# MSWiM 2015

## 18th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile

Cancun, Mexico - November 2nd - 6th, 2015

# TECHNICAL PROGRAM

Association for Computing Machinery

*Advancing Computing as a Science & Profession*

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SIGSIM

*ACM SIG on Simulation and Modeling*

# Program Schedule (at a glance)

| | Symposia and Workshops Day 1 | MSWiM Day 1 | MSWiM Day 2 | MSWiM Day 3 | Symposia and Workshops Day 2 |
|---|---|---|---|---|---|
| | MON - Nov 2 | TUE - Nov 3 | WED - Nov 4 | THU - Nov 5 | FRI - Nov 6 |
| 7:30 | Registration | Registration | Registration | Registration | Registration |
| 8:00 | | Welcome<br>Opening Address | | | |
| 8:30 | Tutorial | Keynote 1<br>Prof. Mario Gerla<br>(8:30 - 9:30) | Keynote 2<br>Dr. Pablo Vidales<br>(8:30 - 9:30) | | |
| 9:00 | MOBIWAC<br>Q2SWINet | | | Session 9<br>Wireless Networks<br>(9:00 - 10:45) | DIVANET<br>PE-WASUN |
| 9:30 | | Session 1<br>Wireless Communication (I)<br>(9:30 - 10:45) | Session 5<br>Delay Tolerant and Opportunistic Networks<br>(9:30 - 10:45) | | |
| 10:00 | | | | | |
| 10:30 | | Coffee Break<br>(10:45 - 11:15) | Coffee Break<br>(10:45 - 11:15) | Coffee Break<br>(10:45 - 11:15) | |
| 11:00 | | | | | |
| 11:30 | | Session 2<br>Mobile and Vehicular Ad Hoc Networks<br>(11:15 - 12:30) | Session 6<br>Wireless Sensor Networks (I)<br>(11:15 - 12:30) | Session 10<br>Performance Evaluation<br>(11:15 - 12:45) | |
| 12:00 | | | | | |
| 12:30 | | Lunch<br>(12:30 - 13:30) | Lunch<br>(12:30 - 13:45) | Lunch<br>(12:45 - 13:45) | |
| 13:00 | | | N² Women | | |
| 13:30 | | Session 3<br>Cognitive Radio Networks (I)<br>(13:30 - 14:20) | Session 7<br>Cellular Networks and Mobility Management<br>(13:45 - 15:30) | Session 11<br>Modeling and Simulation<br>(13:45 - 15:30) | |
| 14:00 | | | | | |
| 14:30 | | Panel Session<br>(14:20 - 15:30) | | | |
| 15:00 | | | | | |
| 15:30 | | Coffee Break<br>(15:30 - 16:00) | Coffee Break<br>(15:30 - 16:00) | Coffee Break<br>(15:30 - 16:00) | |
| 16:00 | | Session 4<br>Algorithms, Scheduling, and Optimization<br>(16:00 - 17:40) | Session 8<br>Cognitive Radio Networks (II)<br>(16:00 - 17:15) | Session 12<br>Network Coding and Data Forwarding<br>(16:00 - 17:15) | |
| 16:30 | | | | | |
| 17:00 | | | | Closing Remarks | |
| 17:30 | | | | | |
| 18:00 | | | | | |

MOBIWAC & Q2SWINet

Poster Session I and Demo Session I

Poster Session I and Demo Session II

DIVANET & PE-WASUN

**J. J. Garcia-Luna-Aceves**
University of California, Santa Cruz, USA
*General Co-Chair*

**Graciela Román Alonso**
Universidad Autónoma Metropolitana, México
*General Co-Chair*

## General Chairs' Welcome Message

Welcome to the 18th ACM International Conference on Modelling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM), held this year in astonishing Cancun, Mexico. Resting on the southeast of Mexico, Cancun is well known for its great weather, beautiful "cenotes" (sinkholes), white sand, and heavenly beaches. Cancun serves as an important archeological spot hosting part of the ancient Mayan civilization, and is still considered the gateway to "El Mundo Maya" (the Mayan World). The ruins of this world can be found in the neighborhoods of Cancun, such as Tulum or Chichen Itza, a UNESCO World Heritage site.

MSWiM has established itself over the years as a leading venue where some of the best research in the area of performance evaluation of wireless and mobile systems is presented, and this is no exception.

Putting together a high-quality conference like MSWiM is an enormous undertaking that requires a great team effort. We thank Falko Dressler, Antonio F. Loureiro, and Brahim Bensaou for putting together the technical program, from the Call for Papers to the final program selection and its schedule. We also acknowledge the volunteer efforts of TPC members and external reviewers whose expertise and hard work culminated in selecting excellent papers. This year, MSWiM presents strong poster and demonstration sessions, managed by Robson E. De Grande, the Poster Sessions Chair, and Laura-Marie Feeney, the Demo Session Chair. Finally, the technical program includes two distinguished keynotes addresses by outstanding experts, Prof. Mario Gerla (UCLA USA) and Dr. Pablo Vidales (IBM, Mexico).

To recognize excellence in research work in the field of Wireless Communications and Mobile Networking from academia and industry, the Reginald G. Fessenden Award has been established and is granted to a distinguished researcher for the remarkable contributions that have been in the area. In 2014, the award was presented to Professor Ian F. Akyildiz in recognition of his pioneering contributions for modeling and analysis of cellular and multihop wireless communications systems. The winner for this year will be announced at the MSWiM 2015 banquet dinner.

Four symposia will be held this year along with the main conference program, covering several specializations within mobile and wireless systems. The four symposia are: MobiWAC, PE-WASUN, DIVANET and Q2SWinet. Over the years, these symposia have become successful and quite competitive in their own right.

We also wish to express our gratitude to those who have managed the many practical details of the event. These individuals include Mirela Notare as the Publicity Chair; and Carolina Medina-Ramirez, Miguel Lopez-Guerrero, and Enrique Rodríguez-de-la-Colina for overseeing the local arrangements. We also express our appreciation to the MSWiM Steering Committee for their guidance and support, which helped us to bring together an exceptional conference program this year. Last but not least, we wish to thank our main sponsor, ACM SIGSIM.

We are very pleased to welcome you to MSWiM 2015 and beautiful Cancun. We are certain that you will find this year's event full of stimulating ideas and discussions.

## Technical Program Chairs' Welcome Message

The technical program of the 18th ACM International Conference on Modeling, Analysis and Simulation of Wireless and Mobile Systems (MSWiM), held in 2015 in Cancun, Mexico continues to build upon the high standards set by previous editions of the conference. In 2015, the call for papers attracted 142 registered papers in all areas of mobile and wireless systems. The submitted papers came from 36 countries. Members of the Technical Program Committee are affiliated to universities and industry in 17 countries spread over five continents, reflecting the truly international profile of MSWiM. The five most commonly listed topics for submissions to MSWiM'15 were:

- Performance evaluation and modeling
- Wireless network algorithms and protocols
- Wireless mesh networks, mobile ad hoc networks, Vehicular networks
- Algorithms and protocols for energy efficiency and power control
- Analytical models

The submissions included a large number of papers of very high quality making the selection process difficult and competitive. In the end, we selected 34 regular papers, which correspond to an acceptance rate of approximately 24%. An additional 12 short papers were recommended for the program owing to their quality and contribution. Among the regular papers, the following three paper were shortlisted as candidates for the best paper award:

- *"5G mmWave Module for the ns-3 Network Simulation,"* Marco Mezzavilla, Sourjya Dutta, Menglei Zhang, Mustafa Akdeniz, and Sundeep Rangan;
- *"Data Dependency based Parallel Simulation of Wireless Networks,"* Mirko Stoffers, Torsten Sehy, James Gross, and Klaus Wehrle;
- *"Minimizing Access Delay for M2M Traffic in Multi-RAT HetNets,"* Prajwal Osti, Samuli Aalto, and Pasi Lassila.

The winner among these three papers will be announced at the conference banquet, and will be reported in the proceedings of MSWiM 2016. At this point, we take the opportunity to congratulate the winners of the best paper award for MSWiM 2015:

- *"Impact of Node Mobility on Single-Hop Cluster Overlap in Vehicular Ad Hoc Networks,"* authored by Khadige Abboud and Weihua Zhuang.

**Falko Dressler**
University of Paderborn, Germany
*Program Chair*

**Antonio F. Loureiro**
Federal University of Minas Gerais, Brazil
*Vice Program Co-Chair*

**Brahim Bensaou**
Hong Kong University of Science and Technology, Hong Kong
*Vice Program Co-Chair*

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# Organizing Committee

**General Co-Chairs:**
**J. J. Garcia-Luna-Aceves**
University of California, Santa Cruz, USA
**Graciela Román Alonso**
Universidad Autónoma Metropolitana, México

**Program Co-Chairs:**
**Falko Dressler**
University of Paderborn, Germany
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**SungBum Hong**
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**Robson E. de grande**
DIVA Strategic Research Network, Canada

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**Laura Marie Feeney**
Swedish Institute of Computer Science, Sweden

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**Enrique Rodriguez De la Colina**
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**Publicity Chair:**
**Mirela A. M. Notare**
São José Municipal University, Brazil

**PhD Forum Chair:**
**Bjorn Landfeldt**
Lund University, Sweden

**Local Arrengement Co-Chairs:**
**Carolina Medina-Ramirez**
Universidad Autónoma Metropolitana, México
**Miguel Lopez-Guerrero**
Universidad Autónoma Metropolitana, México

## Program Committee

| | |
|---|---|
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| | |
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| Lorenzo Donatiello | Università di Bologna, Bologna, Italy |
| Jason Yi-Bing Lin | National Chiao-Tung University, Taiwan |
| William C. Y. Lee | AirTouch Inc. |
| Simon Taylor | Brunel University, UK |
| Robson E. De Grande | DIVA Research Network, Canada |

# Organizing Committee (Symposia/workshops)

## ACM MOBIWAC Symposium

| | |
|---|---|
| **General Chair:** | **Mirela S. M. Notare**<br>FAERO Technology University, Brazil |
| **Program Co-Chairs:** | **Ángel Cuervas**<br>Universidad Carlos III de Madrid, Spain<br>**Miguel López Guerrero**<br>Universidad Autónoma Metropolitana, México |
| **Poster/Demo Chair:** | **Martha María Montes de Oca Caliz**<br>UAM-Iztapalapa, Mexico |
| **Web Chair:** | **Gerson Rodríguez de los Santo**<br>Universidad Carlos III de Madrid, Spain |
| **Publicity Chair:** | **Alicia Triviño**<br>Universidad de Málaga, Spain |

## ACM PE-WASUN Symposium

| | |
|---|---|
| **General Chair:** | **Mónica Aguilar Igartua**<br>Universitat Politècnica de Catalunya, Spain |
| **Program Co-Chairs:** | **Carolina Tripp Barba**<br>Universidad Autónoma de Sinaloa, Mexico<br>**Cristina Alcaraz Tello**<br>University of Malaga, Spain |
| **Poster/Demo Chair:** | **Luis Urquiza Aguiar**<br>Universitat Politècnica de Catalunya, Spain |
| **Publicity Chair:** | **Xinyi Huang**<br>Fujian Normal University, China |

## ACM DIVANET Symposium

| | |
|---|---|
| **General Chair:** | **Robson De Grande**<br>NSERC DIVA Research Centre , Canada |
| **Program Co-Chairs:** | **Mirela S. M. Notare**<br>FAERO Technology University, Brazil<br>**Amir Darehshoorzadeh**<br>NSERC DIVA Research Centre , Canada |
| **Poster/Demo Chair:** | **Abdelghani Benmaddi**<br>NSERC DIVA Research Centre , Canada |
| **Publicity Chair:** | **Salil Kanhere**<br>The University of New South Wales, Australia |

## ACM Q2SWINET Symposium

| | |
|---|---|
| **General Chair:** | **Peter Mueller**<br>IBM Zurich Research Laboratory, Switzerland |
| **Program Co-Chairs:** | **Luca Foschini**<br>University of Bologna, Italy<br>**Richard Yu**<br>Carleton University, Ottawa - Canada<br>**Graciela Román Alonso**<br>Universidad Autónoma Metropolitana, Mexico |
| **Publicity & Web Chair:** | **Alessandro Pernafini**<br>University of Bologna, Italy |

## Tuesday, November 3rd (8:00 - 9:30 AM)

**Title:** VANET Services, Autonomous Vehicles and the Mobile Cloud

**Dr. Mario Gerla**
Professor at University of California
Los Angeles, USA

**Abstract:**
As vehicles will soon become network connected, new vehicle applications are emerging, from navigation safety to location aware content distribution, urban surveillance and intelligent transport. Autonomous vehicles stand out as important players, with plenty of sensors, memory and processing power. The richness of on-board resources and the diversity of applications set the Vehicular ad Hoc Network (VANET) apart from conventional MANETs and introduce new challenges in the services they provide. First, it becomes apparent that safe navigation in a future with autonomous car platoons, say, will demand efficient, low latency V2V. Moreover, other applications (eg, surveillance, traffic management, etc) will require a degree of coordination not possible with the conventional Internet Cloud. To this end, low latency cooperation can be best supported by a Mobile Computing Cloud (MCC), where vehicles use V2V to propagate computation results, share resources and provide mobile services. This talk will revisit VANET applications and will propose a Vehicular Cloud platform along with representative mobile service examples.

**Short Bio:**
Dr. Mario Gerla is a Professor in the Computer Science Dept at UCLA. He holds an Engineering degree from Politecnico di Milano, Italy and the Ph.D. degree from UCLA. At UCLA, he was part of the team that developed the early ARPANET protocols under the guidance of Prof. Leonard Kleinrock. He joined the UCLA Faculty in 1976. At UCLA he has designed network protocols including ad hoc wireless clustering, multicast (ODMRP and CODECast) and Internet transport (TCP Westwood). He has lead the ONR MINUTEMAN project, designing the next generation scalable airborne Internet for tactical and homeland defense scenarios. His team is developing a Campus Vehicular Testbed. Parallel research activities are wireless medical monitoring using smart phones and cognitive radios in urban environments. He is active in the organization of conferences and workshops, including MedHocNet and WONS. He serves on the IEEE TON Scientific Advisory Board. He became IEEE Fellow in 2002, was recently recognized with the MILCOM Technical Contribution Award in 2011, the IEEE Ad Hoc and Sensor Network Society Achievement Award in 2011 and the ACM Sigmobile Outstanding Contribution Award in 2015.

## Wednesday, November 4th (8:00 - 9:30 AM)

**Title:** Unleashing the True Power of Mobile Systems: Big Data and Analytics

**Dr. Pablo Vidales**
IBM
Mexico

**Abstract:**
Mobile systems have continuously evolved in the last years. However, user demand really smart phones that will assist them in daily activities. The new developments in processing and analyzing data are a new chance to make a quantum jump in mobile systems. Every two years the available data duplicates and in combination with existing machine learning and unstructured data analysis closed doors have been open. Today we can really personalized mobile applications to meet the specific needs of each customer, we have more than enough data to develop true context aware mobile solutions; it is just a matter of connecting the dots. This keynote will explore the challenge and opportunities that Big Data and Advanced Analytics are facing, and will present some examples of how we can combine the power of processing and analyzing unstructured and structure data to unleash the true power of mobile systems.

**Short Bio:**
Dr. Pablo Vidales has a two Bachelor in Science degrees, one in Computer Science and one in Telecommunications from ITAM, Mexico. He got his Master Degree in the University of Cambridge in 2002 and his PhD in 2005. Then, he moved to Berlin, where he did a 2-year Postdoc and continue working for the Deustche Telekom R&D Labs in the area of mobile and distributed systems. During his time in Germany, Dr. Vidales also studied the Executive Program on Strategy and Innovation in the MIT Sloan Business School. Currently he is Associate Professor in ITAM. In 1999, Dr. Vidales founded Letsmap, a startup in the area of mobile services and he also co-founded two spin offs from Deutsche Telekom in the same field. He came back to Mexico in 2010 and since then he has been working in executive positions, leading technology innovation transformational programs for the following companies: T-Systems, Grupo Nacional Provincial, as CIO in RSA Seguros and since May 2014 he took a new challenges as the Executive Lead for LATAM in Advanced Analytics, collaborating with IBM. Pablo is passionate about Innovation and blue sky technology, and in how this can be applied in the private industry to improve our lives. He believes that big data and analytics will unleash the true power of mobile systems.

# MSWiM Conference Technical program

## Monday, November 2nd

**[7:30 AM]** Registration Opening

**[All Day]** Concurrent Symposia/Workshops I
*(check individual Symposia/Workshops Schedules)*

## Tuesday, November 3rd

**[7:30 AM]** Registration Opening

**[8:15 AM - 9:30 AM]** Welcome Address and Keynote Speaker 01

***Dr. Mario Gerla***
***(VANET Services, Autonomous Vehicles and the Mobile Cloud)***

**[All Day]** Concurrent Symposia/Workshops II
*(check individual Symposia/Workshops Schedules)*

**[9:30 AM - 10:45 AM]** Session 1: Wireless Communication (I)

***Deep Inspection of the Noise in WiFi Time-of-Flight Echo Techniques***
Domenico Giustiniano (IMDEA Networks Institute, Spain); Theodoros Bourchas and Maciej Bednarek (ETH Zurich, Switzerland); Vincent Lenders (Armasuisse, Switzerland)
***Delay Analysis for Wireless Fading Channels with Finite Blocklength Channel Coding***
Sebastian Schiessl (KTH Royal Institute of Technology, Sweden); James Gross and Hussein Al-Zubaidy (Royal Institute of Technology (KTH), Sweden)
***Mechanisms for Multi-Packet Reception Protocols in Multi-Hop Networks***
Ke Li, Ioanis Nikolaidis and Janelle Harms (University of Alberta, Canada)

**[10:45 AM - 11:15 AM]** Coffee Break

**[11:15 AM - 12:30 PM]** Session 2: Mobile and Vehicular Ad Hoc Networks

***Traversal Strategies for Wireless Power Transfer in Mobile Ad-Hoc Networks***
Orestis Evangelatos, Constantinos Marios Angelopoulos, Julia Buwaya and Jose Rolim (University of Geneva, Switzerland)
***The Geometry-Based Statistical Modeling of MIMO Mobile-to-Mobile Channels Revisited***
Carlos A. Gutiérrez and José T. Gutiérrez-Mena (Universidad Autonoma de San Luis Potosi, Mexico); Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico); Daniel Ulises Campos-Delgado (Universidad Autonoma de San Luis Potosi, Mexico)
***Filling the gaps of vehicular mobility traces***
Fabrício Aguiar Silva (Federal University of Minas Gerais, Brazil); Clayson Celes (UFMG, Brazil); Azzedine Boukerche (University of Ottawa, Canada); Linnyer Beatrys Ruiz (State University of Maringá & INCT NAMITEC, Brazil); Antonio A.F. Loureiro (Federal University of Minas Gerais, Brazil)

**[12:30 PM - 1:30 PM]** Lunch Break

**[1:30 PM - 5:40 PM]** Poster Session I

**[1:30 PM - 2:20 PM]** Session 3: Cognitive Radio Networks (I)

***Rendezvous in Cognitive Radio Ad-Hoc Networks with Channel Ranking***
Akbar Hossain and Nurul I Sarkar (Auckland University of Technology, New Zealand)
***Optimal Rendezvous Strategies for Different Environments in Cognitive Radio Networks***
Haisheng Tan (Jinan University, Guangzhou, P.R. China); Jiajun Yu (Tsinghua University, P.R. China); Hongyu Liang (Facebook, Inc., USA); Rui Wang (The South University of Science and Technology of China, P.R. China); Zhenhua Han (South University of Science and Technology of China, P.R. China)

**[2:20 PM - 3:30 PM]** Panel Session

**[3:30 PM - 4:00 PM]** Coffee Break

**[4:00 PM - 5:40 PM]** Session 4: Algorithms, Scheduling, and Optimization

***RFT: Identifying Suitable Neighbors for Concurrent Transmissions in Point-to-Point Communications***
Jin Zhang (University of New South Wales, Australia); Andreas Reinhardt (TU Clausthal, Germany); Wen Hu (the University of New South Wales (UNSW) & CSIRO, Australia); Salil S Kanhere (The University of New South Wales, Australia)
***Broadcast strategies in Wireless Body Area Networks***
Wafa Badreddine (University Paris 6, France); Claude Chaudet (Telecom Paristech, France); Federico Petruzzi (LIP6, France); Maria Potop-Butucaru (University Paris 6, France)
***A Resilient Dynamic Gateway Selection Algorithm Based on Quality Aware Metrics for Smart Grids***
Igor Ribeiro, Victor Okabayashi and Diego Passos (Universidade Federal Fluminense, Brazil); Celio Albuquerque (Fluminense Federal University, Brazil)
***Modeling Multi-path TCP Throughput with Coupled Congestion Control and Flow Control***
Qingfang Liu and Ke Xu (Tsinghua University, P.R. China); Haiyang Wang (University of Minnesota at Duluth, USA); Lei Xu (Tsinghua University, P.R. China)

## Wednesday, November 4th

**[7:30 AM]** Registration Opening

**[8:15 AM - 9:30 AM]** Welcome Address and Keynote Speaker 02

***Dr. Pablo Vidales***
***(Unleashing the True Power of Mobile Systems: Big Data and Analytics)***

**[9:30 AM - 10:45 AM]** Session 5: Delay Tolerant and Opportunistic Networks

***Two-way Communications in Cognitive Personal Area Networks***
Md Mizanur Rahman, Jelena Mišić and Vojislav B. Mišić (Ryerson University, Canada)
***Two Hops or More: On Hop-Limited Search in Opportunistic Networks***
Suzan Bayhan (University of Helsinki, Finland); Esa Hyytiä (Aalto University, Finland); Jussi Kangasharju (University of Helsinki, Finland); Joerg Ott (Technische Universität München, Germany)
***Modeling and Analysis of Opportunistic Routing in Low Duty-Cycle Underwater Sensor Networks***
Rodolfo W. L. Coutinho (Federal University of Minas Gerais, Brazil); Azzedine Boukerche (University of Ottawa, Canada); Luiz F. M. Vieira (Universidade Federal de Minas Gerais, Brazil); Antonio A.F. Loureiro (Federal University of Minas Gerais, Brazil)

**[10:45 AM - 11:15 AM]** Coffee Break

**[11:15 AM - 12:30 PM]** Session 6: Wireless Sensor Networks (I)

***Autoregressive Integrated Model for Time Synchronization in Wireless Sensor Networks***
Wasif Masood (Alpen Adria University Klagenfurt & Lakeside Labs, Austria); Jorge F. Schmidt (Alpen-Adria-Universität Klagenfurt, Austria)
***Design and Evaluation of an RPL-based Multi-Sink Routing Protocol for Low-Power and Lossy Networks***
Kevin Andrea and Robert Simon (George Mason University, USA)
***An Efficient Burst Transmission Scheme for Wireless Sensor Networks***
Zeeshan Ansar (TU Dresden Germany, Germany); Jianjun Wen (Technische Universität Dresden, Germany); Eyuel Ayele (Technical University of Dresden, Germany); Waltenegus Dargie (Technische Universität Dresden, Germany)
***Connected P-Percent Coverage in Wireless Sensor Networks based on Degree Constraint Dominating Set approach***
Habib Mostafaei (Urmia Islamic Azad University, Iran); Morshed Chowdhury (Deakin University-Melbourne, Australia); Rafiqul Islam (Senior Lecturer, Australia); Hojjat Gholizadeh (Amirkabir University of Technology, Tehran, Iran)

**[12:30 PM - 1:45 PM]** Lunch Break

**[1:45 PM - 3:30 PM]** Poster Session II

**[1:45 PM - 3:30 PM]** Session 7: Cellular Networks and Mobility Management

***Minimizing access delay for M2M traffic in multi-RAT HetNets***
Prajwal Osti and Samuli Aalto (Aalto University, Finland); Pasi Lassila (Helsinki University of Technology, Finland)
***On the Design and Evaluation of Producer Mobility Management Schemes in Named Data Networks***
Hesham Farahat and Hossam S. Hassanein (Queen's University, Canada)
***Stochastic Geometry Modeling of Cellular Networks: Analysis, Simulation and Experimental Validation***
Wei Lu (L2S UMR 8506 & CNRS - Supélec - Université paris Sud 11, France); Marco Di Renzo (French National Center for Scientific Research (CNRS), France)
***SDN Based Control Plane Extensions for Mobility Management Improvement in Next Generation ETArch Networks***
Felipe Sampaio Dantas da Silva (Federal Institute of Education, Science and Technology of Rio Grande do Norte, Brazil); Augusto J. Venancio Neto (Federal University of Rio Grande do Norte & Centro de Ciências Exatas da Terra, Brazil); Douglas Maciel (Federal University of Rio Grande do Norte, Brazil); José Castillo Lema (Universidade de São Paulo, Spain); Flavio de Oliveira Silva (Federal University of Uberlândia, Brazil)
***Multiple Access Class Barring factors Algorithm for M2M communications in LTE-Advanced Networks***
Meriam Bouzouita (Sup'com, Tunisia); Yassine Hadjadj-Aoul (University of Rennes 1, France); Nawel Zangar (Université of El MANAR & MEDIATRON Laboratory, Tunisia); Gerardo Rubino (INRIA, France); Sami Tabbane (Ecole Superieure des Communications de Tunis, Tunisia)

**[3:30 PM - 4:00 PM]** Coffee Break

**[4:00 PM - 5:15 PM]** Session 8: Cognitive Radio Networks (II)

***COExiST: Revisiting Transmission Count for Cognitive Radio Networks***
Guillaume Artero Gallardo (University of Toulouse, France); Jean-Gabriel Krieg (University of Toulouse & ALSETT, France); Gentian Jakllari (University of Toulouse, France); Lucile Canourgues (Rockwell Collins, France); André-Luc Beylot (University of Toulouse, France)
***Communication and Block Game in Cognitive Radio Networks***
Haosen Pu and Zhaoquan Gu (Tsinghua University, P.R. China); Qiang-Sheng Hua and Hai Jin (Huazhong University of Science and Technology, P.R. China)
***Protecting Location Information in Collaborative Sensing of Cognitive Radio Networks***
Yunlong Mao (Nanjing University, P.R. China); Tingting Chen (California State Polytechnic University, Pomona, USA); Yuan Zhang, Tiancong Wang and Sheng Zhong (Nanjing University, P.R. China)

## Thursday, November 5th

**[7:30 AM]** Registration Opening

**[All Day]** Concurrent Symposia/Workshops III
*(check individual Symposia/Workshops Schedules)*

**[9:00 AM - 10:45 AM]** Session 9: Wireless Networks

***Rethinking the Importance of Accurately Simulating the Runtimes of Firmware used in Wireless Sensor Networks***
Georg Möstl (Johannes Kepler University & Institute for Integrated Circuits, Austria); Andreas Springer (Johannes Kepler University Linz, Austria)
***The Effect of Emerging Traffic Patterns on High Speed Wireless LANs***
Emma Fitzgerald and Bjorn Landfeldt (Lund University, Sweden)
***Phase-based Ranging of RFID Tags with Applications to Shopping Cart Localization***
Jihoon Ryoo and Samir R. Das (Stony Brook University, USA)

***EasiPCC: Popularity-aware Collaborative Caching for Web Requests in Low-Duty-Cycle Sensor Networks***
Chenda Hou (University of Chinese Academy of Sciences, P.R. China); Dong Li and Li Cui (Institute of Computing Technology, Chinese Academy of Sciences, P.R. China)

**[10:45 AM - 11:15 AM]** Coffee Break

**[11:15 AM - 12:45 PM]** Session 10: Performance Evaluation

***Anticipatory Admission Control and Resource Allocation for Media Streaming in Mobile Networks***
Nicola Bui (IMDEA Networks Institute, Spain); Ilaria Malanchini (Bell Labs, Alcatel-Lucent, Germany); Joerg Widmer (IMDEA Networks Institute, Spain)
***Potential Game based Energy Efficient Resource Allocation in HeNB Networks***
Ying Wang, Xiangming Dai, Jason Min Wang and Brahim Bensaou (The Hong Kong University of Science and Technology, Hong Kong)
***Game-theoretic Analysis of Computation Offloading for Cloudlet-based Mobile Cloud Computing***
Xiao Ma and Chuang Lin (Tsinghua University, P.R. China); Xudong Xiang (University of Science and Technology Beijing, P.R. China); Congjie Chen (Tsinghua University, P.R. China)
***Energy-Efficient Model for Overlay Cognitive Communications***
Salvador Perez-Salgado (Metropolitan Autonomous University & Campus Iztapalapa, Mexico); Enrique Rodriguez-Colina (Universidad Autónoma Metropolitana Iztapalapa, Mexico)

**[12:45 PM - 1:45 PM]** Lunch Break

**[1:45 PM - 3:30 PM]** Session 11: Modeling and Simulation

***5G mmWave Module for the ns-3 Network Simulator***
Marco Mezzavilla (NYU Poly, USA); Sourjya Dutta (New York University & Polytechnic School of Engineering, USA); Menglei Zhang (NYU Poly, USA); Mustafa Akdeniz and Sundeep Rangan (New York University, USA)
***Data Dependency based Parallel Simulation of Wireless Networks***
Mirko Stoffers and Torsten Sehy (RWTH Aachen University, Germany); James Gross (Royal Institute of Technology (KTH), Sweden); Klaus Wehrle (RWTH Aachen University, Germany)
***A Computing Profiling Procedure for Mobile Developers to Estimate Energy Cost***
Majid L Altamimi (King Saud University, Saudi Arabia); Sagar Naik (University of Waterloo, Canada)
***Modelling the Bandwidth Allocation Problem in Mobile Service-Oriented Networks***
Bo Gao, Ligang He and Chao Chen (University of Warwick, United Kingdom)
***Building a large dataset for Model-based QoE prediction in the mobile environment***
Lamine Amour (Paris Est Creteil University, France); Sami Souihi (University Paris Est UPEC, France); Said Hoceini and Abdelhamid Mellouk (UPEC, University Paris-Est Creteil Val de Marne, France)

**[3:30 PM - 4:00 PM]** Coffee Break

**[4:00 PM - 5:15 PM]** Session 12: Network Coding and Data Forwarding

***A Bloom Filter-Based Algorithm for Routing in Intermittently Connected Mobile Networks***
Jairo Sanchez-Hernandez (National Polytechnic Institute & Computer Research Center, Mexico); Rolando Menchaca-Mendez (Mexican National Polytechnic Institute, Mexico); Ricardo Menchaca-Mendez (Instituto Politécnico Nacional, Mexico); Jesús García Díaz (Centro de Investigación en Computación, Mexico); Mario E. Rivero-Angeles (Instituto Politecnico Nacional & CIC-IPN, Mexico); JJ Garcia-Luna-Aceves (University of California at Santa Cruz & Palo Alto Research Center, USA)
***Swift: A Hybrid Digital-Analog Scheme for Low-Delay Transmission of Mobile Stereo Video***
Dongliang He (University of Science and Technology of China, P.R. China); Chong Luo (Microsoft Research, P.R. China); Feng Wu (University of Science and Technology of China, P.R. China); Wenjun Zeng (Microsoft Research, P.R. China)
***An Efficient Transmission Method for Bulk Data Based on Network Coding in Delay Tolerant Network***
Wancheng Chen, Yuebin Bai, Jiaojiao Liang and Rui Wang (Beihang University, P.R. China)

## Friday, November 6th

**[7:30 AM]** Registration Opening

**[All Day]** Concurrent Symposia/Workshops IV
*(check individual Symposia/Workshops Schedules)*

## Symposia and Workshops

The 18th ACM MSWiM 2015 Conference will feature a number of concurrent Symposia and Workshops on emerging topics related to wireless networking and mobile computing.

**[MobiWAC 2015]** The 13th ACM International Symposium on Mobility Management and Wireless Access

**[PE-WASUN 2015]** The 12th ACM Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor, and Ubiquitous Networks

**[Q2SWinet 2015]** The 10th ACM Symposium on QoS and Security for Wireless and Mobile Networks

**[DIVANet 2015]** The 5th ACM Symposium on Development and Analysis of Intelligent Vehicular Networks and Applications

## ACM MOBIWAC Symposium

### Monday, November 2nd

**[9:00 AM - 9:10 AM]** Welcome Message

**[09:30 AM - 10:30 PM]** Session 1: Vehicular networks and applications

***Methodology to Events Identification in Vehicles Using Statistical Process Control on Steering Wheel Data (short)***
Arthur N. Assuncao (Federal University of Ouro Preto, Brazil); Fabio O. de Paula (Universidade Federal de Ouro Preto, Brazil); Ricardo Augusto Rabelo Oliveira (UFOP/DECOM, Brazil)
***Asymmetry Analysis of Inbound/Outbound Car Traffic Load distribution in Luxembourg***
Foued Melakessou (University of Luxembourg, Luxemburg); Thierry Derrmann (University of Luxembourg / SnT, Luxemburg); Thomas Engel (University of Luxemburg, Luxemburg)
***SLA: Speed and Location Aware LTE Scheduler for Vehicular Safety Applications***
Hosein Soleimani and Azzedine Boukerche (University of Ottawa, Canada)

**[10:30 AM - 11:00 AM]** Coffee Break

**[11:00 AM - 1:00 PM]** Session 2: WLAN access and MANET routing

***Intention sharing for medium access control in wireless LANs***
Emma Fitzgerald, Saeed Bastani and Bjorn Landfeldt (Lund University, Sweden)
***IMSN routing on Wi-Fi Direct enabled devices***
Ricardo Pagoto Marinho (Universidade Federal de Ouro Preto, Brazil); Urbano Menegato (Universidade Federal de Ouro Preto - UFOP, Brazil); Ricardo Augusto Rabelo Oliveira (UFOP/DECOM, Brazil)
***Studying the effect of human mobility on MANET topology and routing: friend or foe?***
Adán Medrano-Chávez and Elizabeth Pérez-Cortés (Autonomous Metropolitan University, Mexico); Miguel Lopez-Guerrero (Universidad Autonoma Metropolitana, Mexico)
***Design and Implementation of a Software-Defined Integrated Wired-Wireless Network Testbed***
Khalil El-Khatib (University of Ontario Institute of Technology , Canada)

**[1:00 PM - 2:00 PM]** Lunch Break

**[2:00 AM - 3:50 PM]** Session 3: Solutions based on adaptive systems

***Smart mm-Wave Beam Steering Algorithm for Fast Link Re-Establishment under Node Mobility in 60 GHz Indoor WLANs***
Avishek Patra, Ljiljana Simić and Petri Mähönen (RWTH Aachen University, Germany)
***A Scheduling Algorithm of Cell Zooming for Energy Efficiency in Disasters***
Akira Uchiyama, Kazumasa Kitada and Teruo Higashino (Osaka University, Japan)
***VARSA: An Efficient VAriable Radius Sensor Activation Scheme for Target Tracking using Wireless Sensor Networks***
Adel Mohammad Shafiei, Amir Darehshoorzadeh and Azzedine Boukerche (University of Ottawa, Canada)
***Towards a decision approach for autonomic systems adaptation (short)***
Imen Abdennadher (University of Sfax, Tunisia); Ismael Rodriguez (Univ de Toulouse, Tunisia); Mohamed Jmaiel (ENIS, Tunisia); Mariano Vargas-Santiago (Intituto Nacional de Astrofísica Óptica y Electrónica, México, Mexico); Saúl E. Pomares Hernández (Intituto Nacional de Astrofísica Óptica y Electrónica, Mexico

**[3:50 PM - 4:20 PM]** Coffee Break

**[4:20 PM - 5:50 PM]** Session 4: Techniques for the support of services in wireless personal communication devices

***All Your Root Checks are Belong to Us***
Nathan S. Evans, Azzedine Benameur and Yun Shen (Symantec, USA)
***An efficient Cloud-Based Iris Recognition Solution for Mobile Devices***
Frances Santos (UNICAMP, Brazil); Fabio Augusto Faria (UNIFESP, Brazil); Azzedine Boukerche (University of Ottawa, Canada); Leandro Aparecido Villas (UNICAMP, Brazil)
***Efficient Parameterized Methods for Physical Activity Detection using only Smartphone Sensors***
Christina Pavlopoulou (University of Patras & Computer Technology Institute, Greece); Gabriel Filios and Sotiris E. Nikoletseas (University of Patras and Computer Technology Institute, Greece)

**[5:50 PM - 6:00 PM]** Closure & Remarks

### Tuesday, November 3rd

**[8:15 AM - 9:30 PM]** Keynote Speach

***Keynote Speaker: Dr. Mario Gerla***
***(VANET Services, Autonomous Vehicles and the Mobile Cloud)***

**[9:30 AM - 10:00 AM]** Coffee Break

**[10:00 AM - 12:00 PM]** Poster Session and Panel Discussion

# Symposium/Workshop Technical Program

## ACM Q2SWINET Symposium

### Monday, November 2nd

**[7:30 AM]** Registration Opening

**[8:45 AM - 9:15 AM]** Welcome Message

**[09:15 AM - 10:30 PM]** Session 1: Emerging Trends in Mobile Systems I

***An Enhanced Quality of Context Evaluating Approach in an Ambient Assisted Living e-Health Platform***
Mario A R Dantas (UFSC, Brazil); Débora Cabral Nazário and Jose Todesco (Federal University of Santa Catarina, Brazil); Adroaldo de Andrade, Lucas Borges and Willian Ramos (UFSC, Brazil)
***Recommendations for IPsec Configuration on Homenet and M2M devices***
Daniel Migault (Ericsson, Canada); Tobias Guggemos (University of Munich, Germany); Daniel Palomares (Orange Business Services & Orange, France); Aurelien Wailly (Orange, France); Maryline Laurent (Institut Mines-Télécom, Télécom SudParis, France); Jean-Philippe Wary (Orange Labs, France)

**[10:30 AM - 11:00 AM]** Coffee Break

**[11:00 AM - 12:30 PM]** Session 2: Security in Wireless Networks I

***Autonomic Management of Replica Voting based Data Collection Systems in Malicious Environments***
Kaliappa Ravindran (City University of New York, USA); Arun Adiththan (City University of New York - CUNY Graduate Center, USA); Mohammad Rabby and Jinu Jose (City University of New York, USA)
***Spraying techniques for securing key exchange in large ad-hoc networks***
Ariel Stulman and Alan Stulman (Jerusalem College of Technology, Israel)
***On the Impact of Cross-Layer Information Leakage on Anonymity in Crowds***
Andriy Panchenko (University of Luxembourg, Luxemburg)

**[1:00 PM - 2:00 PM]** Lunch Break

**[2:00 PM - 3:00 PM]** Session 3: QoS and QoE for Wireless Networks and Systems I

***A Managing QoE Approach for Provisioning User Experience Aware Services Using SDN***
Madalena Silva (Federal University of Santa Catarina (UFSC), Brazil); Mario A R Dantas (UFSC, Brazil); Alexandre Gonçalves (Federal University of Santa Catarina (UFSC), Brazil); Alex Pinto (UFSC, Brazil)
***Quality Service Evaluation of Voice over Internet Protocol (VoIP) in WiMAX Networks based on IP/MPLS Environment***
Octavio Salcedo Parra (Universidad Distrital Francisco Jose de Caldas, Colombia); Brayan Steven Reyes Daza (Intelligent Internet Research Group & Universidad Distrital Francisco José de Caldas, Colombia)

**[3:50 PM - 4:20 PM]** Coffee Break

**[4:20 PM - 6:00 PM]** Session 4: Emerging Trends in Mobile Systems II

***A Proxy Gateway Solution to Provide QoS in Tactical Networks and Disaster Recovery Scenarios***
Alessandro Morelli (University of Ferrara, Italy); Rita Lenzi (Florida Institute for Human & Machine Cognition, USA); Cesare Stefanelli (University of Ferrara, Italy); Niranjan Suri (Florida Institute for Human & Machine Cognition & US Army Research Laboratory, USA); Mauro Tortonesi (University of Ferrara, Italy)
***Bounding Degrees on RPL***
Fadwa Boubekeur (University of paris 6 & LIP6, France); Paolo Medagliani (Huawei Technologies Co. Ltd., France); Lelia Blin (LIP6-University of Evry Val d'Essones, France); Rémy Leone (TELECOM ParisTech & Thales Communications & Security, France)
***Location Assisted Coding (LAC): Embracing Interference in Free Space Optical Communications***
Thai Duong and Duong Nguyen-Huu (Oregon State University, USA); Thinh Nguyen (Oregon State, USA)
***Noah: Keyed Noise Flooding for Wireless Confidentiality***
Sang-Yoon Chang (Advanced Digital Sciences Center (ADSC), Singapore); Jemin Lee (Singapore University of Technology and Design (SUTD), Singapore); Yih-Chun Hu (University of Illinois at Urbana-Champaign, USA)

### Tuesday, November 3rd

**[7:30 AM]** Registration Opening

**[8:15 AM - 9:30 PM]** Welcome Address and Keynote Speach

***Keynote Speaker: Dr. Mario Gerla***
***(VANET Services, Autonomous Vehicles and the Mobile Cloud)***

**[9:30 AM - 10:00 AM]** Coffee Break

**[10:00 AM - 12:00 PM]** Poster Session 5: QoS and QoE for Wireless Networks and Systems II

**[12:00 PM - 2:00 PM]** Lunch Break

**[2:00 AM - 4:00 PM]** Poster Session 6: Security in Wireless Networks II

**[4:00 PM - 4:30 PM]** Closing Session

## ACM DIVANET Symposium

### Thursday, November 5th

**[8:30 AM]** Registration Opens

**[8:45 AM - 9:00 AM]** Welcome Message from the Co-Chairs

**[9:00 AM - 10:00 AM]** Keynote Speach

***Keynote Speaker: Dr. Salil Kanhere***
***Title: Optimizing HTTP-Based Adaptive Streaming in Vehicular Environment using Markov Decision Process***

**[10:00 AM - 10:30 AM]** Coffee Break

**[10:30 AM - 12:00 PM]** Poster/Demos Session

**[12:00 PM - 2:00 PM]** Lunch Break

**[14:00 AM - 4:00 PM]** Session 1: Monitoring and Performance

***Scalable Transportation Monitoring using the Smartphone Road Monitoring (SRoM) System***
Sam Aleyadeh, Sharief M.A. Oteafy and Hossam S. Hassanein (Queen's University, Canada)
***HCI in VANET IR-CAS: Multimodal Interface for VANET Context Aware IR Systems***
Lobna Nassar, Parmit Chilana, Mohamed S. Kamel, Fakhri Karray (University of Waterloo, Canada)
***Improving the Performance of VANETs using Many-to-Many Communication***
Moumita Patra (Indian Institute of Technology Madras, India); Siva Ram Murthy (IIT Madras, India)
***Cooperative Spectrum Sensing with Trust Assistance for Cognitive Radio Vehicular Ad hoc Networks***
Zhexiong Wei and F. Richard Yu (Carleton University, Canada); Azzedine Boukerche (University of Ottawa, Canada)

### Friday, November 6th

**[8:30 AM - 10:00 AM]** Session 2: Smart Vehicles

***Towards Efficient Vehicle Classification in Intelligent Transportation Systems***
Abdul Jabbar Siddiqui, Abdelhamid Mammeri and Azzedine Boukerche (University of Ottawa, Canada)
***WhatIF Application: Moving Electrically without an Electric Vehicle***
Luca Bedogni (University of Bologna, Italy); Luciano Bononi (University of Bologna, Italy); Marco Di Felice (University of Bologna, Italy); Alfredo D'Elia (University of Bologna, Italy); Tullio Salmon Cinotti (University of Bologna, Italy)
***Geometry-Based Statistical Modeling of Non-Stationary MIMO Vehicle-to-Vehicle Channels***
José T. Gutiérrez-Mena and Carlos A. Gutiérrez (Universidad Autonoma de San Luis Potosi, Mexico); Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico); Daniel Ulises Campos-Delgado (Universidad Autonoma de San Luis Potosi, Mexico); Javier Vazquez Castillo (Center of Investigation and Advanced Studies of I. P. N. & CINVESTAV, Mexico)

**[10:00 AM - 10:30 AM]** Coffee Break

**[10:30 AM - 12:00 PM]** Session 3: Social Networks and Applications

***Towards In Time Music Mood-Mapping for Drivers: A Novel Approach***
Arun Sai Krishnan (UBC, Canada); Xiping Hu (The University of British Colombia, Canada); Jun-qi Deng (IEEE, Canada); Li Zhou (National University of Defense Technology, P.R. China); Edith C.-H. Ngai (Uppsala University & Division of Computer Systems, Sweden); Xitong Li (HEC Paris, France); Victor C.M. Leung (The University of British Columbia, Canada); Yu-Kwong Kwok (University of Hong Kong, Hong Kong)
***OnlineCruise: An Online Social Grouping Strategy for Vehicular Social Networks***
Saida Maaroufi (Ecole Polytechnique de Montréal, Canada); Samuel Pierre (Ecole Polytechnique de Montreal, Canada)
***Smartphone-based Architecture for Smart Cities***
James Conway-Beaulieu, Austin Athaide, Roozbeh Jalali, Khalil El-khatib (University of Ontario Institute of Technology, Canada)
***An Efficient Pseudonym Change Protocol Based on Trusted Neighbours for Privacy and Anonymity in VANETs***
Kahina Moghraoui (University of Quebec at Trois-Rivieres, Canada); Amar Bensaber Boucif (University of Quebec, Trois Rivieres, Canada)

**[12:00 PM - 2:00 PM]** Lunch Break

**[2:00 PM - 3:30 PM]** Session 4: Wireless Communications

***On the Provisioning of Vehicle-Based Public Sensing Services***
Sherin Abdelhamid, Hossam S. Hassanein and Glen Takahara (Queen's University, Canada)
***On the Provisioning of Vehicle-Based Public Sensing Services***
Sherin Abdelhamid, Hossam S. Hassanein and Glen Takahara (Queen's University, Canada)
***Connectivity Stability in Autonomous Multi-level UAV Swarms for Wide Area Monitoring***
Grégoire Danoy (University of Luxembourg, Luxemburg); Matthias R. Brust (University of Central Florida, USA); Pascal Bouvry (University of Luxembourg, Luxemburg)
***Spectrum Access Quality for Mobile Broadband Video Communications in Smart Cities***
Omneya MK Issa (Communications Research Centre Canada, Canada)

**[3:30 PM - 4:00 PM]** Discussion and Closing Remarks

# Symposium/Workshop Technical Program

## ACM PE-WASUN Symposium

### Thursday, November 5th

**[8:30 AM]** Registration Opens

**[9:00 AM - 10:00 AM]** Keynote Speach

***Keynote Speaker: Dr. Salil Kanhere***
***Title: Optimizing HTTP-Based Adaptive Streaming in Vehicular Environment using Markov Decision Process***

**[10:45 AM - 12:45 PM]** Session 1: Vehicular Ad Hoc Networks

***Reducing duplicate packets in unicast VANET communications***
Luis Urquiza Aguiar (Universitat Politècnica de Catalunya, Spain), Carolina Tripp-Barba (Universidad Autónoma de Sinaloa, Mexico) and Angel Romero Muir (Universitat Politècnica de Catalunya, Spain).
***Vehicular Cloud: Stochastic Analysis of Computing Resources in a Road Segment***
Tao Zhang (University of Ottawa, Canada), Robson De Grande (University of Ottawa, Canada) and Azzedine Boukerche (University of Ottawa, Canada).
***Understanding Interactions in Vehicular Networks Through Taxi Mobility***
Felipe Domingos Da Cunha (Universidade Federal de Minas Gerais, Brazil), Davidysson A. Alvarenga (PUC MINAS, Brazil), Aline C. Viana (INRIA, France), Raquel A. F. Mini (PUC MINAS, Brazil) and Antonio A. F. Loureiro (Universidade Federal de Minas Gerais, Brazil).
***DISCOVER: a unified protocol for data dissemination and collection in VANETs***
Ion Turcanu (University of Rome Sapienza, Italy), Pierpaolo Salvo (University of Rome Sapienza, Italy), Andrea Baiocchi (University of Rome Sapienza, Italy) and Francesca Cuomo (University of Rome Sapienza, Italy).

**[12:45 PM - 1:45 PM]** Lunch Break

**[2:00 PM - 4:00 PM]** Posters/Demos Sessions & Panel/Discussion

**[4:00 PM - 4:30 PM]** Coffee Break

### Friday, November 6th

**[8:00 AM]** Registration Opens

**[8:30 AM - 10:00 AM]** Session 2: Vehicular and Mobile Ad Hoc Networks

***Heuristic Methods in Geographical Routing Protocols for VANETs***
Luis Urquiza-Aguiar (Universitat Politècnica de Catalunya), Daniel Almeida (Universitat Politècnica de Catalunya), Carolina Tripp-Barba (Universidad Autónoma de Sinaloa, Mexico) and Mónica Aguilar Igartua (Universitat Politècnica de Catalunya).
***Performance evaluation of OPS-SAP PAPR reduction technique in OFDM systems in a wireless vehicular context***
Martha Cecilia Paredes ( Escuela Politécnica Nacional, Ecuador) and María Julia Fernández-Getino García (Universidad Carlos III de Madrid, Spain).
***Mechanisms for Improving the Scalable Video Streaming in Mobile Ad hoc Networks***
Wilder Eduardo Castellanos (Universitat Politècnica de València, Spain), Paola Guzmán(Universitat Politècnica de València, Spain), Pau Arce and Juan C. Guerri (Universitat Politècnica de València, Spain).

**[10:00 AM - 10:30 AM]** Coffee Break

**[10:30 AM - 12:30 PM]** Session 3: Wireless Ad Hoc Networks in Smart Cities

***Congestion Control Mechanisms for Unreliable CoAP Communications***
August Betzler (I2CAT, Spain), Carles Gomez (Universitat Politècnica de Catalunya, Spain) and Ilker Demirkol (Universitat Politècnica de Catalunya, Spain).
***Taking Benefit from the User Density in Large Cities for Delivering SMS***
Yannick Léo (ENS de Lyon, France), Carlos Sarraute (Grandata labs, Argentina), Anthony Busson (UCB Lyon, France) and Eric Fleury (ENS de Lyon, France)
***Comparison of Application and Network Layer Name Resolution in Mobile Ad hoc Networks***
Sebastian Schellenberg (University of Erlangen-Nuremberg, Germany), Silvia Krug (Technische Universität Ilmenau, Germany), Juergen Eckert (University of Erlangen, Germany) and Jochen Seitz (Technische Universität Ilmenau, Germany).
***Large-Scale Performance Evaluation of the IETF Internet of Things Protocol Suite for Smart City Solutions***
Javier Isern (Urbiotica, Spain), August Betzler (I2CAT, Spain), Carles Gomez (Universitat Politècnica de Catalunya, Spain), Ilker Demirkol (Universitat Politècnica de Catalunya, Spain) and Josep Paradells (Universitat Politècnica de Catalunya, Spain).

**[12:30 PM - 1:30 PM]** Lunch Break

**[1:30 PM - 3:30 PM]** Session 4: Heterogeneous Ad Hoc Networks

***Revisiting the characterization and the modeling of user impatience in ubiquitous networks***
Bruno Baynat (Sorbonne Universite, France), Marion Vasseur (Sorbonne Universite, France) and Thiago Abreu (Sorbonne Universite, France).
***On the Effect of Black-hole Attack on Opportunistic Routing Protocols***
Mahmood Salehi (University of Ottawa, Canada), Amir Darehshoorzadeh (University of Ottawa, Canada) and Azzedine Boukerche (University of Ottawa, Canada).
***Performance evaluation of data aggregation functions using Markov Decision Processes***
Jin Cui(INSA Lyon, France), Khaled Boussetta (Université de Paris, France) and Fabrice Valois (INSA Lyon, France)
***Development and Evaluation of a High-Speed Simulator for Wireless Sensor Network Protocols using GPGPU***
Hiroaki Nose (Nagano Prefectural Institute of Technology, Japan), Saori Nakajyo (Naganoken Kyodo Densan Co, Japan), Hikohumi Suzuki (Shinshu University, Japan) and Yasushi Fuwa (Shinshu University, Japan).

**[3:30 PM - 3:45 PM]** Closing and Final Remarks

## Symposia Keynote Address

***Keynote Speaker: Dr. Salil Kanhere***

***Title: Optimizing HTTP-Based Adaptive Streaming in Vehicular Environment using Markov Decision Process***

***Abstract:*** Hypertext transfer protocol (HTTP) is the fundamental mechanics supporting web browsing on the Internet. An HTTP server stores large volumes of contents and delivers specific pieces to the clients when requested. There is a recent move to use HTTP for video streaming as well, which promises seamless integration of video delivery to existing HTTP-based server platforms. This is achieved by segmenting the video into many small chunks and storing these chunks as separate files on the server. For adaptive streaming, the server stores different quality versions of the same chunk in different files to allow real-time quality adaptation of the video due to network bandwidth variation experienced by a client. For each chunk of the video, which quality version to download, therefore, becomes a major decision-making challenge for the streaming client, especially in vehicular environment with significant uncertainty in mobile bandwidth. In this talk, we demonstrate that for such decision making, Markov decision process (MDP) is superior to previously proposed non-MDP solutions. Using publicly available video and bandwidth datasets, we show that MDP achieves up to 15x reduction in playback deadline miss compared to a well-known non-MDP solution when the MDP has the prior knowledge of the bandwidth model. We also consider a model-free MDP implementation that uses Q-learning to gradually learn the optimal decisions by continuously observing the outcome of its decision making. We find that MDP with Q-learning significantly outperforms MDP that uses bandwidth models.

***Bio:*** Dr. Salil Kanhere received his M.S. and Ph.D. degrees, both in Electrical Engineering from Drexel University, Philadelphia in 2001 and 2003, respectively. He is currently an Associate Professor in the School of Computer Science and Engineering at the University of New South Wales in Sydney, Australia. His current research interests include pervasive computing, crowdsourcing, embedded sensor networks, mobile networking, privacy and security. He has published over 140 peer-reviewed articles and delivered over 15 tutorials and keynote talks on these research topics. He is a contributing research staff at National ICT Australia and a faculty associate at Institute for Infocomm Research, Singapore. Salil regularly serves on the organising committee of a number of IEEE and ACM international conferences (e.g, IEEE PerCom, ACM MobiSys, ACM SenSys, ACM CoNext, IEEE WoWMoM, IEEE LCN, ACM MSWiM, IEEE DCOSS, IEEE SenseApp, ICDCN, ISSNIP).

He currently serves as the Area Editor for Pervasive and Mobile Computing, Computer Communications, International Journal of Ad Hoc and Ubiquitous Computing and Mobile Information Systems. Salil is a Senior Member of both the IEEE and the ACM. He is a recipient of the Humboldt Research Fellowship in 2014.

## Posters

***Noah: Keyed Noise Flooding for Wireless Confidentiality***
Sang-Yoon Chang (Advanced Digital Sciences Center (ADSC), Singapore), Jemin Lee (Singapore University of Technology and Design (SUTD), Singapore), Yih-Chun Hu (University of Illinois at Urbana-Champaign, USA)

***Secure Routing against Wormhole Attack and Its Formal Verification based on Timed Colored Petri Net***
Lishi Chen and ChunYan Liu (Harbin Institute of Technology ShenZhen Graduate School, P.R. China), Hejiao Huang (Harbin Institute of Technology, P.R. China)

***Architectural Design of an Optimal Routed Network-based Mobility Management Function for SDN-based EPC Networks***
Wen-Kang Jia (Institute for Information Industry (III), Taiwan)

***Reliability Evaluation of Imperfect K-Terminal Stochastic Networks using Polygon-to Chain and Series-parallel Reductions***
Rebaiaia Mohamed-Larbi (Laval University &, CIRRELT, Canada)

***Bounding Degrees on RPL***
Fadwa Boubekeur (University of paris 6 &, LIP6, France), Paolo Medagliani (Huawei Technologies Co. Ltd., France), Lelia Blin (LIP6-University of Evry Val d'Essones, France), Rémy Leone (TELECOM ParisTech &, Thales Communications &, Security, France)

***Performance Evaluation of the VB-TDMA Protocol for Long-term Tracking and Monitoring of Mobile Entities in the Outdoors***
Ion Emilian Radoi (The University of Edinburgh, United Kingdom), Janek Mann and DK Arvind (University of Edinburgh, United Kingdom)

***OMNeTA: A hybrid simulator for a realistic evaluation of heterogeneous networks***
Markus Jung (Karlsruhe Institute of Technology, Germany), Anton Hergenröder (Karlsruhe Institute of Technology (KIT), Germany)

***E-BIAS: A Pervasive EEG-Based Identification and Authentication System***
Javad Sohankar, Koosha Sadeghi Oskooyee, Ayan Banerjee and Sandeep Gupta (Arizona State University, USA)

***Inferring Smartphone Positions Based on Collecting the Environment's Response to Vibration Motor Actuation***
Irina Diaconita (Multimedia Communications Lab, Technical University of Darmstadt, Germany), Andreas Reinhardt (TU Clausthal, Germany), Delphine Christin (University of Bonn and Fraunhofer FKIE, Germany), Christoph Rensing (Technical University of Darmstadt &, Multimedia Communications Lab, Germany)

***Secure and Error Resilient Approach for Multimedia Data Transmission in Constrained Networks***
Zeinab Fawaz (University of Franche Comte, France), Ahmed Mostefaoui (Université de Franche Comté, France), Hassan Noura (Independent, France)

***Can We Predict Future Link States in Wireless Smart Grid?***
Takuma Hamagami (Osaka City University, Japan), Kentaro Yanagihara (Oki Electric Industry Co., Ltd., Japan), Shinsuke Hara (Osaka City University, Japan)

***Location Assisted Coding (LAC): Embracing Interference in Free Space Optical Communications***
Thai Duong and Duong Nguyen-Huu (Oregon State University, USA), Thinh Nguyen (Oregon State, USA)

***Spectrum Access Quality for Mobile Broadband Video Communications in Smart Cities***
Omneya MK Issa (Communications Research Centre Canada, Canada)

***A Fuzzy Logic-Based Communication Medium Selection for QoS Preservation in Vehicular Networks***
Tarek Bouali (DRIVE Lab, ISAT Nevers, France), Sidi-Mohammed Senouci (University of Bourgogne - ISAT Nevers, France)

***An Efficient Pseudonym Change Protocol Based on Trusted Neighbours for Privacy and Anonymity in VANETs***
Kahina Moghraoui (University of Quebec at Trois-Rivieres, Canada), Amar Bensaber Boucif (University of Quebec, Trois Rivieres, Canada)

***Geometry-Based Statistical Modeling of Non-Stationary MIMO Vehicle-to-Vehicle Channels***
José T. Gutiérrez-Mena and Carlos A. Gutiérrez (Universidad Autonoma de San Luis Potosi, Mexico), Jose Martin Luna-Rivera (Autonomous University of San Luis Potosi, Mexico), Daniel Ulises Campos-Delgado (Universidad Autonoma de San Luis Potosi, Mexico), Javier Vazquez Castillo (Center of Investigation and Advanced Studies of I. P. N. &, CINVESTAV, Mexico)

***Sharing the Cost of Lunch: Energy Apportionment Policies***
Ekhiotz Jon Vergara, Simin Nadjm-Tehrani and Mikael Asplund (Linköping University, Sweden)

## Demos

***QoS Management for WiFi MAC layer processing in the Cloud - Demo Description***
Jonathan Vestin, Andreas Kassler (Universitetsgatan 2, Sweden)

***An open source platform for perceived video quality evaluation***
Lamine Amour, Souihi Sami, Said Hoceini, and Abdelhamid Mellouk (UPEC, France)

# General Information

## Conference Venue

**MSWiM 2015 Main Conference and its allocated Symposia/ Workshops will be hosted at Hotel Krystal Cancun.**

**Blvd. Paseo Kukulcan KM 9 Lotes 9 y 9A**
Zona Hotelera
77500 Cancún, QROO
Mexico
Tel: +1 (888) 774 0040 or (305) 774 0040

## Wi-Fi

Information about Wi-Fi access will be provided on conference site, at the registration Desk.

## Cancun

Cancun is in the South-east of Mexico, in the Yucatan Peninsula, at the Caribbean coast. Cancun's time zone is six hours earlier than Greenwich Mean Time (GMT). Daylight Saving Time begins on the first Sunday in April and ends on the last Sunday in October.

## Banquet Evening

MSWiM 2015 is glad to host a banquet evening on Wednesday, November 4th. More details will be provided at the registration Desk.

## N² Women Meeting

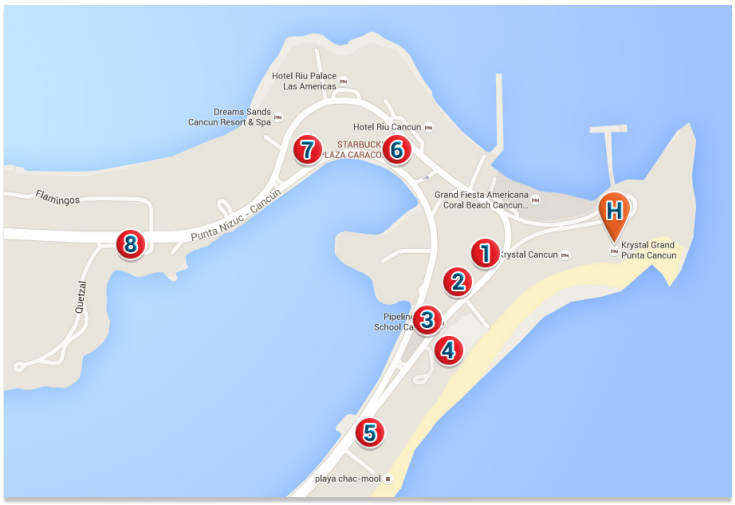
Networking Networking Women (N² Women) is an ACM SIGMOBILE program that is supported by the IEEE Communications Society, Microsoft Research and HP Labs.

N² Women meeting is a great opportunity for women in the computer networking domain to meet togehter and share their experiences. It has been held at many well-known conferences since 2006, e.g., IEEE INFOCOM, SECON, ICC, WiMob, WowMom, GLOBECOM, ACM MobiHoc, MobiCom, UbiComp, SenSys, SIGCOMM and so on. The main goal of N² Women is to foster connections among women and help their integration in computer networking and related research fields. We also welcome men, who share the same research interests, attend the same conferences, and often face the same career hurdles and obstacles, to join us!

## Restaurants

The conference venue is located in the shoreline of Cancun and there are many scenic options for eating out. Please see below some of the options close to the conference hotel:

1. VIPS
2. Hooters
3. Señor Frog's
4. Cambalache
5. Restaurante Le'Natura
6. Starbucks
7. Dag Dag Kosher
8. La Tentacion



## Coral Reef

The Coral Reef. This is one of the best attractions Cancun has to offer. The underwater world is filled with colourful fish and sea life that we rarely have opportunity to see. There are several ways to see the reef.

- Scuba Diving
- Snorkeling
- Submarine

## Isla Mujeres

This small island is reached though a short boat ride from Cancun; it is a laid-back beach village with a unique history. It is said that pirates would leave their women on the island for safe-keeping, hence the name Isla Mujeres. While on Isla Mujeres, you can go to Playa Norte, which is the most beautiful beach with calm, shallow water. You can get to the island by catamaran, private catamaran, or large, double-decker party boat. You can also take the public ferry from Cancun to Isla Mujeres.

## Chichen Itza

This is the largest and most spectacular site of Mayan ruins in the area. It is a 2 and a half hour drive from Cancun. It is fairly inexpensive to take a public bus tour to Chichen Itza including entrance fee and a guide.

## Eco-parks

Eco-parks are jungle reserves with tourist activities working in unison to preserve the jungle ecosystem and provide entertainment and an educational experience for tourists. There are several eco-parks in the Riviera Maya now with different activities.

*We are very pleased to welcome you to MSWiM 2015, held in Cancun, Mexico. We are confident that both the conference and your stay in Cancun will be informative, interesting and above all enjoyable!*

*MSWiM 2015 Organizing Committee*

## VISION

For over a decade, MSWiM has established itself as a premier conference in the areas of modeling, analysis and performance evaluation of wireless and mobile systems. The importance of these areas is becoming more evident, year-by-year, with the unprecedented ubiquity and capability of mobile systems. There is no doubt that research in these areas will remain essential to the design of efficient mobile systems and the future Internet.

## STRONG PROGRAM

In 2015, the call for papers attracted a large number of registered papers in all areas of mobile and wireless systems. This allowed us to build a very strong and valuable program through a thorough reviewing process, presenting an acceptance ratio of 25%. The submitted papers came from 36 countries, reflecting the truly international profile of MSWiM. Members of the Technical Program Committee are affiliated to universities and industry in 17 countries spread over five continents.

## CO-LOCATED EVENTS

Co-located with the ACM MSWiM 2015 Conference, the Symposia are covering several specializations within mobile and wireless systems: Mobility management and wireless access (MobiWAC); Performance evaluation of wireless ad hoc, sensor, and ubiquitous networks (PE-WASUN); Design and Analysis of Inteligent Vehicular networks and Applications (DIVANet); QoS and Security for Wireless and Mobile Networks (Q2SWinet).

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