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# Traffic Flow Theory and Characteristics Committee Meeting

2019 Midyear Meeting  
Lausanne, Switzerland

July 23, 2019

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# Self-Introductions Members/Friends

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Please don't forget to sign in!

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# Agenda



Welcome and Call to Order	S. Ahn
Introductions – Members & Friends	
TRB Report	R. Cunard/R. Bertini
Chair Report	S. Ahn
Membership	S. Ahn
TFTC Subcommittee Reports	
- SimSub	
- Crowd Flow Dynamics	S. Ahn
- Connected Automated Vehicles	S. Hoogendoorn/W. Daamen/M. Sarvi
- Research Problem Statements	S. Hamdar
- Paper Review	S. Ahn/V. Gayah
- Greenshields Prize & Awards	S. Ahn
- Outreach and Diversity	M. Menendez
Midyear Meeting	M. Saberi /S. Hamdar/A. Talebpour
- 2020 – Amsterdam, The Netherlands	
- 2021 – ISTTT24, Beijing, China	S. Hoogendoorn
- 2022 - ?	
Liaison with Other Committees	All Attendees
- Transportation Systems Simulation Manual	
- Others?	R. Bertini /J. Halkias/C. Leggett
International Liaison	All Attendees
Announcements and Future Meetings	All Attendees
New Business	S. Ahn



# TRB Report



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- Rich Cunard
  - Rob Bertini



# Chair Report: Calls for Papers

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- Modeling, Calibration and Validation of Connected and Automated Vehicles: Methods and Data Sources:  
<https://annualmeeting.mytrb.org/CallForPapers/Details/741>
  - Improved flow modeling and advanced control strategies for large-scale urban traffic networks:  
<https://annualmeeting.mytrb.org/CallForPapers/Details/757>
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# Chair Report: Workshops

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## Proposed Workshops at TRB 2020

- AHB45(1) SimSub: Traffic Flow Simulation – Persistent Challenges
    - To bring together researchers, vendors and users of traffic flow simulation to identify persistent challenges and to discuss solution approaches (e.g., tactical driving, micro-meso-integration, vehicle-pedestrian-interaction, non-lane-based traffic, microscopic DTA, real-time application, etc.)
  
  - AHB45(3) CAV Sub: The Advancement of Modelling Connected and Automated Vehicles: Past and Future
    - To bring researchers who developed and simulated CAV models (i.e. CAV logic) together, and to discuss the properties of such models and their limitations. an effort synthesizing the CAV modeling research work while guiding the future research needs on this topic.
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# Membership Update

- Secretary: Ludovic Leclercq, IFSTTAR
- Committee Research Coordinator: Vikash Gayah, Penn State University
- Committee Communications Coordinator: Ilgin Guler, Penn State University
- New Members – Welcome!
  - Montasir Abbas, Virginia Tech
  - Robert Bertini, University of South Florida
  - Danjue Chen, University of Massachusetts, Lowell
  - Jack Haddad, Technion Israel Institute of Technology
  - Rachel James, Federal Highway Administration (FHWA) – Young member
  - Jiwon Kim, University of Queensland
  - Kaan Ozbay, New York University
  - Hwasoo Yeo, Korea Advanced Institute of Science and Technology (KAIST)
  - Ali Zockaie, Michigan State University – Young member
  - Raphael Stern, University of Minnesota – Young member
  - Dan Work, Vanderbilt University



# Membership Update

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- Rotating Members – Thank you for your service!
    - Mark Brackstone
    - Christine Buisson
    - Winnie Daamen
    - Nikolas Geroliminis
    - Jorge Laval
    - Stephen Mattingly
    - Yanfeng Ouyang
    - Vincenzo Punzo
    - Majid Sarvi
    - Tomer Toledo
    - Hans Van Lint
    - Yibing Wang
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# Chair Report: TRB Centennial

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- TRB turns 100 on November 11, 2020
  
  - A draft Centennial Paper from our committee has been submitted.  
<http://tft.eng.usf.edu/index.htm>
    - To showcase the committee's past accomplishments and contributions to transportation, demonstrate the committee's current relevancy and activities, and consider the committee's role in meeting future challenges and opportunities. Centennial Papers will be featured on the Centennial website.
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# Chair Report: TRB Centennial

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- Authors
    - SOYOUNG AHN, University of Wisconsin-Madison
    - BENJAMIN COIFMAN, The Ohio State University
    - VIKASH GAYAH, Pennsylvania State University
    - MOHAMMED HADI, Florida International University
    - SAMER HAMDAR, George Washington University
    - LUDOVIC LECLERCQ, University of Lyon - IFSTTAR
    - HANI MAHMASSANI, Northwestern University
    - MONICA MENENDEZ, New York University Abu Dhabi
    - ALEX SKABARDONIS, University of California, Berkeley
    - HANS VAN LINT, Delft University of Technology
  - **Other activities for TRB 2021?**
    - Historical paper session (via CFP or by invitation)?
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# Subcommittees

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1. SimSub (AHB45(1)) S. Ahn
  2. Crowd Flow Dynamics, Modeling and Management (AHB45(2))  
S. Hoogendoorn/W. Daamen/M. Sarvi
  3. Connected Automated Vehicles (AHB45(3)) S. Hamdar
  4. Research Problem Statements S. Ahn
  5. Paper Review S. Ahn
  6. Awards M. Menendez
  7. Outreach and Diversity M. Saberi /S. Hamdar/A. Talebpour
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# SimSub

- Sunday workshop
  - Traffic Flow Simulation – Persistent Challenges
  - The workshop will bring together researchers, vendors and users of traffic flow simulation to identify persistent challenges and to discuss solution approaches (e.g., tactical driving, micro-meso-integration, vehicle-pedestrian-interaction, non-lane-based traffic, microscopic DTA, real-time application, etc.)
  
- Simsub housing TSSM – still in discussion
  
- Simulation workshop in April 2020 in Irvine, CA



# Crowd

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# Midyear Annual Report

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## AHB45(3) Subcommittee: Traffic Flow Modeling for Connected and Automated Vehicles

AHB45 Meeting  
Lausanne, Switzerland  
July, 2019

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# Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

Transportation Research Board Annual Meeting Events (12-16 January '20):

**a. Call for Papers:**

Modeling, Calibration and Validation of Connected and Automated Vehicles: Methods and Data Sources

- i. Build of CAV models in mixed driving environments
- ii. Error consideration and definition when working with CAV models (i.e. safety related errors versus mobility related errors)
- iii. Validity of the use of synthetic data especially given the limited number of CAVs deployed on US roadways
- iv. Investigation of disengagement events' characteristics in a CAV environment
- v. The role of artificial Intelligence (AI) and Deep-Learning (DL) methods when calibrating and validating CAV models
- vi. Issues in adopting existing traffic flow models' methods when calibrating CAV models
- vii. Models' robustness to errors and sensitivity to parameters

**b. Workshop proposal (Thursday January 16, 2020 tentatively):**

The Advancement of Modelling Connected and Automated Vehicles: Past and Future





# Traffic Flow Modeling for Connected and Automated Vehicles – AHB45 (3)

## ■ AVS:

- AVS 2019: Limited Participation
- AVS 2020: AHB45(3) Task Force (Discussion on Added Value for Participation)

## ■ Website and Outreach Platform :

- Data Exchange Platform Active and to be expanded:  
<https://tftCAV.seas.gwu.edu>

## ■ Subcommittee Scope of Work:

Connected and Automated Traffic Flow Subcommittee (CAT) – broadening of scope and mission/co-sponsorship?

- Intelligent Transportation Systems Committee: AHB15  
([gkrueger@hntb.com](mailto:gkrueger@hntb.com))
- Vehicle Automation Committee: AHB30 ([jane.lappin@tri.global](mailto:jane.lappin@tri.global))

## ■ Monograph or Centennial Paper on Traffic Flow Modeling of CAV/CAT ?







# Research Problem Statements

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- Subcommittee members
    - Vikash Gayah, Penn State (Committee Research Coordinator)
    - Mohammed Hadi, Florida International University
    - Rachel James, FHWA
    - James Sturrock, FHWA
    - Haizhong Wang, Oregon State University
  
  - NCHRP problem statements: Due Nov 1, 2019
    - TSSM problem statements – TFTC related one(s)?
    - Reach out to state DOTs (through TFTC members)
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# Paper Review

- New paper review system: Number of required reviewers
  - Presentation only: at least 2 reviewers
  - Presentation and Publication: at least 3 reviewers

Dates	Process
Aug 1	Papers due
Aug 20	Assign reviews
Sep 15	Reviews due
Sep 30 – Oct 15	1st round decision
Nov 15	Revised papers due
Dec 1 - Dec 15	2nd round decision
Jan 31	Final decision



# TFTC Awards

- Award subcommittee (for the papers presented in January 2019):
  - Ludovic Leclercq
  - Rob Bertini
  - Jiwon Kim
  - Monica Menendez
- Awards considered:
  - D. Grant Mickle Award (nomination made)
  - Fred Burggraf Award
    - **Influence of autonomous vehicles on car-following behavior of human drivers** (by Yalda Rahmati, Mohammadreza Khajeh Hosseini, Alireza Talebpour, Benjamin Swain, and Christopher Nelson).
  - Cunard Award (nomination made)
  - Best Paper on Traffic Flow Theory
    - **Analysis of a two-regime Stochastic Car-Following Model: for explaining capacity drop and oscillation instabilities** (by Tu Xu and Jorge Laval)
  - Greenshields Prize (no award this year)



# Reports

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## Outreach and Diversity Subcommittee

AHB45 Meeting  
Washington DC, USA  
July, 2019

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# Outreach and Diversity Subcommittee



- Continuation of Activities
  - Newsletter (<http://tftcnews.blogspot.com/>)
  - Special Thanks to Samer H. Hamdar

Transportation Research Board  
Traffic Flow Theory and Characteristics  
Committee—AHB 45

## Newsletter



Volume 7, Issue 7  
July 2019

## EVENTS/ANNOUNCEMENTS

### TRB 2020 AHB45 Calls for Papers: *Submission Deadline: 1 August 2019*

The Traffic Flow Theory and Characteristics Committee (AHB45) is organizing two calls for papers at the [Transportation Research Board 2020 Annual Meeting](#). The meeting will take place between January 12 and January 16 of 2020, at the Washington DC Walter E. Convention Center, USA. The titles of AHB45 sponsored calls are presented below:

- 1- Modeling, Calibration and Validation of Connected and Automated Vehicles: Methods and Data Sources ([more details](#))
- 2- Improved flow modeling and advanced control strategies for large-scale urban traffic networks ([more details](#))

We invite you to participate and contribute your valuable work to these calls. The paper submission deadline is **August 1st, 2019**.

## Newsletter Spotlight

AHB45 TRB 2020 Annual Meeting Call for Papers

Post-doctoral fellow position at the University of Hong Kong

Postdoctoral and doctoral positions at Aalto University, Finland

Postdoctoral position at the Technical University of Munich, Germany

Prof. Hermans and Ms. Almas-kari Cartoons/Pictures

Traffic in the Media:  
"Electric cars 'will not solve transport problem,' report warns"



# Outreach and Diversity Subcommittee

## ■ Continuation of Activities

### ○ Social Media

- Lama Al Hajj Hassan from NUTC has agreed to manage the twitter and Facebook accounts.
- Key question: What should be the contents we communicate?
  1. Updates about the committee (TRB sessions and workshops, committee meetings, committee awards, etc.)
    - Upside: focused on the committee
    - Downside: we will be active for only a short period of time per year.
  2. Include news letter highlights (in addition to 1).
    - Upside: more frequent communications
    - Downside: duplicates the news letter.
  3. Updates about the committee members (in addition to 1 and 2).



# Outreach and Diversity Subcommittee

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- Continuation of Activities

- Social Media

- Lama Al Hajj Hassan from NUTC has agreed to manage the twitter and Facebook accounts.

- Key question: What should be the contents we communicate?

- 3. Updates about the committee members (in addition to 1 and 2).

- Upside: very frequent communications

- Downside: significant effort to collect information from all members; not all the efforts are relevant to TFTC.

- 4. Other suggestions from TFTC members and friends?

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# Outreach and Diversity Subcommittee

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- Continuation of Activities

- Webinars

- The ISTTT webinars was delayed to focus on ISTTT 23 papers.

- Journal club needs a webinar platform that can handle more than 20 people.

- The Texas A&M platform cannot handle more than 20 people and will not be available from next year.

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# Outreach and Diversity Subcommittee

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- Special Thanks to:
    - Samer H. Hamdar
    - Justin Schorr
    - Meead Saberi
    - Robert Bertini
    - Sue Ahn
    - Jorge Laval
    - Lama Al Hajj Hassan
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# Summer Meetings

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- 2020 – Amsterdam, The Netherlands (any update from TU Delft?)
    - Aug 17-19, 2020
    - Traffic Flow Theory and The City
  
  - 2021 – ISTTT24, Beijing, China
  
  - 2022 – ? (US location)
    - Please send me your proposal
    - Will discuss and vote during committee meeting in January 2021
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# TFT@AMS

Hosted by AMS Amsterdam & TU Delft  
17-19 August 2020 (suggested date)  
Marineterrein Amsterdam

TU Delft

# Traffic Flow Theory and The City<sup>\*)</sup>

\*) Working title

**TFT midyear meeting 2020 proposal**

Serge Hoogendoorn (chair), Winnie Daamen (co-chair)

Meng Wang (TU Delft), Hans van Lint (TU Delft),

Stephan van Dijk (AMS), and Tom Kuipers (AMS)

# Selection of Special topics...

- Active mode traffic operations
- Advancing the NFD
- Big urban traffic data and their opportunities
- Connected & automated vehicles in the city, including interactions with other modes
- Flow operations and management during events
- Traffic flow operations in and around multi-modal transfer hubs
- Traffic flow theory and AI

## Meeting information

- CfP and event overview 1<sup>st</sup> of August 2019
- Deadline extended abstracts (5 pages) submission 1<sup>st</sup> of March 2020
- Acceptance notification 15<sup>th</sup> of April 2020
- Conference date August 17-19, 2020
- Invitations special issues September 1, 2020
- Selection of papers to be published in special issues (TR-C, Collective Dynamics)



# A unique moment to visit Amsterdam...

SAIL 2020 – Tallship festival  
August 12-16, Amsterdam  
[www.sail.nl](http://www.sail.nl)

## Venue and hotels

- Meeting held at new AMS location (<https://www.ams-institute.org>)
- Abundant accommodation available, e.g.:
  - Lloyd Hotel (<https://www.lloyd.nl>)
  - Volkshotel (<https://www.volkshotel.nl>)
  - The Student Hotel (<https://www.thestudenthotel.com>)
- And many others, something for everyone!





# Liaison with Other Committees

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- Highway Capacity Quality of Service Committee (AHB40)
  - Task Force on System Simulations (AHB80T)
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# New Business

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- Any other?
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# Adjourn

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Please don't forget to sign in!

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