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# Welcome to AHB45 Committee on Traffic Flow Theory and Characteristics

January 25, 2011

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# Agenda

Welcome and Call to Order	R. Bertini
Introductions – Members & Friends	All Attendees
Review and Approval of Minutes	R. Bertini
Committee Meeting of January 12, 2010	
Committee Meeting of July 9, 2010	
Committee Membership Rotation	R. Bertini
Chair's Report	R. Bertini
TRB Report	R. Cunard
FHWA Programs & Activities	R. Sheehan
Subcommittee Reports	
Paper Review and Sessions	R. Bertini
Mid-Year Meeting	
July 7-9, 2010, Annecy, France	C. Buisson
Proposed 2012	M. Hadi
Joint Subcommittee on Traffic Simulation Models	G. List
[see <a href="http://sites.google.com/site/trbcommitteeahb45">http://sites.google.com/site/trbcommitteeahb45</a> ]	
Sunday Workshop	J. Halkias
Committee Website [www.tft.pdx.edu]	R. Bertini
Committee Communications	S. Mattingly
Classic Papers Update	S. Ahn, J. Laval & N. Geroliminis
Research Problem Statements	M. Hadi
Greenshields Prize	N. Gartner
Special Report on Traffic Flow Theory	H. Mahmassani
<b>NEW</b> Subcommittee on Operations Workforce Development	Need Volunteer!
Liaison with other Committees	All Attendees
International Liaison	International members and attendees
Announcements and Future Meetings	All Attendees
6th ISHC - June 28-July 1, 2011, Stockholm, Sweden	
ISTTT19 – July 18-20, 2011, Berkeley, CA (w/Midyear Meeting) [isttt19.org]	
TFTC Midyear Meeting – Summer 2012, TBD	
ISTTT20 – 2013, Berlin	
New Business	All Attendees
Triennial Strategic Plan 2011-2014 (due August 1, 2011)	Volunteer Needed
2012 Annual Meeting Call for Papers	All Attendees
TFTC Annual Meeting Paper/Presentation/Poster Webinars	Jorge Laval
Adjourn	All Attendees



# Review and Approve Minutes

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- January 2010
- June 2010
- Special thanks to Marguerite Zarrillo!



# Welcome New Members

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- George List, North Carolina State University
  - Peter Vortisch, Karlsruhe Institute of Technology, Germany
  - Bob Sheehan, FHWA
  - Avinash Unnikrishnan, West Virginia University
  - Majid Sarvi, Monash University, Australia
  - Marco Ni, Northwestern University
  - Hans van Lint, Delft University of Technology, the Netherlands
  - Ludovic Leclercq, INRETS, France
  - Nikolas Geroliminis, EPFL, Switzerland
  - Soyoung Ahn, Arizona State University
  - Samer Hamdar, George Washington University (YM)
  - Stella So, Metropolitan Transportation Commission, Oakland, CA (YM)
  - Jing Dong, Oak Ridge National Laboratory (YM)
  - Monica Menendez, Swiss Federal Institute of Technology (YM)
  - Total membership: 25 + 5 International + 4 Young + 1 Emeritus = 35
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# Special Thanks To....

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## **Rotating Members**

- Ken Courage
  - Reinhard Kuehne
  - Do Nam
  - Ghulam Bham
  - John Halkias
  - Travis Waller
  - Rick Denney
  - Haris Koutsoupoulous
  - SC Wong
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# Chair Report

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- TRB 2011 Theme: *Transportation, Livability and Economic Development in a Changing World*
  - TRB 2012 *Transportation: Putting Innovation and People to Work*
  - Need to update paper reviewer pool (~310 members)
  - State DOT and MPO involvement
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# Chair Report

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- Joint Subcommittees in Operations Group (AHB45 interest?):
    - Positive Protection in Work Zones
    - Active Traffic Management
    - Managed Lanes
    - Intersections
    - Advanced Traveler Information Systems
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# TRB Report

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- 3875 papers received (>3694 last year)
  - 4,372 presentations, 768 sessions and workshops
  - 58% of papers in poster sessions (56% last year)
  - Smooth submission and review process
  - 15,000 reviews (3–5 per paper)
  - TRB Annual Meeting Online launched: papers, presentations and e-sessions (no DVD)
  - 85 sessions and workshops address Transportation, Livability and Economic Development in a Changing World
  - Please welcome, encourage and talk to “New Attendees” (ribbons)
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# TRB Report

<b>Paper Submissions</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Total Number	2862	3070	2847	3384	3694	3875
Total Presented	1688 (59%)	1849 (60%)	1759 (62%)	1882 (56%)	2190 (59%)	2322 (60%)
Papers in Lectern Session	888 (53%)	935 (51%)	867 (49%)	900 (48%)	921 (43%)	912 (39%)
Papers in Poster Session	728 (43%)	752 (41%)	861 (49%)	952 (51%%)	1232 (56%)	1352 (58%)
Papers in Meeting	21 (1%)	34 (2%)	31 (2%)	28 (2%)	20 (1%)	44 (1.9%)
Other Papers	2 (0.1%)	5 (0.2%)	0	2 (0.1%)	17 (0.8%)	14 (0.6%)
Invited Presentations					1750	2050
Total Speakers					3100	3300

<b>Sessions, Workshops, and Meetings</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>
Lectern Sessions	498	470	469	455	452	461	382	418
Poster Sessions	46	65	88	134	112	132	134	145
Workshops	62	62	73	79	86	89	99	110
Committee Meetings				425	442	424	444	503
Other Meetings							500+	500+
Total Meetings							>1500	>1500



# TRB Critical Issues

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- **CONGESTION:** increasingly congested facilities across all modes;
  - **ENERGY, ENVIRONMENT, AND CLIMATE CHANGE:** extraordinary challenges;
  - **INFRASTRUCTURE:** enormous, aging capital stock to maintain;
  - **FINANCE:** inadequate revenues;
  - **EQUITY:** burdens on the disadvantaged;
  - **EMERGENCY PREPAREDNESS, RESPONSE, AND MITIGATION:** vulnerability to natural disasters and terrorist strikes;
  - **SAFETY:** insufficient improvement;
  - **INSTITUTIONS:** 20th century institutions mismatched to 21st century missions; and
  - **HUMAN AND INTELLECTUAL CAPITAL:** inadequate investment in innovation
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# USDOT/FHWA Report

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- John Halkias/Bob Sheehan



# Subcommittees

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- Paper Review and Sessions
  - Mid-Year Meeting
  - Joint Subcommittee on Traffic Simulation Models
  - Committee Website
  - Committee Communications
  - Classic Paper Update
  - Research Problem Statements
  - Greenshields Prize
  - Special Report on Traffic Flow Theory
  - NEW Subcommittee on Operations Workforce Development
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# Paper Review & Sessions

- **TRB Annual Meeting Activities: AHB45 Committee on Traffic Flow Theory and Characteristics • January 2011**
- **Workshop 169**  
Simulation Modeling and Analysis of Effect of Operational Improvements on Greenhouse Gas Emissions: Integrating U.S. EPA MOVES Model and Other Power-Based Emission Models with Simulation Models  
Sunday January 23, Shoreham Palladian
- **Committee Meeting**  
Tuesday January 25 1:30-5:30 PM Marriott Washington B5
- **SimSub Meeting**  
Monday January 24 7:30-9:30 PM Marriott Wilson B & C
- **Podium Session 361: Traffic Estimation and Control Methods**  
Monday January 24 3:45-5:30 PM Marriott Thurgood Marshall East
- **Podium Session 601: Microscopic Models of Car Following and Lane Changing**  
Tuesday January 25 7:30-9:30 PM Marriott Thurgood Marshall South
- **Podium Session 709: Driver Behavior and Traffic Microsimulation**  
Wednesday January 26 2:30-4:00 PM Marriott Thurgood Marshall East
- **Podium Session 743: Macroscopic Properties of Traffic Flow**  
Wednesday January 26 4:30-6:00 PM Marriott Thurgood Marshall East
- **Poster Session 603: Research in Traffic Flow Theory and Characteristics Part 1**  
Tuesday January 25 7:30-9:30 PM Marriott Salon 2
- **Poster Session 663: Research in Traffic Flow Theory and Characteristics Part 2**  
Wednesday January 25 9:30 AM-12 Noon Marriott Salon 2

<b>Annual Meeting</b>	<b>2011</b>	<b>2010</b>	2009	2008	2007	2006	2005	2004	2003	2002	2001
<b>Papers Received</b>	<b>119</b>	<b>101</b>	92	82	88	70	69	80	40	42	25
Presentation only	22	13		7	9	7	3				
Publication only	1	4		2	2	5	2			3	
Present and publish	96	84		73	77	58	64				
<b>Submitted for Presentation</b>	<b>118</b>	<b>97</b>	<b>87</b>	<b>81</b>	<b>86</b>	<b>70</b>	<b>67</b>	<b>75</b>	<b>40</b>	<b>39</b>	
Lectern Sessions	4	4	4	4	4	4	4	4	4	4	
Lectern Papers	20	20	20	20	20	20	20	20	19	19	
Poster Sessions	2	2	2	2	2	2	2	2	0	0	
Poster Papers	60	40	39	33	39	32	25	30	0	0	
Subtotal	80	60	59	53	59	52	45	52	19	19	
Percent Accepted	67%	62%	68%	65%	69%	74%	67%	69%	48%	49%	
Rejected	38	37	28	28	27	18	22	23	21	20	
<b>Submitted for Publication</b>	<b>97</b>	<b>88</b>	<b>78</b>	<b>76</b>	<b>79</b>	<b>63</b>	<b>66</b>	<b>71</b>	<b>40</b>		
Accepted	2	0		1				4			
Revise and re-review	35	0	14	19	16	15		20	15		
To be determined	0	31	29	18	29	21		16			
Subtotal	37	31	43	38	45	36	42	40	15		
Publication Slots	~30	~25	~23	~21	~22	~17	~21	~24	~12		
Acceptance Rate	31%	28%	29%	28%	28%	27%	30%	30%	30%		
Rejected	49	57	35	38	34	27	24	31	28		
<b>Reviews</b>											
Assigned	568	441	394	332			269	356	200		
Assigned/paper	4.8	4.4	4.3	4.0			3.9	4.5	5		
Received	481	394	360	315			248	317	120		
Received/paper	4.04	3.9	3.9	3.8			3.6	4.0	3		
Response rate	85%	89%	90%	95%			92%	89%			
TFT Reviewers		189	150	140							
Number of Reviews		1-6									
Average		2.2									
TFT Reviewer Pool	310+	282									
Number of Reviews		1-34									
Average		6.2									
Total Reviews		1500									
<b>Friends Email List</b>	<b>404</b>	<b>343</b>									



# Mid-Year Meeting

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# Mid-Year Meeting

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**July 7-9 Annecy France**

**<http://www.tft2010.inrets.fr/>**

**Thank you to the local organizing committee**

**Christine Buisson**

**Nicolas Chiabaut**

**Victor Knoop**

**Ludovic Leclercq**

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# Mid-Year Meeting

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Proposal for Summer 2012

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# SimSub

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## SimSub Website

<http://sites.google.com/site/trbcommitteeahb45/>

Sunday Simulation Workshop: "Simulation Modeling and Analysis of the Effect of Operational Improvements on Greenhouse Gas Emissions: Integrating the EPA MOVES Model and other Power-Based Emission Models with Simulation Models"

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# Website

- News Items and RSS Feed automatically feeds Facebook  
<http://www.tft.pdx.edu/news.php>
- Revised 2001 Monograph: 31 sold, 322+ downloaded
- Greenshields Symposium 2008 *TR Circular – Status?*
- Newell monographs online



**AHB45**  
**Committee on Traffic Flow Theory & Characteristics**  
 Transportation Research Board  
 National Academy of Sciences

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- FRIENDS
- MEETINGS
- DOCUMENTS
- LINKS
- CONTACT
- NEWS

Subscribe to our RSS feed

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Also please encourage your students to attend this exciting interactive session on creating the future of transportation (students only): **U.S. DOT Senior Level Dialogue With Transportation Students**  
 Tuesday January 25 5:30-6:30 PM Marriott Washington B5



TRB 2011 Workshop on Active Transportation and Demand Management • January 2011

THE NATIONAL ACADEMIES  
 ALIANS TO THE MISSION IN SCIENCE, ENGINEERING, AND MEDICINE

The purpose of this workshop is to introduce Active Transportation and Demand Management (ATDM) and identify and discuss potential research areas. The workshop will explain the FHWA ATDM program, review major hurdles encountered by different ATDM deployments, and discuss the evolutionary path of ATDM to stimulate discussion and identification of potential research needs. The workshop will be held on Sunday, January 23, 2011, 9:00 AM to noon at Shoreham Hotel.



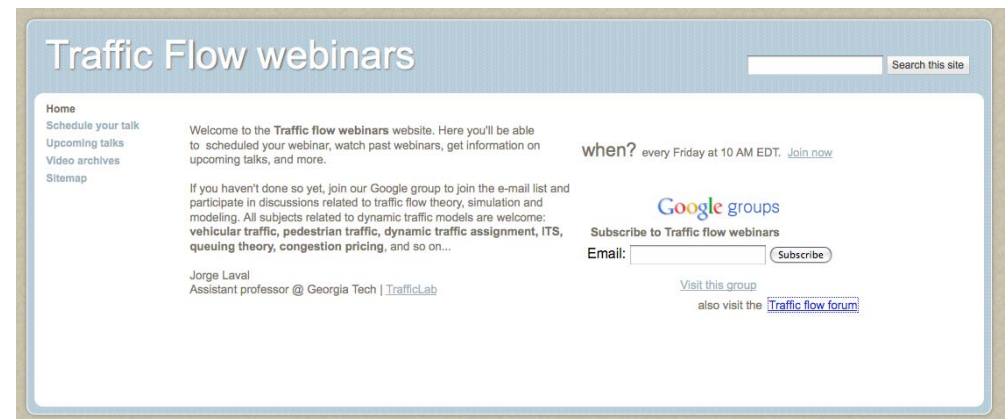
Inputs Requested for Annual SimSub Newsletter • December 2010

In preparation for the upcoming TRB meeting, it is time to prepare the (annual) SimSub newsletter. Please visit the SimSub website - <http://sites.google.com/site/committeeahb45/welcome> - to see copies of previous newsletters. Task Group leaders have been asked to send descriptions of their group's activities to the subcommittee. In addition, it is always helpful to have articles that describe how simulation models are being used to plan, design, and operate traffic networks. Please take time to send the subcommittee material that you think might be relevant. The goal is to send out the newsletter, electronically, on Jan 14. Thanks for your interest in and support for SimSub.



# Committee Communications

- TFT Facebook Page: 189 fans
- Student Interest Group: 32 members  
<http://tftcsig.ning.com/>
- GA Tech Traffic Flow Webinars  
[www.webinars.jltraffic.com/](http://www.webinars.jltraffic.com/)





# Classic Papers Update

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# Research Problem Statements

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# TFT Statements (1)

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- Investigation of synchronized flow and modeling of instability in flow
- Driver behavior under different congestion levels
- Influence of lane discipline on capacity
- Role of anticipation in microscopic driver behavior
- Using of trajectory data in model calibration and validation
- Modeling vehicle/pedestrian environment
- Probabilistic description (uncertainty) of road capacity
- Capacity and travel behaviors at bottlenecks
- Traffic flow theory in emergency and evacuation cases
- Psychological factors and their effect on traffic flow

# TFT Statements (2)

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- Gap acceptance behavior of different types of drivers
- Model the interaction of cars and trucks (longitudinal and lateral)
- Emission modeling as related to traffic characteristics
- Green flow – What flow is most “green”
- Fuel consumption modeling as related to traffic characteristics
- Developing microscopic crash prediction models
- Use of vehicle probe data to develop traffic flow model
- “Simulation abuse:” a collection of bloopers instead of a collection of successes



# TFT Statements (3)

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- Calibration, verification and validation of micro simulation models: guidelines and data needs
- Difference in characteristics of traffic among US and European Freeways
- Effect of longer cycle length on flow

# Simulation Survey TFT-Related

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- Data needs for calibration
- Sensitivity of simulation model results to the degree of calibration
- Procedures and guidelines for calibration and validation of simulation/DTA models
- Standards of simulation program Performance measures
- **Develop case studies and modeling handbook**
- Work zone modeling
- Incident modeling
- Driver behavior under different congestion levels
- Air quality, noise, and fuel consumption modeling
- Effect of geometric design and sight restrictions

# Simulation Survey TFT-Related

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- Modeling of roundabout
- Improved Traffic Flow Models for Mesoscopic Simulation Modeling
- The effect of emerging IntelliDrive technologies.
- Effect of mixed vehicle types (trucks, trains, buses, etc.)
- Evaluation of safety based on simulation results
- Traveler behaviors during emergency events
- Effect of weather conditions (visibility/pavement conditions)

# Next Steps

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- Each member select 2 topics as the most important topics
- Scores will be given to the statements based on the number of votes
- Identify the top four statement
- Discuss in the annual meeting
  - Topics that are important but did not appear in the top four
  - Does the topic requires additional research
  - etc.
- Write statements for the four selected problems
- Engage with possible funding sources in the U.S. and Europe



# Greenshields Prize

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# Special Report on TFT

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# New Section Level Subcommittee

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- Operations Workforce Development (W. Kittelson, chair) – need volunteer?



# Liaison With Other Committees

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# International Liaison

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# Future Midyear Meetings

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- 6<sup>th</sup> ISHC – June 28-July 1, 2011 Stockholm, Sweden
  - 2011 ISTTT Berkeley
  - 2012 U.S. - joint meeting w/HCQS, Florida?
  - 2013 ISTTT Berlin
  - 2014 International - ideas?
  - 2015 ISTTT Kobe
  - 2016 U.S. - ideas?
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# New Business

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- Triennial Strategic Plan 2011-2014: Due August 1, 2011 (5-6 pages)  
– need volunteer?
  - 2012 Meeting Call for Papers
  - TFTC Annual Meeting Paper/Presentation/Poster Webinars – Jorge Laval
  - Other Items
-



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Adjourn	All Attendees



# Adjourn

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