WTS 2010

Wireless Telecommunications Symposium 2010

Global Wireless Communications: The Next Generation

April 21 - 23, 2010

California State Polytechnic University, Pomona
University of South Florida

Embassy Suites USF/Busch Gardens
Tampa, Florida

WELCOME TO WTS 2010

Welcome to the ninth annual Wireless Telecommunications Symposium. We hope that WTS 2010: Global Wireless Communications: The Next Generation will be a stimulating and rewarding experience for you. Wireless communications is truly a global subject and an excellent one for an interdisciplinary, international wireless communications conference like WTS to explore. During the next three days WTS 2010 will explore the next generation of global wireless communications in depth - in the invited speakers' presentations; in the Next Generation Wireless Networks and the Future of Vehicular Communications panel discussions; in the Testing Wireless Infrastructure, Cellular TV Phone, Network Security Architecture, and Wireless Network Security tutorials; and in the eight tracks of the accepted paper program: Wireless Communications: Military Aspects and Satellite Applications; Wireless Algorithms, Methods, Simulations, and Software; Wireless Communications and Network Technologies; Wireless Network Security; Ad Hoc, Sensor, Mesh Networks, and RFID; Wireless Telecommunications Services, Business and Policy; Wireless Standards and Platforms; and Wireless Communications in Latin America.

The WTS 2010 Program Committee received 105 paper submissions, from authors representing 29 different countries. We thank all the authors who submitted papers and proposals to WTS 2010, the many reviewers who reviewed them, and the co-chairs, track chairs, and session chairs for coordinating the paper and proposal evaluation and selection process. We also thank the WTS Administration and Operations Committees and support personnel for their tireless efforts behind the scene. Producing an event like WTS 2010 is not an easy task, and they did a masterful job. In addition, the WTS Committee is grateful to the IEEE Communications Society and its Wireless Technical Committee for their technical support for WTS 2010, and to the distinguished invited speakers representing the wireless telecommunications industry for having taken time to participate in the conference.

Finally, special thanks go to the University of South Florida's faculty and students for co-hosting WTS 2010 with Cal Poly Pomona and to the many organizations that have contributed to the effort or lent it financial support. Notable among the contributors and donors are Cal Poly Pomona's College of Business Administration and College of Engineering, its Computer Information Systems Department, Electrical and Computer Engineering Department, and Computer Science Department; the University of South Florida's Electrical Engineering Department and Information and Decision Sciences Department; the IEEE Foothill and Florida West Coast Sections; the IEEE Communications Society Foothill and Florida West Coast Chapters; CTC Technologies; MESAQIN; and Verizon Wireless.

On behalf of the WTS 2010 Committee -- Welcome to WTS 2010!

Dr. Steven Powell	Dr. Thomas Ketseoglou	Dr. Ravi Sankar
WTS General Chair	WTS Assistant Chair	WTS 2010 Executive Chair

WTS 2010 Program

Wednesday, April 21	
8:00 am - 9:00 am	Registration
9:00 am – 9:30 am	Welcoming Remarks
9:30 am – 10:30 am	**Invited Presentation: "Wireless Directions for the 21st Century"** **Dr. Richard Gitlin** State of Florida 21st Century World Class Scholar and the Agere Systems Chair Distinguished Professor of Electrical Engineering, University of South Florida
10:30 am – 10:45 am	Networking Break
10:45 am – 12:00 pm	**Tutorial: "Beyond Standard Compliance, Testing the Wireless Data Infrastructure Performance in the Lab"** **Dr. Habib Riazi** Research Manager, Clearwire WiMax Lab Clearwire
12:00 pm – 1:45 pm	Lunch
1:45 pm – 2:45 pm	**Tutorial: Current Usage and Issues in Cellular TV Phone** **Dr. J. P. Shim** Professor of MIS and Director of IBSP Mississippi State University
2:45 pm – 3:15 pm	Networking Break
3:15 pm - 5:00 pm	**Panel Discussion: "Next Generation Wireless Networks: Visions and Challenges"** Moderator: TBA Panelists: Dr. Habib Riazi (Clearwire) Jivesh Govil (Cisco) Dr. J.P. Shim (Mississippi State University) Dr. John Daigle (University of Mississippi)
5:00 pm – 6:00 pm	WTS Organizers' Meeting
6:00 pm – 6:30 pm	Networking Break

6:30 pm – 9:00 pm	**IEEE Communications Society Co-Sponsored Welcoming Dinner** **Guest Speaker: Internet Pioneer, Dr. Robert E. Kahn** Founder, Chairman, CEO, and President of the Corporation for National Research Initiatives (CNRI)
Thursday, April 22	
8:00 am - 8:30 am	Registration
8:30 am – 10:45 am	**Tutorial: Network Security Architecture in Practice** **Dr. François Cosquer** Head of Solutions Security, Alcatel-Lucent Corporate Solutions and Marketing
10:45 am – 11:00 am	Networking Break
11:00 am – 12:00 pm	**Executive Session** **Invited Speaker: Richard J. Lynch** Executive Vice President and Chief Technology Officer Verizon Communications
12:00 pm - 1:15 pm	Lunch
1:15 pm – 2:15 pm	**Invited Presentation: "3D Wireless Networks"** **Dr. Zygmunt Haas** Professor of Electrical and Computer Engineering and Director of the Wireless Networks Laboratory Cornell University
2:15 pm – 3:15 pm	**Invited Presentation: "Future Directions and Perspectives on Wireless Sensor Networks"** **Dr. Sajal Das** Professor and Director of the Center for Research in Wireless Mobility and Networking University of Texas at Arlington Program Director in the CISE directorate at the NSF
3:15 pm – 3:30 pm	Networking Break
3:30 pm – 5:00 pm	**Panel Discussion: "The Why's and What's of Vehicular Communications and a Look Into the Future"** Organizer and Moderator: Dr. Onur Altintas, Senior Researcher, Toyota InfoTechnology Center, JP Panelists: Prof. Eylem Ekici, Dept. of Electrical and Computer Engineering, Ohio State University

	Mr. Donald Grimm, Senior Researcher, General Motors R&D Center Dr. Andre Weimerskirch, CEO and President, escrypt Inc.
5:00 pm – 6:00 pm	Poster Paper Session
6:00 pm – 7:30 pm	**IEEE –Tampa/ USF Tutorial: "Introduction to Information Security in Wireless Networks"** **Dr. Xuan Hung Le and Mr. Ismail Butun** University of South Florida
Friday, April 23	
8:00 am – 8:30 am	Registration
8:30 am – 10:15 am	Accepted Paper Sessions (I)
10:15 am – 10:30 am	Networking Break
10:30 am – 12:15 pm	Accepted Paper Sessions (II)
12:15 pm – 1:15 pm	Lunch **Guest Speaker: Dr. Young-Kil Suh, Senior Advisor, SK Telecom** **"Mobile TV industry in Korea & Lessons from First Operator, TU Media"**
1:15 pm – 3:00 pm	Accepted Paper Sessions (III)
3:00 pm – 3:15 pm	Networking Break
3:15 pm – 5:00 pm	Accepted Paper Sessions (IV)
5:00 pm – 5:30 pm	Awards Ceremony for the Outstanding Paper Submitted and Presented and the Best Graduate and Undergraduate Student Papers Submitted and Presented Closing Remarks
Saturday, April24	
Visit to Busch Gardens **(Discounted tickets for WTS 2010 registrants will be available)**	

WTS 2010 Accepted Paper Sessions
Friday, April 23, 2010

April 23, 2010 (Room: Salon A/B)	
7:30 am – 8:00 am	**Registration**
8:00 am – 10:00 am *Session Chair:* Dr. Seshadri Mohan *Session Co-Chair:* Dr. Bala Natarajan	**Accepted Paper Sessions (I)** **Track: Wireless Communications and Network Technologies Session: OFDM/OFDMA I** ***Residue Number System Arithmetic Inspired Hopping Pilot Pattern Design for Cellular Downlink OFDMA*** Dalin Zhu (NEC Laboratories China, CN); Bala Natarajan (Kansas State University, US) ***EVM based AMC for an OFDM system*** Ramdane Chouitem (US) ***ARMA Companding Scheme With Improved Symbol Error Rate For PAPR Reduction In OFDM Systems*** Yasir Rahmatallah (University of Arkansas at Little Rock, US); Nidhal Bouaynaya (University of Arkansas at Little Rock, US); Seshadri Mohan (University of Arkansas at Little Rock, US) ***General Performance Analysis of M-PSK and M-QAM Wireless Communications Applied to OFDMA Interference*** Albert Mráz (Budapest University of Technology and Economics, HU); László Pap (Technical University of Budapest, HU) ***Decision Feedback Channel Estimation Algorithm for Alamouti Coded OFDM Systems*** Masoud Hoseinzade (K.N.Toosi University of Technology, IR); Kamal Mohamed-pour (K.N.Toosi University of Technology, IR); Seyed Mehdi Hosseini Andargoli (K.N.Toosi University of Technology, IR); Ahmad Gharanjik (K.N.Toosi University of Technology, IR) ***Modeling Fairness in Resource Allocation for Secondary Users in a Competitive Cognitive Radio Network*** Lutfa Akter (Kansas State University, US); Bala Natarajan (Kansas State University, US) ***A method of automatic assessment of feature compatibility in mobile networks*** Szymon Fedor (Dublin City University, IE)
10:00 am – 10:15 am	**Networking Break**

10:15 am – 12:15 pm *Session Chair:* Dr. Onur Altintas *Session Co-Chair:* Dr. Gang Uk Hwang	**Accepted Paper Sessions (II)** **Wireless Communications and Network Technologies Session: Network Communications** ***A Study on Evolving the Architecture of Circuit Switched Domain in UMTS Core Networks*** Ye Ouyang (Stevens Institute of Technology, US); M. Hosein Fallah (Stevens Institute of Technology, US) ***An Efficient Wireless Switching Architecture*** Jaewook Shim (University of California, San Diego, US); Kenneth Yun (University of California, San Diego, US); Rene Cruz (University of California, San Diego, US) ***Dynamic Channel Allocation Schemes for Overlay Cellular Architectures*** Hazar Aki (University of South Florida, US); Mustafa Cenk Erturk (University of South Florida, US); Huseyin Arslan (University of South Florida, US) ***Minimum Energy Consumption Design of A Two-hop Relay Network for QoS Guarantee*** Chan Yong Lee (Korea Advanced Institute of Science and Technology (KAIST), KR); Gang Uk Hwang (KAIST, KR) ***End-to-End Performance of Dual Hop Transmission with Fixed Relay*** Ahmad Gharanjik (K.N.Toosi University of Technology, IR); Kamal Mohamed-pour (K.N.Toosi University of Technology, IR); Seyed Mehdi Hosseini Andargoli (K.N.Toosi University of Technology, IR); Masoud Hoseinzade (K.N.Toosi University of Technology, IR) ***Unified 3GPP and 3GPP2 Turbo Encoder Using Run-time Partial Reconfiguration*** Arya Shikha Tripathi (Amrita School of Engineering, Amrita Vishwa Vidhyapeetham, IN); Rishi Mathur (Cosmic Circuits Pvt. Ltd., IN); Jyoti Arya (BITS, Pilani, IN) ***A Performance Analysis for UMTS Packet Switched Network Based on Multivariate KPIs*** Ye Ouyang (Stevens Institute of Technology, US); M. Hosein Fallah (Stevens Institute of Technology, US)
12:15 pm – 1:15 pm	Lunch **Guest Speaker: Dr. Young-Kil Suh, Senior Advisor, SK Telecom** "Mobile TV industry in Korea & Lessons from First

	Operator, TU Media"
1:15 pm – 3:00 pm *Session Chair:* Dr. Ehsan Sheybani *Session Co-Chair:* Mr. Yuanzhou Ye	**Accepted Paper Sessions (III)** **Track: Wireless Communications and Network Technologies** **Session: Radio Network Operation** ***A Cooperative Game-Theoretic Approach to Cellular Network Hand-off*** Yongxue Yu (University of South Florida, US); Ravi Sankar (University of South Florida, US) ***A Time Domain Eigen Value Method for Robust Indoor Localization*** G. M. Roshan Indika Godaliyadda (National University of Singapore, SG); Hari Krishna Garg (National University of Singapore, SG) ***Impact of Mobility Prediction on the Performance of Cognitive Radio Networks*** Ismail Butun (University of South Florida, US); Ahmet Cagatay Talay (Istanbul Technical University, TR); Deniz Turgay Altilar (Istanbul Technical University, TR); Murad Khalid (University of South Florida, US); Ravi Sankar (University of South Florida, US) **Adaptive Admission Control in a NGN Service Platform** Andre Ferreira (University of Minho, PT); Paulo Carvalho (University of Minho, PT); Solange Rito Lima (University of Minho, PT) ***Distributed Acceleration of Mobile Radio Network Optimisation Algorithms*** Yuanzhou Ye (University of Reading/ Symantec Corporation, UK); Graham Megson (University of Westminster, London, UK) ***Interference Management of Femtocell in Macro-cellular Networks*** Rong-Terng Juang (Industrial Technology Research Institute, TW); Pangan Ting (Tsing Hua University, TW); Hsin-Piao Lin (National Taipei University of Technology, TW); Ding-Bing Lin (National Taipei University of Technology, TW)
3:00 pm – 3:15 pm	**Networking Break**
3:15 pm – 5:00 pm *Session Chair:* Dr. Thomas	**Accepted Paper Sessions (IV)** **Wireless Communications and Network Technologies** **Session: OFDM/OFDMA II**

Ketseoglou *Session Co-Chair:* Dr. Xuan Hung Le	***Doppler Estimation for OFDM based Aeronautical Data Communication*** Jamal Haque (University of South Florida, US); Mustafa Cenk Erturk (University of South Florida, US); Huseyin Arslan (University of South Florida, US) **Cooperation Diversity Scenarios for Clipped OFDM with Iterative Destination Node Reception** Thomas Ketseoglou (California State Polytechnic University, Pomona, US) ***Low-Complexity Channel Estimation for Superimposed Pilots in Distributed OFDMA Systems*** Mikko Hiivala (VTT Technical Research Centre of Finland, FI); Ilkka S. Harjula (VTT Technical Research Centre of Finland, FI); Mika Lasanen (VTT Technical Research Centre of Finland, FI) ***Enhanced IEEE 802.11 by Integrating Multiuser Dynamic OFDMA*** Hasan S Ferdous (Monash University, AU); Manzur Murshed (Monash University, AU) ***The effect of channel and time-slot assignment algorithms on data loss events in OFDM/TDMA multi-hop wireless networks*** Vida Ferdowsi (University of Missouri-Kansas City, US); Kenneth Mitchell (University of Missouri-Kansas City, US) ***Efficient Residual Prediction*** Muhammad Shoaib (Beijing University of Posts and Telecommunications, CN)
5:00 pm – 5:15 pm	**Awards Ceremony for the Outstanding Paper and the Best Graduate and Undergraduate Student Papers** **Closing Remarks**
	April 23, 2010 (Room: Salon C)
7:30 am – 8:00 am	**Registration**
8:00 am – 10:00 am *Session Chair:* Dr. Manish Agrawal *Session Co-Chair:* Dr. Sagar Dhakal	**Accepted Paper Sessions (V)** **Track: Wireless Algorithms, Methods, and Simulations** **Session: PHY Layer & MIMO** ***A Novel CQI Feedback and User Allocation Scheme for PU2RC/OFDMA Systems in Correlated MIMO Channels*** Myeon-gyun Cho (Semyung University, KR) ***Regularized Channel Inversion Dirty-Paper***

	Coding (RCI-DPC): Narrowing the Power Offset in MIMO X Channels Adam Anderson (University of South Florida, US) ***Content-Based Rate-Adaptive Transfer Of SVC-Encoded Video Over MIMO Communication Systems*** Daniela Radakovic (University of Illinois at Chicago, US); Rashid Ansari (University of Illinois at Chicago, US); Yingwei Yao (University of Illinois at Chicago, US) ***Statistical Analysis of User-pairing Algorithms in Virtual MIMO Systems*** Sagar Dhakal (Naval Research Laboratory, US); JoonBeom Kim (Ericsson Inc., US) **VLSI Implementation of A Multi-Standard MIMO Symbol Detector for 3GPP LTE and WiMAX** Di Wu (Linköping University, SE); Johan Eilert (Linköping University, SE); Rizwan Asghar (Linköping University, SE); Dake Liu (Linköping University, SE); Qun Ge (Synopsys, CN) ***Modulation Diversity Benefits in Cooperative Communications*** Nauman F. Kiyani (IMEC-NL, NL); Umar H Rizvi (Delft University of Technology, NL); Guido Dolmans (Holst Centre / IMEC-NL, NL) ***The Application of Hybrid Space-Polarization Block Coding*** Jason Uher (University of Nebraska-Lincoln, US); Tadeusz Wysocki (University of Nebraska-Lincoln, US); Beata Wysocki (University of Nebraska-Lincoln, US)
10:00 am – 10:15 am	**Networking Break**
10:15 am – 12:15 pm *Session Chair:* Dr John N. Daigle *Session Co-Chair:* Dr. Chitranjan K. Singh	**Accepted Paper Sessions (VI)** **Track: Ad-Hoc, Sensor, Mesh Networks and RFID** **Session: Wireless Ad-Hoc and Sensor Networks** ***A Clustering Approximation Mechanism based on Data Spatial Correlation in Wireless Sensor Networks*** Zhikui Chen (Dalian University of Technology, CN); Song Yang (Dalian University of Technology, CN); Liang Li (Dalian University of Technology, CN); Zhijiang Xie (Chongqing University, CN) ***An Internet Overlay Architecture for Global Scale Wireless Sensor Networks*** William D Phillips (University of South Florida, US);

	Ravi Sankar (University of South Florida, US) ***Mission-Critical Packet Transfer with Explicit Path Selection in WMN-Based Tactical Networks*** Byeong-hee Roh (Ajou University, KR) ***An Algorithm for Real-Time Noise Cancellation in Wireless Sensor Networks*** Ehsan Sheybani (Virginia State University, US); Giti Javidi (Virginia State University, US) ***Operation of QDMA-Based Ad Hoc Networks*** John N. Daigle (University of Mississippi, US); Vijay P. Ramalingam (University of Mississippi, US) ***Effect of Antennas Correlation on the Performance of MIMO Systems in Wireless Sensor Network*** Chitranjan K Singh (University of Arkansas at Little Rock, US); Seshadri Mohan (University of Arkansas at Little Rock, US) ***WAVE design for next DSRC applications*** Tsutomu Tsuboi (Renesas Technology Corp., JP)
12:15 pm – 1:15 pm	**Lunch** **Guest Speaker: Dr. Young-Kil Suh, Senior Advisor, SK Telecom** "Mobile TV industry in Korea & Lessons from First Operator, TU Media"
1:15 pm – 3:00 pm *Session Chair:* Dr. Benjamin Khoo *Session Co-Chair:* Dr. Zhikui Chen	**Accepted Paper Sessions (VII)** **Tracks: Military and Satellite Applications and Security,** **Business Issues in Wireless Networks** **Session: Wireless Network Applications** ***RFID Usage Issues in the Supply Chain*** Benjamin Khoo (New York Institute of Technology, US) ***Wireless Telecommunications in Latin America: A Comparison of the Market Portfolios of America Movil and Telefonica*** Steven R Powell (California State Polytechnic University, Pomona, US) ***Mobile Communications for Development: Enabling Low-Cost e-Applications for Rural and Remote Areas (e-Health, e-Government, e-Environment)*** Souma Badombena Wanta (George Mason University, US); Ehsan Sheybani (Virginia State University, US) ***An Attribute-based Scheme for Service Recommendation using Association Rules and***

	Ant Colony Algorithm Zhikui Chen (Dalian University of Technology, CN); Zhuang Shao (Software School Dalian University of Technology, CN); Zhijiang Xie (Chongqing university, CN); Xiaodi Huang (Charles Stuart University, AU) ***A Unified Architecture for Efficient Data and Non-Data Aided Frequency Estimation for FPGA Implementation and Application to Satellite Communications*** Balasubramanian Ramakrishnan (The MITRE Corporation, US); Jeffrey Long (The MITRE Corporation, US) ***Transparent Session Transfer in Converged IP Messaging Systems*** Young sub Kwon (Seoul National University, KR); Jaehyun Jang (Seoul National University, KR); Hyunwoo Lee (Seoul National University, KR); Haewook Lee (Seoul National University, KR); Bummo Koo (Seoul National University, KR); Wuk Kim (Samsung Electronics, KR); Hyeonsang Eom (Seoul National University, KR)
3:00 pm – 3:15 pm	**Networking Break**
3:15 pm – 5:00 pm *Session Chair:* Dr. Jan Holub *Session Co-Chair:* Dr. Balasubramanian Ramakrishnan	**Accepted Paper Sessions (VIII)** **Track: Wireless Algorithms, Methods, and Simulations** **Session: Multimedia Networks** ***Voice Transmission Quality Measurement Algorithm with Non-native Listener Emulation Capability*** Jan Holub (Czech Technical University, Prague, CZ) ***A Polynomial Phasing Scheme to Realize Minimum Crest Factor for Multicarrier Transmission*** Yanyan Wu (Xi'an Jiaotong-Liverpool University, CN) ***Low-Power Baseband Processing for Wireless Multimedia Systems using Unequal Error Protection*** Yoon Seok Yang (Texas A&M University, US); Gwan Choi (Texas A&M University, US) ***No-Reference Quality of Experience Monitoring in DVB-H Networks*** Kamal Deep Singh (INRIA/IRISA, FR); Gerardo Rubino (INRIA/IRISA, FR) ***Robust and Reliable Frame Synchronization Method for DVB-S2*** Yulong Zhang (Fudan University, CN)

	Optimized Digital Automatic Gain Control for DVB-S2 System Yulong Zhang (Fudan University, CN)
5:00 pm – 5:15 pm	**Awards Ceremony for the Outstanding Paper and the Best Graduate and Undergraduate Student Papers** **Closing Remarks**

Speaker Biographies

Featured Speakers

Dr. Robert E. Kahn is Chairman, CEO, and President of the Corporation for National Research Initiatives (CNRI), which he founded in 1986 after a thirteen year term at the U.S. Defense Advanced Research Projects Agency (DARPA). CNRI was created as a not-for-profit organization to provide leadership and funding for research and development of the National Information Infrastructure.

After receiving a B.E.E. from the City College of New York in 1960, Dr. Kahn earned M.A. and Ph.D. degrees from Princeton University in 1962 and 1964 respectively. He worked on the Technical Staff at Bell Laboratories and then became an Assistant Professor of Electrical Engineering at MIT. He took a leave of absence from MIT to join Bolt Beranek and Newman, where he was responsible for the system design of the Arpanet, the first packet-switched network. In 1972 he moved to DARPA and subsequently became Director of DARPA's Information Processing Techniques Office (IPTO). While Director of IPTO he initiated the United States government's billion dollar Strategic Computing Program, the largest computer research and development program ever undertaken by the federal government. Dr. Kahn conceived the idea of open-architecture networking. He is a co-inventor of the TCP/IP protocols and was responsible for originating DARPA's Internet Program. Until recently, CNRI provided the Secretariat for the Internet Engineering Task Force (IETF). Dr. Kahn also coined the term National Information Infrastructure (NII) in the mid 1980s which later became more widely known as the Information Super Highway.

In his recent work, Dr. Kahn has been developing the concept of a digital object architecture as a key middleware component of the NII. This notion is providing a framework for interoperability of heterogeneous information systems and is being used in many applications such as the Digital Object Identifier (DOI). He is a co-inventor of Knowbot programs, mobile software agents in the network environment.

Dr. Kahn is a member of the National Academy of Engineering, a Fellow of the IEEE, a Fellow of AAAI, a Fellow of ACM and a Fellow of the Computer History Museum. He is a member of the State Department's Advisory Committee on International Communications and Information Policy, a

former member of the President's Information Technology Advisory Committee, a former member of the Board of Regents of the National Library of Medicine and the President's Advisory Council on the National Information Infrastructure.

He is a recipient of the AFIPS Harry Goode Memorial Award, the Marconi Award, the ACM SIGCOMM Award, the President's Award from ACM, the IEEE Koji Kobayashi Computer and Communications Award, the IEEE Alexander Graham Bell Medal, the IEEE Third Millennium Medal, the ACM Software Systems Award, the Computerworld/Smithsonian Award, the ASIS Special Award and the Public Service Award from the Computing Research Board. He has twice received the Secretary of Defense Civilian Service Award. He is a recipient of the 1997 National Medal of Technology, the 2001 Charles Stark Draper Prize from the National Academy of Engineering, the 2002 Prince of Asturias Award, and the 2004 A. M. Turing Award from the Association for Computing Machinery. Dr. Kahn received the 2003 Digital ID World award for the Digital Object Architecture as a significant contribution (technology, policy or social) to the digital identity industry. In 2005, he was awarded the Townsend Harris Medal from the Alumni Association of the City College of New York, the Presidential Medal of Freedom, and the C & C Prize in Tokyo, Japan. He was inducted into the National Inventors Hall of Fame in May 2006, and awarded the Japan Prize for his work in "Information Communication Theory and Technology" in 2008.

Dr. Kahn has received honorary degrees from Princeton University, University of Pavia, ETH Zurich, University of Maryland, George Mason University, the University of Central Florida and the University of Pisa, and an honorary fellowship from University College, London.

Richard J. Lynch is executive vice president and chief technology officer for Verizon Communications. In this role he is responsible for technology direction and network planning for all the Verizon business units.

Prior to assuming his current position in July 2007, Lynch had been the executive vice president and chief technical officer for Verizon Wireless since its formation in 2000, and before that, had held the same position at Bell Atlantic Mobile since 1990. In those positions he was responsible for network technology selection and planning as well as network operations. Under Lynch, the Verizon Wireless network attained the distinction of quality and reliability which has formed the basis for the very well known "Can you hear me now?" advertising campaign.

Lynch has been at the forefront of wireless data solutions, starting with Cellular Digital Packet Data (CDPD) in 1995 when he led Bell Atlantic Mobile's build of one of the largest CDPD networks in the country. In 2004, Lynch again led the industry with the decision to widely deploy EV-DO, in the first true wireless broadband service widely provided to the public in the US. Lynch was also responsible for the decision to deploy CDMA (Code Division Multiple Access), which still remains the basis for the Verizon Wireless high-quality voice network. Building on these and other key technology decisions, Lynch has supported the introduction of key innovative products and services into the marketplace.

Lynch is a Fellow of The Institute of Electrical and Electronic Engineers (IEEE). He has served on the executive board of the CDMA Development Group (CDG) and as a member of the Federal Communications Commission Technical Advisory Committee. For his leadership in the early years of wireless data, Lynch was honored with the President's Award by the Cellular Telecommunications and Internet Association (CTIA). He has earned patents for advances in the area of wireless technology. He is a frequent guest lecturer in academia and industry on technology and its business implications.

Lynch began his career in 1972 with New England Telephone and has held a variety of positions in planning, operations, and engineering there and in Bell of Pennsylvania.

Lynch is a graduate of Lowell Technological Institute (now University of Massachusetts) where he received bachelor's and master's degrees in electrical engineering. He has also completed post graduate work at the Wharton School of the University of Pennsylvania and the Johnson School of Management at Cornell University.

Dr. Richard D. Gitlin is a State of Florida 21st Century World Class Scholar and the Agere Systems Chair Distinguished Professor of Electrical Engineering at the University of South Florida. He has more than 38 years of leadership in the communications and networking industry. Most recently, he was Chief Technology Officer of Hammerhead Systems, a venture funded networking company in Silicon Valley. Previously, he was at Bell Labs/Lucent Technologies for 32-years performing and leading pioneering research and development in digital communications, broadband networking, and wireless systems. Dr. Gitlin was Senior VP for Communications and Networking Research at Bell Labs and later CTO of Lucent's Data Networking Business Unit. After retiring from Lucent, he was visiting professor of Electrical Engineering at Columbia University, where he supervised several doctoral students and research projects.

Dr. Gitlin is a member of the National Academy of Engineering, a Fellow of the IEEE, and a Bell Laboratories Fellow. He is also a co-recipient of the 2005 Thomas Alva Edison Patent Award and the S.O. Rice prize, has co-authored a text, published ~100 papers and holds 43 patents (with 6 pending. He has conducted and led research and development that has resulted in many innovative products, including: the industry-leading ATLANTA ATM Chipset, the world's first 20 gigabit/sec ATM switch, wire-speed and quality of service-aware IP switches, multicode CDMA (used in 3G HSDPA wireless data), and the BLAST broadband wireless system based on advanced smart antennas (MIMO). Earlier in his career, he led the team that pioneered V.32/V.34 voice-band modems, and in 1986 he was co-inventor of DSL. He was instrumental in launching Globespan, an early DSL chip vendor.

From 2002-2006 Dr. Gitlin served on the Board of Directors of PCTEL, Inc. (NASDAQ: PCTI), where he chaired the Intellectual Property committee.

Dr. Gitlin received a Bachelor's degree with honors in Electrical Engineering from The City College of New York, and Masters and Doctor of Engineering Science degrees in Electrical Engineering from Columbia

University.

Honorary Invited Speaker

Dr. Young-Kil Suh is Senior Advisor of SK Telecom, the largest mobile telecom operator in Korea.

Prior to his current position, Young-kil Suh served as President and CEO of TU Media Corp., the only provider of satellite Digital Multimedia Broadcasting (S-DMB) service in Korea, where he had oversight responsibilities for the company's direction.

He also had several leadership experiences in other SK group companies such as Executive Vice President of SK Telecom and SK C&C.

Before joining SK Group in 2000, he had worked for Ministry of Information and Communication (MIC, 77~89), Office of the President (89~93), Institute of Information Technology Assessment (93~94) until he finalized government officer career as Director General of MIC in 1998.

Suh holds a master degree in pubic administration (M.P.A) from Rutgers University (New Jersey) and a Ph.D in public policy from Korea University (Seoul).

Invited Speakers

Dr. François Cosquer is CTO Security and Technology Strategist for the Alcatel-Lucent Carrier Product Group. Over the past 18 years, he has held senior positions with research institutions, equipment vendors and telecommunications operators. He draws on extensive experience in security architecture, networking, operating systems, middleware, and multimedia applications. He has been speaker, panelist and chair at key industry events and conferences. François graduated in Electronics and Computing and holds an MSc in Computer Science and a PhD in Computer Engineering. He currently serves as Adjunct Professor at the Faculty of Engineering and Computer Science, University of Concordia, Montreal.

Dr. Sajal Das is a University Distinguished Scholar Professor of Computer Science and Engineering and the Founding Director of the Center for Research in Wireless Mobility and Networking (CReWMaN) at the University of Texas at Arlington (UTA). He is currently a Program Director at the National Science Foundation in the Division of Computer Networks and Systems. He is also a Visiting Professor at the Indian Institute of Technology at Kanpur and an Honorary Professor of Fudan University in Shanghai, China.

His current research interests include wireless and sensor networks, mobile and pervasive computing, smart environments, security and privacy, cloud computing, biological networking, applied graph theory and game theory. He has published over 400 papers and over 35 invited book chapters, and holds five US patents in wireless networks and mobile

Internet. Dr. Das coauthored two books - Smart Environments: Technology, Protocols, and Applications (Wiley, 2005) and Mobile Agents in Distributed Computing and Networking (Wiley, 2010). He is a recipient of the IEEE Computer Society Technical Achievement Award (2009) for pioneering contributions to sensor networks and mobile computing; IEEE Region 5 Outstanding Engineering Educator Award (2008); and seven Best Paper Awards in such conferences as EWSN'08, IEEE PerCom'06, and ACM MobiCom'99. At UTA, he is also a recipient of Lockheed Martin Teaching Excellence Award (2009), UTA Academy of Distinguished Scholars Award (2006), University Award for Distinguished Record of Research (2005), College of Engineering Research Excellence Award (2003), and Outstanding Faculty Research Award in Computer Science (2001 and 2003). He is frequently invited as keynote speaker at international conferences and symposia. Dr. Das serves as the Founding Editor-in-Chief of the Pervasive and Mobile Computing (PMC) journal, and an Associate Editor of IEEE Transactions on Mobile Computing, ACM/Springer Wireless Networks, Journal of Parallel and Distributed Computing, and Journal of Peer-to-Peer Networking. He is the founder of IEEE WoWMoM symposium and co-founder of IEEE PerCom conference. He has served as General and Technical Program Chair as well as TPC member of numerous IEEE and ACM conferences.

Dr. Zygmunt Haas is currently a professor in the school of Electrical and Computer Engineering at Cornell University. His research interests are in the area of Wireless Communication and Mobile System, and Biologically-inspired Complex Systems and Networks. Previously he was with AT&T Bell Laboratories in the Network Research Department. There he pursued research on wireless communications, mobility management, fast protocols, optical networks, and optical switching. From September 1994 till July 1995, Dr. Haas worked for the AT&T Wireless Center of Excellence, where he investigated various aspects of wireless and mobile networking, concentrating on TCP/IP networks. He earned his Ph.D. from Stanford University in 1988.

Dr. Haas is an author of numerous technical papers and holds eighteen patents in the fields of high-speed networking, wireless networks, and optical switching. He has organized several workshops, delivered numerous tutorials at major IEEE and ACM conferences, and has served as editor of several journals and magazines, including the IEEE Transactions on Networking, the IEEE Transactions on Wireless Communications, the IEEE Communications Magazine, the Springer "Wireless Networks" journal, the Elsevier "Ad Hoc Networks" journal, the "Journal of High Speed Networks," and the Wiley "Wireless Communications and Mobile Computing" journal. He has been a guest editor of IEEE JSAC issues on "Gigabit Networks," "Mobile Computing Networks," and "Ad-Hoc Networks." Dr. Haas is an IEEE Fellow and a voting member of ACM. He has served in the past as a Chair of the IEEE Technical Committee on Personal Communications (TCPC). His interests include: mobile and wireless communication and networks, biologically-inspired networks, and modeling of complex systems.

Dr. Habib Riazi has more than 30 years of professional contributions to the telecommunications industry with major telecom companies. He was the radio manger for the initial deployment of Verizon PCS network in Richmond, VA major trading market, chief architect for digital satellite radio receiver at Lucent Bell Labs, for now commercially available Sirius

satellite radio, and has been leading the Lab for 4G technology development initiative with Nextel, Sprint, and now Clearwire. Habib is currently the research manager at Clearwire Wimax Laboratory in Herndon, VA where he is responsible for Lab evaluation and performance verification of the radio access infrastructure for deployment in Clearwire 4G network. Habib did his PhD work at George Washington University, Washington DC, is a senior member of IEEE ComSoc, is a registered professional engineer in the State of VA, and holds numerous US and EU patents.

Dr. J. P. Shim, Larry and Tonya Favreau Notable Scholar and John Grisham Master Teacher, is Professor of MIS and Director of IBSP at Mississippi State University. He received his PhD from University of Nebraska and completed Harvard Business School's Executive Education Program. He taught Information Systems at Georgia State University, New York University, Chinese University of Hong Kong while he was on sabbatical. He serves on senior editor, associate editor, and editorial board/referee for Information Systems journals.

Professor Shim has received various professional awards, grants and distinctions, including National Science Foundation, Microsoft Corp., Mississippi Institutions of Higher Learning, Booz-Allen & Hamilton, University of Wisconsin Systems. He is a nine time recipient of the outstanding faculty award at MSU. He has written over 150 research papers in information systems and DSS. Recently, he has served as a program chair for US-Japan e-business conference sponsored by NSF and as a keynote speaker at international ubiquitous and embedded conference. He has lectured in the USA, UK, France, Korea, Kuwait, Hong Kong, Taiwan, Japan, Jamaica, Portugal, Turkey, and China.

Co-Sponsors

University of South Florida

Concurrent Technologies Corporation

Verizon Wireless

MESAQIN

IEEE Communications Society Foothill Chapter

Technical Co-Sponsors

IEEE Communications Society

IEEE Communications Society Technical Committee on Wireless Telecommunications

Wireless Telecommunications Symposium Committees

Steven Powell, WTSI General Chair Cal Poly Pomona srpowell@csupomona.edu	Thomas Ketseoglou, WTSI Assistant Chair Cal Poly Pomona tketseoglou@csupomona.edu
J.P. Shim WTSI Program Committee Chair Mississippi State University jshim@cobilan.msstate.edu	
WTS 2010 Program Committee	
Ravi Sankar, WTS 2010 Executive Program Chair University of South Florida r.sankar@ieee.org	
Manish Agrawal, WTS 2010 Program Committee Co-Chair University of South Florida magrawal@coba.usf.edu	Benjamin Khoo, WTS 2010 Program Committee Co-Chair New York Institute of Technology kkhoo@nyit.edu
Ehsan Sheybani, WTS 2010 Tutorial and Special Events	Hector Martinez, WTS 2010 Publicity & Exhibits Chair

(Panel Discussion) Chair Virginia State University esheyban@vsu.edu	IEEE FWCS SP/COM Chair, Tampa FL abelhect@hotmail.com
Carlos Navarrete, Cal Poly Pomona (Track chair), USA Chehri Abdellah, University of Ottawa, Canada Dimitrios Marinos, University of Athens, Greece Eli Olinick, Southern Methodist University, USA Fawzi Alghamdi, Florida Institute of Technology, USA Floriano De Rango, University of Calabria, Italy Inho Ra, Kunsan National University, South Korea Ismail Guvenc, DoCoMo USA Lab, USA Jan Holub, Czech Technical University (Track chair), Prague Jethro Shell, De Montfort University, UK Jivesh Govil, Cisco Michael Bartolacci, Penn State (Track chair), USA Onur Altintas, Toyota Info Technology Center, Japan	Qing-An Zeng, North Carolina A&T State University (Track chair), USA Salam Salloum, Cal Poly Pomona, USA Santiago Mazuelas, Mass. Inst. Of Tech. (Track chair), USA Sindiso Nieya, Computer Science Department Tevfik Yucek , Atheros Communication Inc. USA Theofilos Chrysikos, University of Patras, Greece Thomas Ketseoglou, California State Polytechnic University, USA Vassiliki Cossiavelou, Aegean University, Greece Venkataramana Badarla, National University of Ireland, Ireland Venkatesha, R R Prasad TU Delft University of Technology, Netherlands Xu Li, State University of New York at Buffalo, USA Xuan Hung Le, University of South Florida (Track chair), USA
WTSI Program Committee	
Jae-Hyeon Ahn, KAIST Business School Hussain Al-Rizzo, UALR Michael Bartolacci, Penn State Chatshick Bisdikian, IBM Research Suk-Gwon Chang, Hanyang University Francois Cosquer, Alcatel-Lucent Vassiliki Cossiavelou, Aegean University Floriano De Rango, University of Calabria, Italy Sasha Dekleva, DePaul University Francisco Martin del Campo, Universidad Iberoamericana Daniel Devasirvatham, SAIC Peter Farkas, Slovak University of Technology	Xian Liu, UALR Yun Liu, Beijing Xiaotong University Izabella Lokshina, SUNY Oneonta Wenjing Lou, Worcester Polytechnic InstituteTulin Mangir, CSU Long Beach Qusay Mahmoud, University of Guelph, Canada Timothy Matis, Texas Tech University Seshadri Mohan, UALR Mohamed Moustafa, Arab Information Union Mullaguru Naidu, QUALCOMM Carlos Navarrete, Cal Poly Pomona Ilkka Niva, Nokia Eli Olinick, SMU Sungmin Park, Brunel University, UK Katia Passerini, NJIT Keyukumar Patel, Box Hill Institute of TAFE

Robert Frueholz, Aerospace Corporation
Rajit Gadh, UCLA
Stephane Gagnon, Université du Québec en Outaouais
Ivan Guardiola, Texas Tech University
Amoakoh Gyasi-Agyei, Central Queensland University
Peter Hambuch, Motorola
Jan Holub, Czech Technical University
Dwight Holmes, Jet Propulsion Laboratory
Rose Hu, Sprint-Nextel
Jeyhan Karaoguz, Broadcom
Dan Kim, University of Houston - Clear Lake
Benjamin Kok Khoo, NYIT
Hisashi Kobayashi, Princeton University
Abdullah Konak, Penn State University
Francine Krief, Ecole Nationale Supérieure d'Electronique, Informatique et Radiocommunications de Bordeaux
Natalia Kryvinska, University of Vienna
Cees Lanting, Centre Suisse d'Electronique et de Microtechnique SA
Khaled Letaief, Hong Kong Univ. of Science & Technology
Huan Li, Beihang University, China
Lin Qingping, Nanyang Technological University
Jason Redi, BBN
Kui Ren, Illinois Institute of Technology
George Rittenhouse, Bell Laboratories
Salam Salloum, Cal Poly Pomona
Ravi Sankar, University of South Florida
Leonard Schiavone, MITRE
Ehsan Sheybani, Virginia State University
Jarmo Takala, Tampere Institute of Technology
Upkar Varshney, Georgia State University
Bin Wang, Wright State University
Takashi Watanabe, Shizuoka University
William Webb, Ofcom, UK
Stephen Weinstein, Columbia University
Yinghong Wen, Beijing Xiaotong University
Roger Whitaker, University of Cardiff
Hsiao-Chun Wu, LSU
Kui Wu, University of Victoria, Canada
Mingbo Xiao, Xiamen University
Chunsheng Xin, Norfolk State University
Halim Yanikomeroglu, Carleton University
Wei Ye, Bravotech Inc.
Qing-An Zeng, North Carolina A&T State University
Hong Zhou, University of Southern Queensland

Administration & Operations

Steven Curl, Administration & Operations Chair
Cal Poly Pomona

Kathleen Butikofer, Administrative Coordinator, Cal Poly Pomona
Kathy Byrum, Development Coordinator, Cal Poly Pomona
Jeffrey Cox, Co-Sponsorships Chair, Cal Poly Pomona
Kevin Davis, Information Technology Chair, Cal Poly Pomona
Vaughn Lucas, Information Technology Coordinator, Cal Poly Pomona
Kevin Ushijima, Webmaster, Cal Poly Pomona