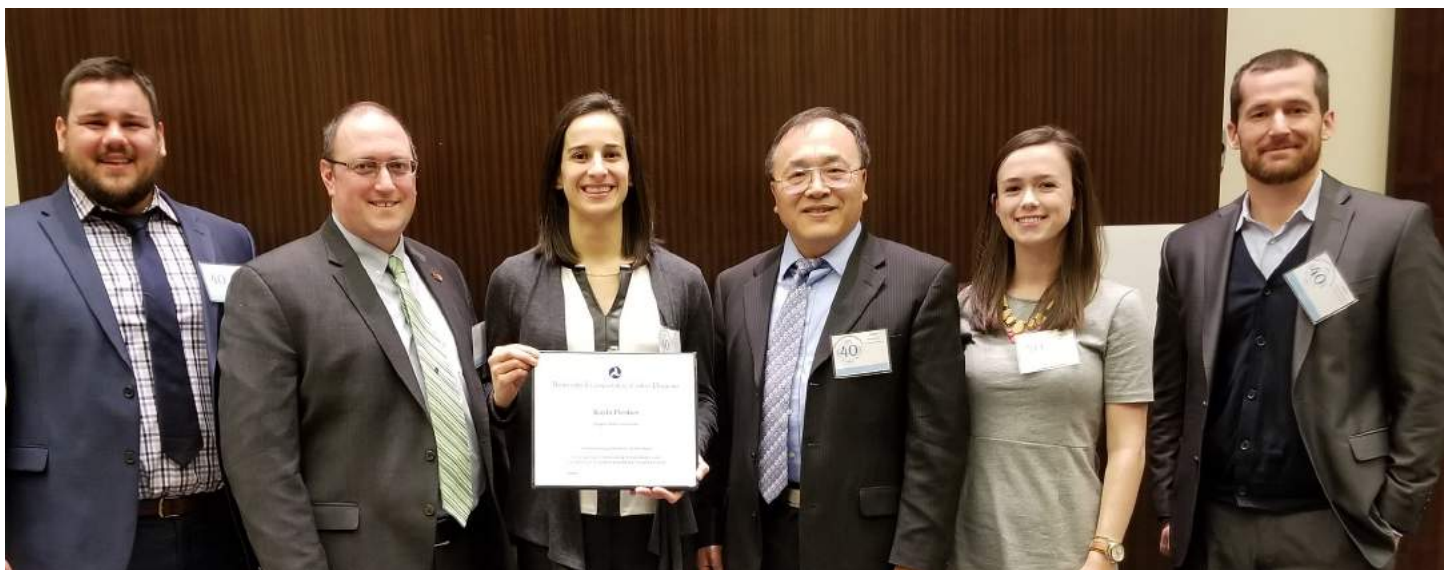


# CUTC AWARD BANQUET

*Each year, on the Saturday before the Transportation Research Board's (TRB) Annual Meeting, the Council of University Transportation Centers (CUTC) hosts an annual awards banquet to honor students and faculty across the transportation field. This year, the 2018 Annual Awards Banquet was held on January 6, at the Marriott Marquis Hotel in Washington, D.C.*

More than 50 awards were presented, including student of the year awards, new faculty awards and lifetime achievement awards. Among those awards two PacTrans students received Outstanding Student of the Year Awards: Oregon State University graduate student Kayla Fleskes, and University of Idaho graduate student Regan Hansen.

CUTC, established in 1979, works to advance the state-of-the-art in all modes and disciplines of transportation. Its membership consists of 93 of the nation's leading university-based transportation centers.



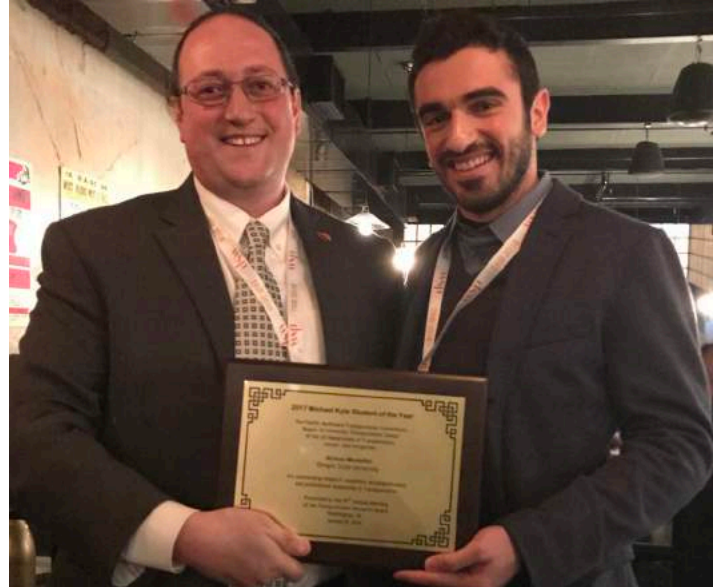
# PACTRANS RECEPTION

## 2018 Annual Region 10 PacTrans Reception

It is customary during the annual TRB meeting for each University Transportation Centers to host a gathering. Each UTC's gathering looks a little different. For some, the primary function of the gathering is for students, staff, and faculty of the hosting UTC to enjoy an evening of social fraternization amongst themselves. PacTrans takes the opportunity to invite, not only Consortium students, staff, and faculty, but also other researchers and professionals in the industry. It is a wonderful occasion for everyone to celebrate achievements, share ideas, and discuss future partnerships.

This year, on the evening of January the 8th, PacTrans hosted over 200 faculty, staff, students, and professionals from consortium universities and the industry at large. PacTrans presented the Michael Kyte Region 10 Outstanding Student of the Year Award. PacTrans Director, Yin Hai Wang, along with Associate Director David Hurwitz presented this year's award to Oregon State University graduate student Alireza Mostafizi.

This annual festivity is also an excellent opportunity for all PacTrans students, both new and old, to gather in one place and celebrate the excellent impact that they have had on the industry and the impact that PacTrans has had on each of their lives. This year, PacTrans



provided financial support to over fifty current students from the Pacific Northwest. PacTrans offers travel support to any student who gets a paper accepted to the conference, as well as any first year PhD students as we feel that this experience is a unique opportunity to expose them to a broad sample of contemporary research.



# PACTRANS RESEARCH AT TRB

## Region X Transportation Consortium (RXTC) Breakfast

As discussed in last year's TRB Annual Meeting Newsletter, with the beginning of the new five year FAST Act grant, PacTrans' has begun facilitating regular meetings between the directors of all levels of UTCs that are currently in operation in Region 10 as well as the research directors from each of the four states' DOTs. We call this the Region X Transportation Consortium (RXTC). One of these regular meetings was hosted during the TRB Annual Meeting.

Members present included PacTrans Director Yin Hai Wang, NITC Director Jennifer Dill, NITC Associate Director Hau Hagedorn, PacTrans Associate Director and

C2SMART Associate Director Jeff Ban, CSET Associate Director Nathan Belz, IDOT Research Manager Ned Parrish, ODOT Research Director Michael Bufalino, PacTrans Associate Director David Hurwitz, and PacTrans Associate Director Ahmed Abdel Rahim.

The majority of this year's discussion revolved around opportunities for regional collaboration. Two recurring themes over the last year's discussions include better collaborative opportunities for students/student awards, and the need for a regional approach to workforce development, and a holistic platform to deliver such a program.

*The next RXTC meeting is currently scheduled for the week of the Region 10 Transportation Conference, currently scheduled for October 2018 on the University of Alaska Fairbanks campus.*



# PACTRANS STUDENT EXPERIENCES AT TRB

*PacTrans considers public presentation of research to be a top priority for our graduate students. The TRB Annual Meeting remains one of the most influential opportunities to do this each year. This year, PacTrans funded over fifty students to travel to Washington D.C. for the meeting and present their works. Below are several examples including photos and student write-ups of their experiences.*

## Eric Barber

This year's TRB conference was an extremely different experience for me compared to my first one last year. This year I presented two posters on bike share and its interaction with transit. Both posters were received very positively. During this presenting process, it allowed me to more easily meet and interact with new people, because people were approaching me and asking me about my ideas. I was also able to experience some other very interesting research on a variety of subject areas, including bikeshare, shared mobility bundles, and automation. One of the most interesting to me was a study that was looking at the possibility for a cross-border bike share system in El Paso Texas. This seemed like a very interesting approach to reducing border congestion and also getting people moving. Overall, my general comprehension of research this year was much higher than last year mostly due to a better understanding of complex modeling and the research process, which has come from taking classes at UW.



I look forward to returning to TRB as both a presenter and attendee, so that I continue meeting more people with interesting thoughts and ideas.

## Polina Butrina

This year I had a fantastic opportunity to present two of my research projects during TRB 2018. One of them is about evaluating e-commerce delivery alternatives using the Puget Sound Regional Council household travel survey. The other one was about *Cost Trade-Offs between Electric-Assist Cargo Bikes and Delivery Trucks in Dense Urban Areas*. I have met a lot of interesting researchers and professionals during our poster session, and after my presentation who were very interested in the projects, our lab is doing. Also, I learned so much about transportation research from various disciplines during various sessions and committee meetings. I appreciate the exposure to new research topics and new data analysis tools that can be used to expand my research areas.



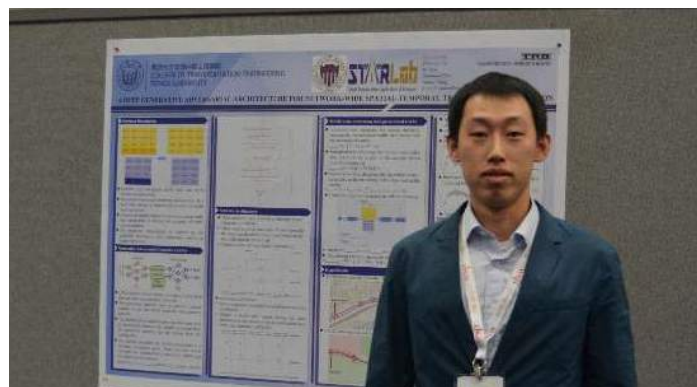
I am genuinely grateful having attended the TRB conference. I would like to thank the PacTrans for providing me travel award.

# PACTRANS STUDENT EXPERIENCES AT TRB

## Zhiyong Cui

This year, I presented a poster at the TRB conference about transportation data imputation. The title of the poster is “A Deep Generative Adversarial Architecture for Networkwide Spatial-Temporal Traffic State Estimation”.

This study proposes a deep generative adversarial architecture (GAA) for network-wide spatial-temporal traffic state estimation. The GAA can combine traffic flow theory with neural networks and thus improve the accuracy of traffic state estimation. It consists of two Long Short-Term Memory Neural Networks (LSTM NNs), which capture correlation in time and space among traffic flow and traffic density. One of the LSTM NNs, called discriminative network, aims to maximize the probability of assigning the correct label to both true traffic state matrix (i.e., traffic flow and traffic density within given spatial-temporal area) and traffic state matrix generated from the other neural network. The other LSTM NN, called generative network, aims to generate traffic state matrix which maximize the probability that the discriminative network assigns a true label to it. The two LSTM NNs are trained simultaneously such that the trained generative network can generate traffic matrixes similar to that in the training data set. Given a traffic state matrix



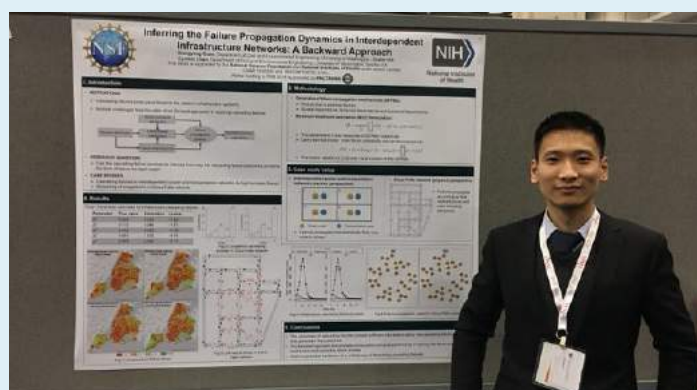
with missing values, we use back-propagation on three defined loss functions to map the corrupted matrix to a latent space. The experimental results of the proposed method are pretty good comparing with state-of-the-art methods.

During the conference, I communicated with multiple scholars and students, shown in the bottom by two figures, about deep learning related works, like recurrent neural network and generative adversarial network related transportation data analysis. I think the trip to TRB is quite beneficial to me.

## Xiangyang Guan

The most exciting thing I experienced at TRB 2018 is my poster presentation of “Inferring the Failure Propagation Dynamics in Interdependent Infrastructure Networks: A Backward Approach” on Wednesday afternoon. It attracts much attention from both the academia and industry. People from ETH Zürich, University of New Hampshire, Louisiana State University, Electric Service Infrastructure Council and many other institutes/organizations stopped by my poster, had a great conversation with me, and were quite interested in the presented work and the research I have been doing with Prof. Cynthia Chen. I am also pleased to see that our work has reached out to other infrastructure research domain beyond transportation. This shows the broad impact of our work, and will benefit the transportation research at UW in the long term by facilitating interdisciplinary connections.

I attended many technical sessions that were informative of the following five aspects: 1) future trend in the industrial development and academic research in transportation; 2) current research and state of the art in transportation-related big data applications; 3)



transportation data that is possibly available; 4) advances in transportation research methodologies; and 5) my personal research interest involving applications of (location-based) social media data in transportation and interdependent infrastructure network resilience. It was a good opportunity to learn from other scholar to improve our own research ideas/techniques and be tuned of the cutting-edge work in the transportation field.

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# PACTRANS STUDENT EXPERIENCES AT TRB

## Xiangyang Guan continued

I attended the meetings of Transportation Data and Information Systems committee and Network Modeling committee. They gave me an opportunity to get involved in the committee activities such as paper reviewing and event organizing.

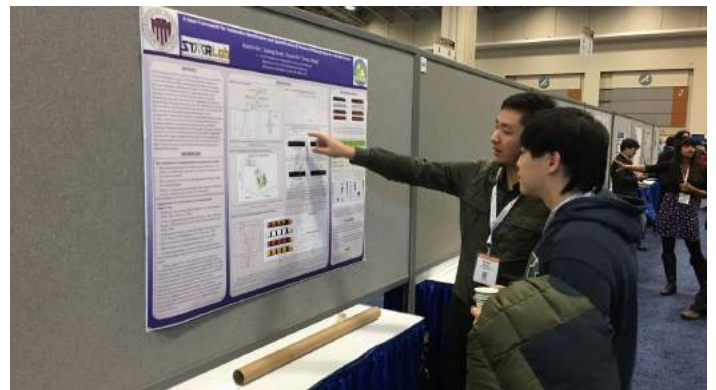
In both formal (such as committee meetings) and informal (such as receptions) occasions, I met with reputable scholars who share a research interest with

me or will be of potential help to my future career. I also gathered with my college friends, and tried to reconnect to people I got acquaintance in previous TRB meetings. There were a lot of interesting and informative conversations, and parties! It is a great and unforgettable experience of TRB in DC this year.

## Ruimin Ke

This is the fourth year I traveled to TRB meeting under PacTrans support. I really appreciate the funding and other supports from PacTrans and thanks very much to the help I received from Dr. Yinhai Wang, Mr. Cole Kopca, and Ms. Melanie Paredes.

This year I presented a paper titled “A New Framework for Automatic Identification and Quantification of Freeway Bottlenecks Based on Wavelet Analysis” as the first author in a poster session on Monday morning. It was an early session starting at 8 am. This topic was not my main research area but I was glad I came up with this interesting idea and had the paper accepted. It was encouraging to see that people were really interested in this paper, especially how the wavelet analysis was adopted in freeway bottleneck research. I was the co-authors of another three papers this year, among which the one led by Yifan Zhuang was supported by PacTrans



as well. I also participated in an oral session together with Dr. Lutin, who was the PI of the TRB IDEA Collision Avoidance project we wrapped up last year. I shared five slides and mainly talked about the work we completed for the project and our presentation generated the most questions in that session.

## Haena Kim

My experience at the Transportation Research Board (TRB) conference in Washington DC was amazing! The 97th TRB Annual Meeting was held January 7–11, 2018, at the Walter E. Washington Convention Center. There were so many workshops and seminars during the conference. I was thrilled to present my research work in both presentation and poster format. Fortunately, my paper was selected as one of the year’s best urban freight transportation research paper so I had the honor to present at the session called “Best Papers in Urban Freight Transportation Research: See What’s Possible”. Also, I enjoyed listening to the valuable presentations at numerous sessions and interact with other scholars who were in the transportation field.



My paper focused on learning and improving goods delivery in Seattle, as a part of “Final 50 feet” project.

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# PACTRANS STUDENT EXPERIENCES AT TRB

## Haena Kim continued

This joint research project, with the University of Washington and the City of Seattle, looks at ways to improve the last segment of delivery systems including loading areas, traffic control, and street design. As one of the leading researchers in this project, I collected time measurements in the final 50 feet of delivery process by managing the data collection team of 8 students. Based on the collected data, I built a detailed process flow maps to identify the processes that consume the most non-value added time and the greatest variability. This

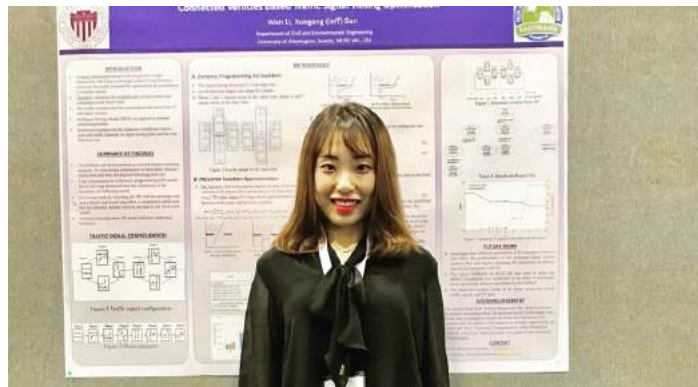
can help us identify strategies to improve the overall urban freight system and be better accountable for extended truck dwell times and failed deliveries.

The TRB conference inspired me to realize what can be accomplished in terms of the City's transportation goals and how my research effort could contribute to set a benchmark for future transportation policies. The impacts of my research are not limited to only in Seattle but to all other cities internationally.

## Wan Li

From Jan 7 to Jan 10, 2018, I have attended The Transportation Research Board (TRB) 97th Annual Meeting in Washington DC. TRB is a global meeting conference with more than 5,000 presentations in over 800 sessions and workshops covering a wide range of topics.

This year, I have the honor to present a paper, "Connected Vehicle Based Traffic Signal Timing Optimization" in the session of 572-Connected and Automated Vehicle - Enabled Signal Control. It gave me an opportunity to meet experts and researchers face to face. Some of them provided a great number of valuable comments, from the criteria of data collection to methodology. Moreover, I have audited many presentations, such as the lecture session of "Application of Connected/Automated Vehicle (CAV) in Traffic Signal Systems", which closely related to my dissertation. They presented their up-to-date research progress with a great deal of details and explanations. Another interesting thing of the conference is that I met many people who have written papers I have read. It is effective by telling people what I have doing to find out what they are doing.



In addition, TRB provide a great opportunity to network, e.g., many receptions hold by universities, companies and some academic organizations. Often people from other institutions, DOT or industries can become valuable resources. They can also help us uncover ideas and spark inspiration when getting to know each other on a personal level. In TRB, there are many presentations, committee meetings, and receptions providing the platform for people to network with peers. I found it very enjoyable and professionally satisfying.

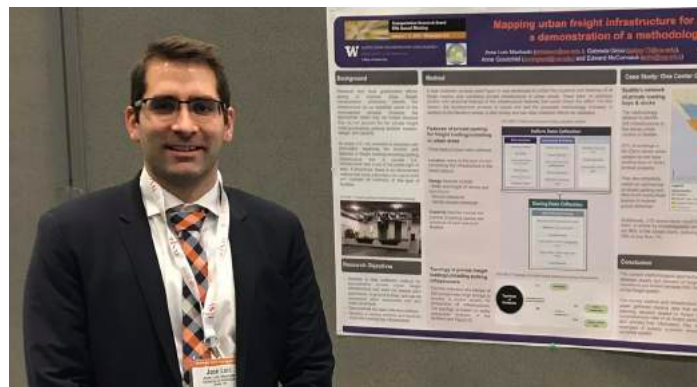


# PACTRANS STUDENT EXPERIENCES AT TRB

## Jose Machado

I am the recipient of the 2018 TRB PacTrans travel support and greatly appreciate the financial assistance. I participated at the TRB 2018 Annual Meeting in several ways. I presented my research on the Final 50' project, I was a facilitator at a workshop, attended various poster and lectern sessions, participated at committee meetings and networked with other researchers and industry members. I defended my research at a poster session. The reference to my publication is number 18-06171, "Mapping urban freight infrastructure for planning: a demonstration of a methodology". This publication was reviewed by TRB's Standing Committee on Urban Freight Transportation (AT025).

I was a facilitator at the workshop titled 'Research Success: How to Create a Freight Research Community that Learns from Failure.' I facilitated a discussion with a group of six researchers from various countries. The participants discussed about what's needed to create a freight research community that learns from failure and I summarized the discussion into a reduced

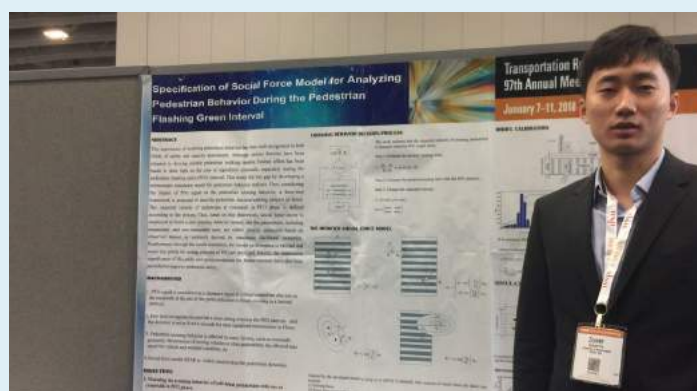


number of principles. These principles will be used by the organizing committee to develop a document of recommendations. Moreover, I participated a various freight-related committee meetings, poster and lectern sessions where I networked and learned about other researchers' work.

Overall it was a great TRB conference and helped me keep developing as a researcher. Thank you very much again for making it possible!

## Ziyuan Pu

During my five-day trip for TRB 2018 annual conference in Washington D.C., I learnt a lot from the conference by attending several poster sessions, committee meetings and organization receptions. In the poster session, I have found several research papers which along the same direction with my research interests. I got opportunities to talk with the authors about the technique details of the research and I found some potential research ideas during the conversation. I attended the committee meeting of transit performance committee. During the meeting, members presented the research direction in the future, which gave me a more comprehensive understanding about which research topic is more important in transit operation research area and what kinds of methodology are more acceptable. In the receptions, I have made friends with lots of people who are come from various organizations and also discussed the potential cooperation opportunities



with them. In addition, I delivered a poster presentation during the conference. Several scholars gave me suggestions about the potential improvement in the methodology part of the research and also they brought me some potential research ideas in the similar research area.

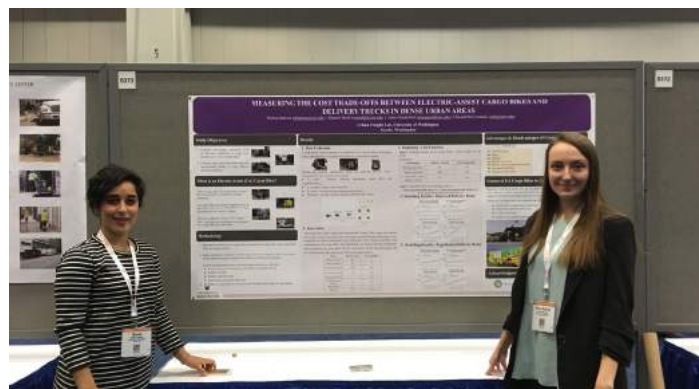
# PACTRANS STUDENT EXPERIENCES AT TRB

## Manali Sheth

The Transportation Research Board hosted their annual conference between January 7-11, 2018 in Washington, D.C. Members of the Urban Freight Lab had set a goal in the summer to share our research through this prestigious platform. I was affiliated with two research projects that were accepted at TRB, however, was involved with presenting just one of them. The image above shows our poster presentation entitled, “Measuring The Cost Trade-Offs Between Electric-Assist Cargo Bikes And Delivery Trucks in Dense Urban Areas.” The second presentation was a lectern session occurring at the same time, at which Anna Bovbjerg presented our work on safety around active railroads.

We presented on Monday, January 08 at 8 AM. We hung our poster just before the session was to begin, and took great pride in sharing the Urban Freight Lab’s work and this research project in particular. Through the poster session, we met transportation leaders from the public sector and private sector. Both sides shared immense interest in the future of Electric Assist Cargo Bikes, and saw potential to incorporate it to alleviate the unique challenges their firms face. For example, the head of the City of Oakland’s Transportation Department spoke to us at length about the challenges dense urban areas are facing, and though Oakland is not an extreme case, it needs to think smart and ahead to preempt some major transportation challenges. Therefore, he wanted to learn more about how we quantified cost trade-offs in dollars, and the scenarios in which electric assist cargo bikes are beneficial.

A Senior Transportation Planner from San Francisco’s ARUP office met with us and shared some of the challenges university campuses or technology campuses face when maneuvering goods within their campus, without the exhaust and noise pollution from large trucks. He had been thinking about EA Cargo Bikes, and was excited to see our charts and take pictures of it.



For the rest of TRB, I made it a point to learn more about freight transportation planning, future transportation technology, and programmatic efforts in transportation campaigns. The sessions I attended reflect these interests.

The major takeaway I had from all of these sessions is the power of clean data and pairing this with asking the right questions. Some of the stronger presentations not only had a logical flow to their storytelling, but also had credible data sources that strengthened their presentation. In fact, many speakers shared that they had sufficient data about travel behavior, crashes, etc., but were not sure how to optimize its use.

As a member of the Urban Freight Lab, it was encouraging to attend the special Freight Day sessions and learn about the diversity of discussions happening within the freight sector. From major economic concerns of shipping Californian almonds to Japan, to discussing the role of technology in improving freight safety. There were many illuminating discussions, and I am grateful to have had the opportunity to present, learn, and meet wonderful people in the field.

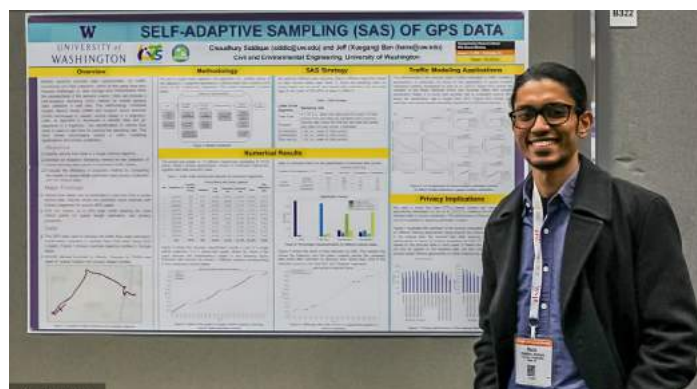
# PACTRANS STUDENT EXPERIENCES AT TRB

## Nazib Siddique

The immensity of number of attendees and presentations is probably the greatest thing about TRB annual meetings. Although I only had a poster to present in this year's conference, I was highly eager to visit DC as TRB always brings up new ideas and research inspirations. This year I focused more on the poster sessions in the exhibition hall, especially in networking with other fellow researchers from all over the world and different industry representative. I felt this year's industry exhibits were exceptionally rich. I attended numerous lectern sessions covering topics from AV/CV to big data in transportation.

A particular thing made me very happy during my poster session. Someone from the transit industry was intrigued by my research. We had a long chat, and he proposed a collaboration. This enabled my algorithms to be actually used in real world scenario, which is exciting.

Last but not the least, TRB always gives this opportunity to reunite with your old peers. I was delighted to meet some of my old friends and colleagues after a long time.

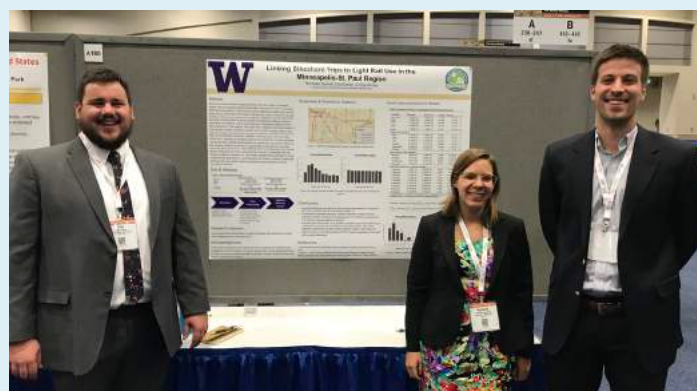


I met my thesis supervisor during my undergrads who currently lives in UK.

Overall, I had a very pleasant experience in this year's TRB.

## Rochelle Starrett

Attending Sessions: Over the course of TRB I attended several lectern sessions and several poster sessions. On Monday I predominantly attended lectern sessions and heard from several very interesting presenters. One presentation focused on the sociodemographic distinctions of those who are carless by constraint (financial, health, etc.) and those who are carless by choice. While the conclusions were pretty straightforward, it raised some interesting insights with regards to how car-free lifestyle narratives are covered by the media and its implications for the types of transportation solutions provided to these individuals. Another really interesting presentation looked at the density distribution surrounding transit stations to develop a better measurement of density and accessibility in the context of transit oriented development. Tuesday was largely focused on the poster sessions, including one that predominantly focused on issues and research relating to different aspects of transit and emerging transportation technologies. Learning about some of the new research directions in these areas was definitely interesting.



Meeting New People: Perhaps one of the more interesting parts of TRB was catching up with acquaintances from Iowa State, other schools that are part of PACTRANS, and meeting new transportation professionals at some of the receptions and other events I attended. This conference is an excellent way to become more involved with the transportation community and develop new research ideas based on the people that I met. I received several business cards for transportation professionals that I can now reach out to in the future for research or job opportunities.

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# PACTRANS STUDENT EXPERIENCES AT TRB

## Rochelle Starrett continued

Presenting Research: One of the best experiences of the conference was presenting the posters that were accepted to the conference. During the poster session on Monday, we were fortunate to receive an aisle spot which put us in a highly trafficked location with a constant stream of visitors. Most of the visitors had fairly straightforward questions or just wanted to learn a bit more about what we did, but there were some other people who were interested in providing more feedback or discussing some of the broader transportation questions which was really exciting and engaging. There was predominantly positive feedback on our research and lots of good feedback for things that we could consider in the future. The second poster session was less well-trafficked initially, due to its early morning start, but by the end there were still a good number of

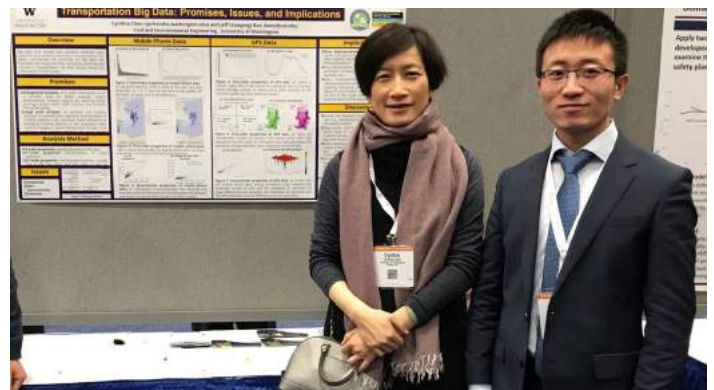
visitors coming by, including an individual who was very interested in the work and possibly hearing it presented in a different setting. Again while some people just wanted to hear about the gist of the work, others were interested in developing a longer conversation around bikeshare and transit. At this session we also met a couple individuals from Metro which had provided part of the data for the study that we had completed on Monday that were fun to talk with. Don also stopped by at this session to provide some useful feedback on our poster design for future presentations. Overall, I really enjoyed getting to interact with so many different people and share what we had done in a very hands-on way while also practicing my extemporaneous speaking skills which made it a really great experience.

## Feilong Wang

I really appreciate the support from PacTrans, which offered me a valuable chance to attend TRB2018. I learned a lot from this conference.

I had a chance to see the big picture of the transportation world. Before TRB2018, I did not know what subjects this field has and neither know what subject my current work belongs to. But, after the conference, the picture in front of me becomes much clearer: I learn the transportation is a vast science field that involves numerous people from both world-wide academic institutes and industrials. I see people all over the world are working together to make the transportation system greater.

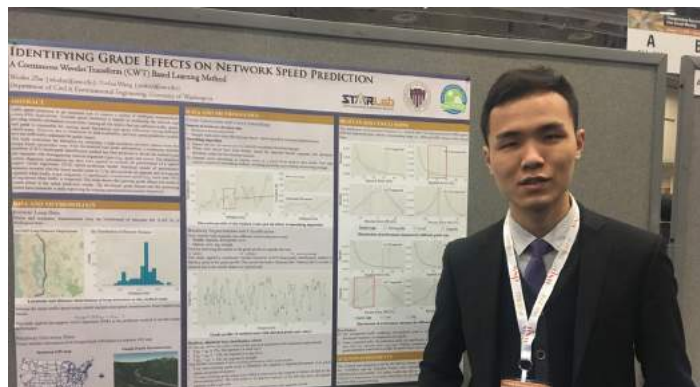
Meanwhile, the experience of making friends who have similar academic pursue during TRB is definitely exciting. I also meet lots of great professors there and it is interesting to exchange ideas. These ideas benefit me in terms of selecting research topics and picking up specific questions to answer. I do believe there are chances of cooperation with them.



# PACTRANS STUDENT EXPERIENCES AT TRB

## Wenbo Zhu

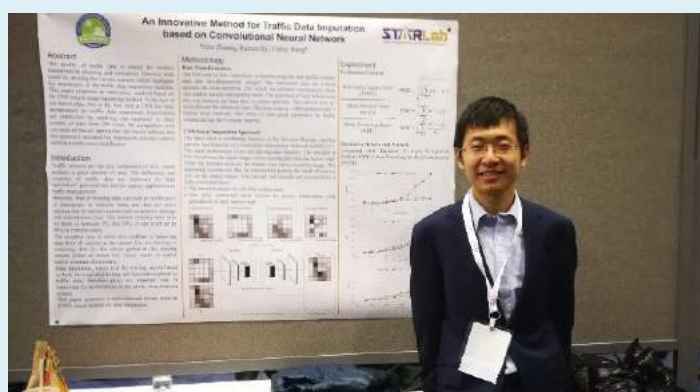
Attending the 2018 TRB Annual Meeting was a great experience for me. In this year's meeting, I presented a poster summarizing my research work of "Identifying Grade Impact on Network Speed Estimation". I collected valuable feedback from the audience during the poster session and was also inspired to investigate more on some interesting directions. Additionally, I learnt a lot from presentations and exhibits about the state-of-art transportation engineering both in the academic and professional fields. I am particularly interested in transportation big data modeling techniques and I was happy to find a lot of interesting research within that topic. This year I also started to participate in committee meetings and it is very beneficial to see how the future research projects are going to be planned and distributed.



This year's PacTrans reception was also a great success. I talked to many old friends who graduated from UW, and saw many new faces as well. We spent a wonderful time with great food and drinks provided. Many thanks to PacTrans for supporting my TRB travel, as well as for preparation of such a great reception!

## Yifan Zhuang

It is my great pleasure to join the 2018 TRB conference, which is a huge change for me to show research work to learn from others. Although I went to TRB last time, it was my first time to make a poster in public. And it was also a challenge for me because I had no experience before to do such a thing. Before the poster session, I did a lot of preparation work such as brief introduction to my paper and answers to possible questions. At that day, I tried my best to explain my work even though met some question that I could not answer. But these questions guided me to my deeper and future researches. For example, the traffic flow had its own pattern and would have different changes at the same time for different days in one week. Therefore, it was important to separate them into different categories for analysis work. My previous work merged them up and did not show their unique features. I want to give great thanks to my friends in our lab who supported me a lot in the research work and poster session.



TRB conference was an opportunity to get new friends and chat with old friends. People from different backgrounds gathered together to talk about something we were all interested in. Through chatting, we always had more ideas and solutions to expand or deepen our researches.

Hope to meet the TRB conference in 2019!

# Save the Date!

October 12th, 2018  
Fairbanks, AK

## North to the Future

Emerging Mobility and Safety Issues in the Pacific Northwest

2018 PacTrans Region 10 and CSET  
Transportation Conference



More information at:  
[cset.uaf.edu/pactrans-conference](http://cset.uaf.edu/pactrans-conference)

### About Pacific NW Transportation Consortium

The Pacific Northwest Transportation Consortium (PacTrans) is the Region 10 University Transportation Center (UTC) established in January 2012 with a \$6.89 million grant from the US Department of Transportation (USDOT).

PacTrans is a coalition of transportation professionals and educators from Oregon State University (OSU), the University of Alaska Fairbanks (UAF), University of Idaho (UI), University of Washington (UW), Washington State University (WSU), Boise State University (BSU), and Gonzaga University (GU). With a new focus on mobility, PacTrans serves as an engine and showcase for research, education, and workforce development in the Pacific Northwest.

The goal of PacTrans is to create an environment where consortium universities and transportation agencies within Region 10 work together synergistically. The solutions that we develop will meet the needs of the region and provide direction for the five strategic goals of the U.S. Department of Transportation.

- Improving mobility of people and goods
- Reducing congestion
- Promoting safety
- Improving the durability and extending the life of transportation infrastructure
- Preserving the existing transportation system.

The Pacific Northwest offers a unique blend of opportunities to examine a variety of transportation issues, including those related to urban centers, rural communities, diverse geographic features (e.g., coastal plains, mountain ranges), and a growing population of pedestrians and bicyclists. This diversity makes the Pacific Northwest a natural laboratory in which to investigate transportation solutions that are applicable both locally and nationally.

PacTrans is dedicated to collaborating with transportation agencies, companies, and research institutions to jointly develop safe and sustain-able solutions for the diverse transportation needs of the Pacific Northwest.