

Symposium 2021 Breakout Session Title:

B309-The Long and Winding Road: Planning and Network Analysis for CAV

Session Contact/Organizers:

- Lili Du, PhD., Associate Professor, University of Florida ([session contact](#))
- Jiaqi Ma, PhD., Associate Professor, University of California, Los Angeles
- Carole Delion, Division Chief, Maryland DOT State Highway Administration
- Erik Ruehr, Director of Traffic Engineering, VRPA Technologies, Inc.

TRB Sponsor/Partner Committees (if any): Committee on Highway Capacity and Quality of Service (TRB Committee ACP40); Emerging Technologies in Network Modeling (TRB Subcommittee AEP40-5)

Session Description

In order to fully realize their benefits in network efficiency, capacity increases, and safety, CAV's will need to be woven into the planning process for building and maintaining the multimodal transportation system. This process has already started with national, statewide and regional agencies focusing on new procedures that incorporate CAVs. Panelists will showcase a broad array of perspectives, from the Federal Highway Administration, state transportation officials, and researchers and practitioners.

New for '21: the session will provide an update on the roadway capacity effects on CAVs including arterial capacity and incorporation of CAVs into the Highway Capacity Manual.

Goals/Objectives/Outputs

- Bridge the knowledge gap between planners and modelers.
- Provide planners, modelers, and traffic engineers with current guidance regarding CAV implementation in models and regional plans.
- Present the latest national guidance on modeling CAVs in transportation networks.

Agenda

- **Opening (10 min) – Lili Du**
 - Web Logistics
 - Opening remarks & Agenda
 - Poll questions: **Needed from the ARTS committee team**: we understand Zoom can set up the polls ahead of time, we would need someone to put the below polls into the session so we can launch them during the session.

Question#1: Please let us know what category most accurately reflects your perspective (single choice):

- Academia
- Association or Coalition
- Consulting Firm
- Private firm
- Metropolitan Planning Organization
- Local government
- State government
- Federal government

Question#2: What's tool do you use most frequently when planning for transportation projects (multiple choice)?

- Manual calculations / spreadsheets
- Static modeling tools (e.g. HCM, Synchro)
- Macrosimulation (e.g., CUBE)
- Mesosimulation (e.g. VISUM, AIMSUN)
- Microsimulation (e.g. SimTraffic, VISSIM, AIMSUN)

Question #3 : What specific areas do you work on (multiple choice):

- Traffic flow analysis
- Traffic planning and design
- Network modeling
- Traffic demand
- Shared mobility
- Simulation

- **Presentations (80 min – 20 min/presentation)**
 1. **Transportation planning overview (Jeremy Raw, FHWA)**
Describes at a high level the planning to modeling process & FHWA perspectives.
 2. **Evaluate the supply side of CAV (Kara Kockelman, U. Texas) -**
Describes example of how to generate the supply side for demand modeling as it relates to CAV (possibly focused on ridehailing/shared mobility services)
 3. **Travel demand models and CAV scenarios example at the MPO level (Yueshuai Brian He, Jiaqi Ma, UCLA)**
Describes the regional modeling process, and ties to an existing example of how scenario modeling was done for CAV.

4. Capacity Analysis for CAV's: Results of Current Research and Future Directions (Bastian Schroeder, Kittelson & Associates)

Summarizes previous results of CAV-related roadway capacity research conducted by multi-state pooled fund study led by the Oregon DOT. Provides the results of new research on arterial roadways. Describes future directions of the study.

- **Q&A portion (25 min)**

Moderator: Erik Ruehr, Director of Traffic Engineering, VRPA Technologies, Inc.

- **Close out (5min) – Lili Du**

Related Sessions:

Keli Kemp's session sounds somewhat related: Planning for the Unknown: Connected, Autonomous, Shared & Electric (CASE), though likely to broad other topics such as EVs, shared mobility etc.