

Wednesday, March 16

8:00 – 9:00am Continental Breakfast Convocation Room	9:00 – 11:30am Sessions WA-01 – WA-06	11:45am – 12:45pm Plenary Talk: Sergio Verdú F101	12:45 – 2:30pm Lunch Break See local suggestions	2:30 – 5:00pm Sessions WP-01 – WP-06	5:30 – 7:30pm Reception Dinner Charter Club Name tag required for admittance
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INVITED SESSION

WA-01 Optimization of Social and Energy Networks Room F006

Organizer: Mung Chiang

9:00 – 9:20am **Store or Sell? A Threshold Price Policy for Revenue Maximization in Windfarms with On-site Storage**

Zamiyad Dar, Rensselaer Polytechnic Institute
Koushik Kar, Rensselaer Polytechnic Institute
Joe H. Chow, Rensselaer Polytechnic Institute

9:20 – 9:40am **Optimal Detection of Influential Spreaders in Online Social Networks**

Chee Wei Tan, City University of Hong Kong, Hong Kong

9:40 – 10:00am **Optimal Operation of Battery Energy Storage Systems for Primary Frequency Control**

Ying Jun (Angela) Zhang, The Chinese University of Hong Kong, Hong Kong
Changhong Zhao, California Institute of Technology
Wanrong Tang, The Chinese University of Hong Kong, Hong Kong
Steven Low, California Institute of Technology

10:00 – 10:30am **BREAK**

10:30 – 10:50am **Second Chance Works Out Better: Saving More for Data Center Operator in Open Energy Market**

Peijian Wang, The Chinese University of Hong Kong, Hong Kong
Ying Zhang, The Chinese University of Hong Kong, Hong Kong
Lei Deng, The Chinese University of Hong Kong, Hong Kong
Minghua Chen, The Chinese University of Hong Kong, Hong Kong
Xue Liu, McGill University, Canada

INVITED SESSION

WA-02 Cybersecurity and Privacy in Distributed and Cyber-physical Systems Room F004

Organizer: Lalitha Sankar

9:00 – 9:20am **A Little Shared Secrecy and Feedback Go a Long Way in Network Error Correction**

Oliver Kosut, Arizona State University
Peida Tian, Chinese University of Hong Kong, Hong Kong
Mayank Bakshi, Chinese University of Hong Kong, Hong Kong
Sidharth Jaggi, Chinese University of Hong Kong, Hong Kong

9:20 – 9:40am **Privacy with Estimation Constraints**

Flavio du Pin Calmon, IBM

9:40 – 10:00am **Differential Privacy in Networked Data Collection**

Omid Javidbakht, Lehigh University
Parv Venkatasubramaniam, Lehigh University

10:00 – 10:30am **BREAK**

10:30-10:50am **Privacy-preserving Source Separation for Distributed Data using Independent Component Analysis**

Hafiz Imtiaz, Rutgers University
Rogers F Silva, The University of New Mexico (UNM) & The Mind Research Network (MRN)
Bradley Baker, New College of Florida
Sergey Plis, The Mind Research Network (MRN)
Anand D. Sarwate, Rutgers University
Vince Calhoun, University of New Mexico

10:50 – 11:10am **Differentially Private Multi-party Computation**

Peter Kairouz, University of Illinois at Urbana-Champaign
Sewoong Oh, University of Illinois at Urbana-Champaign
Pramod Viswanath, University of Illinois at Urbana-Champaign

11:10 – 11:30am **Algorithmic Advances in Anonymous Communication over Networks**

Giulia Fanti, University of California, Berkeley
Pramod Viswanath, University of Illinois at Urbana-Champaign

WA-3 Wireless Communications 1 Room F008

9:00 – 9:20am **Performance of Pattern Diversity in Reconfigurable Antenna Arrays**

George Sworo, Drexel University
Kapil Dandekar, Drexel University
Moshe Kam, New Jersey Institute of Technology

9:20 – 9:40am **Statistical Analysis of Measured Ground Penetrating Radar**

DataAnirudh Rangaswamy, Centerville High School
Lorenzo Lo Monte, University of Dayton & Air Force Research Lab
Michael Wicks, University of Dayton

9:40 – 10:00am **Doubly Opportunistic Beamforming for Downlink Multiuser, MIMO**

Junyoung Nam, Electronics and Telecommunications Research Institute (ETRI), Korea
Young-Jo Ko, Electronics and Telecommunications Research Institute, Korea

10:00 – 10:30am

BREAK

10:30 – 10:50am

Energy-Efficient Power Control with Finite Discrete Inputs under Quality of Service Constraints

Gozde Ozcan, Syracuse University
M. Cenk Gursoy, Syracuse University

10:50 – 11:10am

Investigation of RLS Beamforming Algorithm In-terms of Energy Efficiency

Hailu Belay Kassa, AAU, Ethiopia
Tezera Chernet, Hawassa University, Ethiopia
Estifanos Yohannes Menta, Hawassa Institute of Technology (HIoT)
Hawassa University, Ethiopia
Dereje H. Woldegebreal, Addis Ababa University, Addis Ababa
Institute of Technology, Ethiopia
Yacob Astatke, Morgan State University
Farzad Moazzami, Morgan State University
Wondimu Zegeye, Morgan State University

■ **WA-04
Networks 1
Room F108**

9:00 – 9:20am

Battle of Opinions over Evolving Social Networks

Irem Koprulu, The Ohio State University
Yoor Kim, University of Ulsan, Korea
Ness B. Shroff, The Ohio State University

9:20 – 9:40am

Evolutionary Game Theoretic Analysis of Distributed Denial of Service Attacks in a Wireless Network

Ahmed Alabdel Abass, Rutgers University
Mohammad Hajimirsadeghi, WINLAB, Rutgers University
Narayan Mandayam, WINLAB, Rutgers University
Zoran Gajic, Rutgers University

9:40 – 10:00am

Optimal Energy Allocation and Storage Control for Distributed Estimation with Sensor Collaboration

Sijia Liu, Syracuse University
Yanzhi Wang, Syracuse University
Makan Fardad, Syracuse University
Pramod Varshney, Syracuse University

10:00 – 10:30am

BREAK

10:30 – 10:50am

Design and Performance Evaluation of an Energy Efficient Routing Protocol for Wireless Sensor Networks

Seifemichael Amsalu, North Carolina A&T State University
Wondimu Zegeye, Morgan State University
Dereje H. Woldegebreal, Addis Ababa University, Addis Ababa
Institute of Technology, Ethiopia
Yacob Astatke, Morgan State University

10:50 – 11:10am

Towards Optimal PMU Placement against Data Integrity Attacks in Smart Grid

Qingyu Yang, Xi'an Jiaotong University, P.R. China
Rui Min, Xi'an Jiaotong University, P.R. China
Dou An, Xi'an Jiaotong University, P.R. China
Wei Yu, Towson University
Xinyu Yang, Xi'an Jiaotong University, P.R. China

■ **WA-05
Signal Processing 1
Room F109**

9:00 – 9:20am

Fidelity Loss in Distribution-Preserving Anonymization and Histogram Equalization

Lav R. Varshney, University of Illinois at Urbana-Champaign
Kush Varshney, IBM Thomas J. Watson Research Center

9:20 – 9:40am

One Sample Per Person Facial Recognition With Local Binary Patterns and Image Sub-Grids

Gordon Stein, Lawrence Technological University
Yuan Li, Lawrence Technological University
Yin Wang, Lawrence Technological University

9:40 – 10:00am

Real Time Artificial Auditory Systems for Cluttered Environments

Giuseppe Dentamaro, Politecnico di Bari, Italy
Angelo Cardellitto, Politecnico di Bari, Italy
Cataldo Guaragnella, Politecnico di Bari, Italy

10:00 – 10:30am

BREAK

10:30 – 10:50am

Signal Processing of Time Domain Load Signals of CNC Lathe Based on Improved Neighbor Block

Zhen Li, JiLin University, P.R. China
Fei Chen, JiLin University, P.R. China
Jialong He, JiLin University, P.R. China
Mingmin Zhu, JiLin University, P.R. China
Binbin Xu, JiLin University, P.R. China

10:50 – 11:10am

A Dynamic Time Warping Algorithm for Industrial Robot Motion Analysis

Benjamin Johnen, Ruhr-Universität Bochum, Germany
Bernd Kuhlenkötter, TU Dortmund University, Institute of Production Systems, Germany

■ **WA-06
Information Theory & Communications 1
Room F009**

9:00 – 9:20am

On the LLR criterion based Shortening Design for LDPC Code

Hui Wang, Southwest Jiaotong University, P.R. China
Qingchun Chen, Southwest Jiaotong University, P.R. China
Yong Zhang, Southwest Jiaotong University, P.R. China

9:20 – 9:40am

Triggering Wave-Like Convergence of Tail-biting Spatially Coupled LDPC Codes

Sebastian Cammerer, University of Stuttgart, Germany
Vahid Aref, Bell Laboratories, Nokia, Germany
Laurent Schmalen, Alcatel-Lucent, Bell Laboratories, Germany
Stephan ten Brink, University of Stuttgart, Germany

9:40 – 10:00am

Non-linear Satellite Channel Equalization Based on a Low Complexity Echo State Network

Marc Bauduin, Université Libre de Bruxelles, Belgium
Serge Massar, Université Libre de Bruxelles, Belgium
François Horlin, Université Libre de Bruxelles, Belgium

10:00 – 10:30am

BREAK

10:30 – 10:50am

Vector Gaussian Multi-Decoder Rate-Distortion: Trace Constraints

Sinem Unal, Cornell University
Aaron Wagner, Cornell University

10:50 – 11:10am

Channel Equalization Techniques for Non-volatile Memristor Memories

Rawan Naous, KAUST, Saudi Arabia
Mohammed Affan Zidan, KAUST, Saudi Arabia
Ahmed Sultan, KAUST, Saudi Arabia
Khaled N Salama, KAUST, Saudi Arabia

INVITED SESSION

**WP-01
Optimization of Wireless Networks
Room F006**

Organizer: Mung Chiang

2:30 – 2:50pm

Inter-Network Dynamic Spectrum Allocation Via a Colonel Blotto Game

Mohammad Hajimirsadeghi, WINLAB, Rutgers University
Gokul Sridharan, WINLAB, Rutgers University
Walid Saad, Virginia Tech
Narayan Mandayam, WINLAB, Rutgers University

2:50 – 3:10pm

Tracking Mobile Users via Standard Routing Engines

Matthew Andrews, Nokia Bell Labs
Lisa Zhang, Nokia Bell Labs

3:10 – 3:30pm

Spatial-Temporal Routing for Supporting End-to-End Hard Deadlines in Multi-hop Networks

Xin Liu, Arizona State University
Lei Ying, Arizona State University

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

Comparative Analysis of Initial Access Techniques in 5G mmWave Cellular Networks

Marco Giordani, Universita' degli Studi di Padova, Italy
Marco Mezzavilla, NYU Poly
C. Nicolas Barati Nt., NYU Poly
Sundeeep Rangan, NYU Poly
Michele Zorzi, Università degli Studi di Padova, Italy

4:20 – 4:40pm

Adaptive Scheduling with Reconfiguration Delay

Tara Javidi, UC San Diego

4:40 – 5:00pm

Scheduling for Fresh Information in Wireless Networks

Changee Joo, UNIST
Atilla Eryilmaz, Ohio State University

INVITED SESSION

**WP-02
Optimization in the Information Sciences
Room F004**

Organizer: Venkat Chandrasekaran

2:30 – 2:50pm

Optimization for Sequential Change-point Detection

Yao Xie, Georgia Institute of Technology

2:50 – 3:10pm

Higher Order Analysis of Sparse Recovery Algorithms: Resolving the Limitations of Phase Transition

Arian Maleki, Columbia University

3:10 – 3:30pm

From Seismography to Compressed Sensing and Back: A Brief History of Optimization-based Signal Processing

Carlos Fernandez-Granda, New York University

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

Localization from Paired Comparisons

Mark Davenport, Georgia Institute of Technology

4:20 – 4:40pm

Low-rank Matrix Completion under Monotonic Transformation

Laura Balzano, University of Michigan

4:40 – 5:00pm

The Computational Power of Relative Entropy

Venkat Chandrasekaran, California Institute of Technology

**WP-03
Wireless Communications 2
Room 008**

2:30 – 2:50pm

Packet Success Probability Derivation in a Vehicular Ad Hoc Network for a Highway Scenario

Ali Rakhshan, University of Massachusetts, Amherst
Hossein Pishro-Nik, University of Massachusetts, Amherst

2:50 – 3:10pm

A New PTS Method for OFDM Signals Without Side Information Based on Constellation Reshaping

Hongxiang Chu, Saitama University, Japan
Tetsuya Shimamura, Saitama University, Japan

3:10 – 3:30pm

Statistical QoS-Driven Resource Allocation Over FD-SS Cooperative Cognitive Radios Networks

Jingqing Wang, Texas A&M University
Xi Zhang, Texas A&M University

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

User Association with Lighting Constraints in Visible Light Communication Systems

Cong Shen, University of Science and Technology of China, P.R. China
Shun Lou, University of Science and Technology of China, P.R. China
Chen Gong, University of Science and Technology of China, P.R. China
Zhengyuan Xu, University of Science and Technology of China, P.R. China

4:20 – 4:40pm

Design and Implementation of an Underlay Control Channel for NC-OFDM-Based Networks

Ratnesh Kumbhkar, WINLAB, Rutgers University
Gokul Sridharan, WINLAB, Rutgers University
Narayan Mandayam, WINLAB, Rutgers University
Ivan Seskar, WINLAB, Rutgers University
Sastry Kompella, Naval Research Laboratory

■ **WP-04
Networks 2
Room F108**

2:30 – 2:50pm

Interdependency Analysis of Communications and Control in Networked Cyber Physical Systems: An Entropy Framework

Husheng Li, University of Tennessee

2:50 – 3:10pm

Wi-Fi-LAA Coexistence: Design and Evaluation of Listen Before Talk for LAA

Ananth Kini, InterDigital Communications
Loïc Canonne-Velasquez, InterDigital Communications
Mohsen Hosseinian, InterDigital Communications
Marian Rudolf, InterDigital Communications
Janet Stern-Berkowitz, InterDigital Communications

3:10 – 3:30pm

Nonlinear Structural Equation Models for Network Topology Inference

Yanning Shen, University of Minnesota
Brian Baingana, University of Minnesota
Georgios B. Giannakis, University of Minnesota

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

Decay of Correlation in Network Flow Problems

Patrick Rebeschini, Yale University
Sekhar Tatikonda, Yale University

4:20 – 4:40pm

Incentive Mechanisms for Privacy-Sensitive Electricity Consumers with Alternative Energy Sources

Chong Huang, Arizona State University
Lalitha Sankar, Arizona State University

■ **WP-05
Security and Privacy
Room F109**

2:30 – 2:50pm

Advanced Persistent Threats: Behind the Scenes

Martin Ussath, Hasso Plattner Institute, University of Potsdam, Germany
David Jaeger, Hasso Plattner Institute, University of Potsdam, Germany

Feng Cheng, Hasso Plattner Institute, University of Potsdam, Germany

Christoph Meinel, Hasso Plattner Institute, University of Potsdam, Germany

2:50 – 3:10pm

Privacy-Aware Stochastic Control with a “Snoopy” Adversary: A Game-Theoretic Approach

Abhishek Gupta, Ohio State University

3:10 – 3:30pm

Sequential Aggregate Authentication Codes with Information Theoretic Security

Shinichiro Tomita, Yokohama National University, Japan
Yohei Watanabe, Yokohama National University, Japan
Junji Shikata, Yokohama National University, Japan

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

Cyber Fighter Associate: A Decision Support System for Cyber Agility

Charles Huber, Pennsylvania State University
Scott Brown, Army Research Lab
Lisa Marvel, Army Research Laboratory
Patrick McDaniel, Pennsylvania State University

4:20 – 4:40pm

Defining Perfect Location Privacy Using Anonymization

Zarrin Montazeri, University of Massachusetts, Amherst
Amir Houmansadr, University of Massachusetts Amherst
Hossein Pishro-Nik, University of Massachusetts, Amherst

■ **WP-06
Information Theory & Communications 2
Room F009**

2:30 – 2:50pm

An Operational Measure of Information Leakage

Ibrahim Issa, Cornell University
Sudeep Kamath, Princeton University
Aaron Wagner, Cornell University

2:50 – 3:10pm

Novel Outer Bounds and Capacity Results for the Interference Channel with Conferencing Receivers

Reza K. Farsani, University of Waterloo, Canada
Amir K. Khandani, University of Waterloo, Canada

3:10 – 3:30pm

Decentralized Simultaneous Energy and Information Transmission in Multiple Access Channels

Selma Belhadj Amor, INRIA, France
Samir M. Perlaza, INRIA, France

3:30 – 4:00pm

BREAK

4:00 – 4:20pm

Energy-Efficient Resource Allocation for SWIPT in Multiple Access Channels

Tewodros Zewde, Syracuse University
M. Cenk Gursoy, Syracuse University