

# Call for Abstracts

Traffic and Granular Flow Conference  
Washington, DC, USA, 19-22 July 2017



## Conference

The Conference on Traffic and Granular Flow (TGF) brings together international researchers from different fields (ranging from physics to computer science and engineering) to discuss the latest developments in different built and/or natural systems. The twelfth edition of this international conference will be held for the first time on the American Continent between the 19th of July and the 22nd of July, 2017. The conference is hosted by the George Washington University (GW) Center for Intelligent Systems Research and is supported by the Transportation Research Board (TRB) AHB45(3) Subcommittee on Traffic Flow Modeling for Connected and Automated Vehicles. The conference activities will be conducted at the GW main campus, Washington, DC, USA.

All papers accepted for a poster or oral presentation will appear in the book of proceedings published by Springer. A selection of authors will be invited to publish an extended version of their papers in a special (journal) issue. The conference is set up for easy exchange of scientific ideas between researchers, experienced and starting PhD Students. This allows to explore and show opportunities for interdisciplinary research.

## Topics: From Molecular Interactions to Internet of Things and Smart Cities:

### **The Role of *Technology* in the Understanding and the Evolution of Particle Dynamics**

Technology is altering the performance of different systems and allowing scientists and engineers to observe the corresponding individual particle dynamics. With advanced detection instrumentation, the movement of “particles” (molecules, nano-particles, pedestrians, drivers/travelers, ...etc.) is accurately characterized and monitored. Moreover, the connections between these particles are altered in order to produce more desired behaviors. As an example, materials are being studied (at the molecular and/or nano-levels) and altered for energy harvesting applications. Moreover, different generations of connected and automated vehicles are being researched and introduced to the market in order to reach a more efficient and safer transportation system.

Given the above technology-oriented theme, the conference topics cover, but are not limited to, the following areas:

- Connected (i.e. Vehicle to Vehicle – V2V and Vehicle to Infrastructure – V2I communication) and Automated Vehicles (CAVs)
- Intermodal urban traffic
- Granular flow and dynamics of granular materials (jamming, force networks, dense and intermittent flows, friction)
- Pedestrian detection and modeling
- Evacuation dynamics
- Collective motion in biological systems (swarm dynamics, molecular motors, social insects)
- Nano-particles and molecular dynamics: emerging properties of materials.
- Complex networks and their dynamics (transportation networks, Internet, epidemics, social networks)
- Intelligent traffic systems (ITS)
- Internet of Things (IoT)

## Organization:

The conference is organized by the Transportation team of the George Washington University. The organization committee is led by Samer Hamdar:

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## Important Dates:

- 1 September 2016: Call for Abstracts
- 31 March 2017: Deadline of Abstract Submission
- 01 May 2017: Notification of Acceptance
- 29 May 2017: End of Early Bird Registration
- 03 July 2017: End of Registration
- 19- 22 July 2017: Conference
- 02 October 2017: Full paper submission deadline



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