

# Call for Papers

## Cognitive Radio and Networks Symposium

### Scope and Motivation:

Emerging cognitive radio communications and networking technologies promise a potential solution to the spectrum underutilization problem in wireless access, improving the interoperability and coexistence among different wireless/mobile communications systems and making the future generation radio devices/systems autonomous and self-reconfigurable. The goal of this symposium is to bring together and disseminate state of the art research contributions that address various aspects of analysis, design, optimization, implementation, standardization, and application of cognitive radio communications and networking technologies. The scope of this symposium includes (but is not limited to) the topics below.

### Main Topics of Interest:

The Cognitive Radio and Networks Symposium seeks original contributions in, but not limited to, the following topical areas:

- Challenges and issues in designing cognitive radios and cognitive radio networks
- Architectures and building blocks of cognitive radio networks
- Spectrum sensing, measurements and statistical modeling of spectrum usage
- Waveform design, modulation, interference aggregation, and mitigation for cognitive radio
- Distributed cooperative spectrum sensing and multiuser access
- Cognitive medium access control, interference management, and interference modeling
- Handoff and routing protocols
- Resource allocation for multi-antenna based cognitive radio communications
- Distributed adaptation and optimization methods
- Energy-efficient cognitive radio communications and networking
- Machine learning techniques for cognitive radio systems
- Self-configuration, interoperability and co-existence issues
- Dynamic spectrum sharing
- Security and robustness of cognitive spectrum-agile networks
- Cross-layer optimization of cognitive radio systems
- Applications and services based on cognitive radio networks (e.g., cognitive networking in TV whitespace, cognitive femtocell networks, public safety networks, and vehicular networks)
- Economic aspects of spectrum sharing (e.g., pricing, auction) in cognitive radio networks

- Regulatory policies and their interactions with communications and networking
- Cognitive radio standards, test-beds, simulation tools, and hardware prototypes
- Modeling and performance evaluation
- Quality of service provisioning in cognitive radio networks
- Attack modeling, prevention, mitigation, and defense in cognitive radio systems
- Architecture and implementation of database-based cognitive radio networks
- Selfishness and incentive issues in cooperative spectrum sensing
- Physical-layer secrecy in cognitive networks
- Cognitive cooperative communications protocols.

## Sponsoring Technical Committees:

## Paper Submission:

Please refer to the 2015 IEEE Globecom website for full instructions on how to submit papers. Select the desired symposium when submitting your paper. **The paper submission deadline is April 1, 2015.**

## Symposium Co-Chairs:

- Sudharman Jayaweera (University of New Mexico) [jayaweera@ece.unm.edu](mailto:jayaweera@ece.unm.edu)
- ChunSheng Xin (Old Dominion University) [cxin@odu.edu](mailto:cxin@odu.edu)
- Norman C. Beaulieu (Beijing University of Posts and Telecommunications)  
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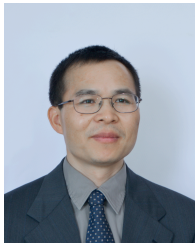
## Biographies



**Sudharman K. Jayaweera** was born in Matara, Sri Lanka. He completed his high school education at the Rahula College, Matara, and was a science journalist at the Associated Newspapers Ceylon Limited (ANCL) until 1993. In 1997, he received the B.E. degree in Electrical

and Electronic Engineering with First Class Honors from the University of Melbourne, Australia. He obtained his M.A. and Ph.D. degrees in Electrical Engineering from Princeton University, USA in 2001 and 2003, respectively. A Senior Member of the IEEE, Dr. Jayaweera is currently an Associate Professor in the Department of Electrical and Computer Engineering at the University of New Mexico, Albuquerque, NM where he is the Associate Chair of the Department and the Director of the Graduate Program. He was awarded an Air Force Summer Faculty Fellowship at the Kirtland Air Force Research Laboratory Space Vehicles Directorate (AFRL/RVSV) during 2009-2011 and a National Research Council (NRC) Fellowship at the Naval Postgraduate School in Monterey, CA in 2013. He is an editor of the IEEE Transactions on Vehicular Technology, and has also served on organizing committees and TPCs of numerous IEEE conferences.

His current research interests include cognitive and cooperative communications, machine learning, information theory of networked-control systems, statistical signal processing and control and optimization in smart-grid. His research has won 3 best paper awards at IEEE conferences. Dr. Jayaweera is the author of the upcoming Wiley book *Signal Processing for Cognitive Radios* due in 2015.



**ChunSheng Xin** is currently an Associate Professor in the Department of Electrical and Computer Engineering, Old Dominion University, Norfolk, VA, USA. He received the Ph.D. degree in Computer Science and Engineering from the State University of New York at Buffalo, Buffalo, NY, USA, in 2002. His research interests include cybersecurity, cognitive radio networks, wireless communications and networking, cyber-physical systems, and performance evaluation and modeling. He has received several grants from the National Science Foundation to support his research. His research findings have been published in numerous papers in leading journals and conferences, such as IEEE Infocom, TWC, TMC, TVT, ToN, and JSAC. His research has received two recent Best Paper Awards at IEEE Globecom 2013, and the International Conference on Computer Communications and Networks (ICCCN) 2014. He has contributed several book chapters in professional books. He also received one patent while he worked in the Nokia Research Center, Boston, MA, USA, from 2000 to 2002. He has served as Associate Editor of several international journals, and Advisory Board Member of multiple professional books. He has also served on the technical program and organization committees of numerous technical conferences/workshops, as well as symposium/track chair. He is an IEEE Senior Member.



**Norman C. Beaulieu** received the B.A.Sc. (honours), M.A.Sc., and Ph.D. degrees in electrical engineering from the University of British Columbia, Vancouver, BC, Canada. He has held academic appointments at the Beijing University of Posts and Telecommunications (BUPT), the University of Alberta, the University of Electronic Science and Technology of China (UESTC), King Abdulaziz University, and Queen's University. He served two terms as the Editor-in-Chief of the IEEE Transactions on Communications, and as Senior Editor and Associate Editor for a number of IEEE and other journals. He also served on the Editorial Board of the Proceedings of the IEEE. Dr. Beaulieu is a Fellow of the Royal Society of Canada and was awarded the Thomas W. Eadie Medal of the Society in 2005. Professor Beaulieu is listed on ISI HighlyCited.com and has been an IEEE Communications Society Distinguished Lecturer. He is the recipient of the IEEE Communications Society 2007 Edwin Howard Armstrong Achievement Award. In 2011, he was awarded the Radio Communications Committee Technical Recognition Award and in 2013 the (Inaugural) Signal Processing and Communications Electronics (SPCE) Technical Committee Technical Recognition Award. He is a Fellow of the IEEE.

His current research interests include cognitive radio, cooperative wireless networks, signal processing in communications, applied probability theory, broadband digital communications systems including ultra-wide bandwidth wireless systems, fading channel modeling and simulation, interference channels, and multiple input multiple output (MIMO) systems