METRANS on the Move: our weekly newsletter by students

Happy Wednesday, Reader!
Be sure to check out the new issue of Transfers Magazine here!

In the News

The articles in this newsletter are prepared or accomplished by others in their personal capacity. The opinions expressed are the author's own and do not necessarily reflect the views of METRANS or its partners.

Spotlight on USC Doctoral Candidate Yougeng Lu

“I have been interested in transportation from a very young age, so it is perhaps not surprising that I am now a Ph.D. candidate in urban planning at USC, focusing my studies and research firmly in the field of transportation planning, investigating and developing knowledge in both the technical–physical and socio-economic complexities of the field.”

Read more here.

Price progressive degree graduate amplifies undergrads’ voices

“I am confident in my lived experience as a student, and I feel like just that in itself gives me a lot of insight to offer to underclassmen who maybe aren’t sure about what classes to take or where to get involved.”

Read the USC Price feature here.

‘Greenway Stimulus’ Could Bring Boom in Bike and Walking Trails

Active-transportation advocates are campaigning for $10 billion in infrastructure funding to connect cities with paths and create an interstate system for cyclists and walkers.

Read the Bloomberg feature here.

Webinars & Online Events

UC ITS Webinar: Partnering with Historically Underserved Communities in Transportation Planning
Thursday, June 10th at 10:00 am PDT
This webinar will provide transportation professionals with recommendations and best practices in . . .
Pritzker Forum on Global Cities: The Post-COVID City
Thursday, June 10th at 2:00 pm PDT
This webinar will provide transportation professionals with recommendations and best practices in.

The 12th Annual Mineta National Transportation Finance Summit Presents:
Electrifying the Transportation Future
Friday, June 11th at 10:00 am PDT
Transportation policymakers face two overlapping, once-in-a-generation opportunities: electrifying the nation's vehicle fleet and re-establishing a stable source of federal and state revenue for transportation.

The National Academies of Sciences, Engineering, and Medicine Presents:
How We Move Matters: Exploring the Connections between New Transportation and Mobility Options and Environmental Health--A Workshop
Sunday, June 13th at 8:30 am PDT
This workshop will bring together experts in transportation, consumer behavior, and environmental health to share perspectives on the environmental health impact of evolving mobility options.

NCST Webinar: Monetary and Non-Monetary Factors Influencing Travel Choices in an Automated, Shared, and Electric Vehicle Future
Tuesday, June 15th at 10:00 am PDT
The transportation system is undergoing three revolutions: vehicle automation, electrification, and . . .

INSPIRE University Transportation Center Webinar: Fiber Optic Sensor Based Corrosion Assessment in Reinforced Concrete Bridge Elements and Metal Pipelines
Wednesday, June 16th at 8:00 am PDT
In this 50-minute lecture, the fundamental concepts of fiber optic sensors for both distributed and . . .

STRIDE Webinar: Transportation to Health Care and COVID-19
Wednesday, June 16th at 9:00 am PDT
Exploring Pandemic-Era Travel Trends and Post-Pandemic Challenges and Opportunities

Wednesday, June 16th at 1:00 pm PDT
Connect, learn from, and engage with traffic safety professionals across the SCAG region this summer!

RFF-Urban Institute Series on Environmental Justice: Climate Impacts, Adaptation, and Resilience
Thursday, June 17th at 8:00 am PDT
Who stands to win—or lose—as a result of climate change? The impacts of temperature increases . . .

C2M2 CPS Frontiers Presents: Assessing Potential of Bike Share Networks and Active Transportation to Improve Urban Mobility, Physical Activity and Public Health Outcomes in South Carolina
Friday, June 18th at 11:00 am PDT
C2M2 invites you to join us in welcoming Dr. Kweku Brown, The Citadel.
Fast Facts
Created for Students, by Students

Connected Autonomous Vehicles: Safety During Merging and Lane Change and Impact on Traffic Flow

Authors: Petros Ioannou, Fernando V. Monteiro
Year: 2020
Keywords: Connected and autonomous systems, safety and security

What's going on?
In their current form, automated vehicles behave as independent robots relying solely on their on-board sensors to operate in highly uncertain environments — but how can these vehicles force or persuade other vehicles in a dense traffic situation to create space in the destination lane for safe merging? In this report, researchers investigated how lane changes and merging can be negotiated in a connected environment to improve safety and minimize the impact on traffic flow. To do this, researchers developed a safety spacing algorithm, which uses the vehicle characteristics, speed, and location to determine the amount of space needed to perform a safe lane change. Furthermore, they propose a method that allows vehicles to cooperate to generate the necessary safe gaps and to complete the lane change maneuver. The researchers also expanded their study to platoons of vehicles, developing a communication protocol to avoid conflicts, and proposing a methodology to identify sensor or communication failures.

What were the findings?
The researchers found that autonomous vehicles can safely maneuver lane changes if all vehicles are connected. In a mixed traffic environment, with some connected vehicles and some human-controlled vehicles, safety and traffic flow efficiency are compromised. Additionally, fully connected environments would prevent bottlenecks, as automated vehicles would have advanced notice of upcoming congestion and could perform lane changes to maintain efficient traffic flow.

What's next?
While still far from reality, implementing a fully connected autonomous vehicle environment would allow for more efficient lane changes, which would reduce traffic congestion, improve mobility and safety, and reduce fuel consumption and emissions.

Read the full report on our website:

The Pacific Southwest Region UTC conducts an integrated, multidisciplinary program of research, education and technology transfer aimed at improving the mobility of people and goods throughout the region.

Check this week’s featured Fast Facts here.
Looking for more Fast Facts? Check out the Fast Facts Page on Metrans.org!

Pathways to Opportunity

APTF 2021 Scholarship Program
APTF
Apply by 06/14/2021
See more info

NEMESIS Student Research Competition
Aviana Global Technologies
Channel Application closes 06/30/21
See more info

Management Analyst
SGVCOG
Alhambra, CA

Civil Engineer (Highway Design)
USDOT
Ashburn, VA

More Internships and Scholarships Here