

**Program of the  
2011 Asilomar Conference on  
Signals, Systems, and Computers**

**Technical Program Chairman  
Prof. Robert W. Heath, Jr.  
The University of Texas at Austin**

## Session MA1b Energy Efficient MIMO Communication

Chair: *Chan-Byoung Chae, Yonsei University, S. Korea*

- MA1b-1 Optimal Transmission Policies over Vector Gaussian Channels with Energy Harvesting Transmitters 10:15 AM  
*Omur Ozel, University of Maryland; Jing Yang, Sennur Ulukus, University of Wisconsin-Madison*
- MA1b-2 Throughput and Energy Consumption of a Random Network with Energy Harvesters 10:40 AM  
*Kaibin Huang, Yonsei University*
- MA1b-3 Large-Scale Antenna Systems for Wireless Energy Efficiency 11:05 AM  
*Thomas Marzetta, Bell Laboratories, Alcatel-Lucent*
- MA1b-4 Energy-Efficient Training for Antenna Selection in Time-Varying Channels 11:30 AM  
*Vinod Kristem, Broadcom Corporation; Neelesh B. Mehta, Indian Institute of Science; Andreas Molisch, University of Southern California*

## Session MA2b Delay Sensitive Communication

Chair: *Ashish Khisti, University of Toronto*

- MA2b-1 Speeding Multicast by Acknowledgment Reduction Technique (SMART) 10:15 AM  
*Arman Rezaee, Linda Zeger, Muriel Medard, Massachusetts Institute of Technology*
- MA2b-2 Controlling End-to-End Application Latency for Real-Time Data 10:40 AM  
*Sanjeev Mehrotra, Cheng Huang, Jin Li, Microsoft Research*
- MA2b-3 Correcting Erasure Bursts with Minimum Decoding Delay 11:05 AM  
*Zhi Li, Stanford University; Ashish Khisti, University of Toronto; Bernd Girod, Stanford University*
- MA2b-4 Code Length and Rate Selection for Delay Sensitive Bursty Traffic 11:30 AM  
*Tara Javidi, University of California, San Diego*

## Session MA3b Graphical Models in Signal Processing I

Chair: *Andrea Montanari, Stanford University*

- MA3b-1 Stochastic Belief Propagation: A Low-Complexity Message-Passing Algorithm with Guarantees 10:15 AM  
*Nima Noorshams, Martin Wainwright, University of California, Berkeley*
- MA3b-2 Reweighted Linear Programming for Inference and Decoding 10:40 AM  
*Amin Khajehnejad, Alexandros Dimakis, Babak Hassibi, University of Southern California*

- MA3b-3 Message-Passing on Dense Graphs and Applications in Statistical Learning 11:05 AM  
*Mohsen Bayati, Andrea Montanari, Stanford University*

- MA3b-4 Robust Belief Propagation 11:30 AM  
*Morteza Ibrahimi, Adel Javanmard, Yashodhan Kanoria, Andrea Montanari, Stanford University*

## Session MA4b In-network Computation

Chair: *Oswaldo Simeone, New Jersey Institute of Technology*

- MA4b-1 Network Optimization with Heuristic Rational Agents 10:15 AM  
*Ceyhan Eksin, Alejandro Ribeiro, University of Pennsylvania*
- MA4b-2 A Coordination-Free Distributed Algorithm for Simple Assignment Problems Using Randomized Actions 10:40 AM  
*Usman A. Khan, Tufts University; Soumya Kar, Carnegie Mellon University*
- MA4b-3 Distributed Estimation of the Maximum Value over a Wireless Sensor Network 11:05 AM  
*Franck Iutzeler, Jérémie Jakubowicz, Institut Telecom, Telecom ParisTech, CNRS LTCI; Walid Hachem, CNRS-Telecom ParisTech; Philippe Ciblat, Institut Telecom, Telecom ParisTech, CNRS LTCI*
- MA4b-4 Collaborative Sequential-Based Detection in Wireless Sensor Networks 11:30 AM  
*Sabina Ježnilovic, Carnegie Mellon University; Joao Pedro Gomes, Instituto Superior Tecnico; Bruno Sinopoli, Carnegie Mellon University*

## Session MA5b Medical Imaging

Chair: *Ge Yang, Carnegie Mellon University*

- MA5b-1 Calibrationless Parallel MRI Using ORACLE (Overlapping Low-Rank Approximations for Coil Image Estimation) 10:15 AM  
*Joshua Trzasko, Armando Manduca, Mayo Clinic*
- MA5b-2 Signal Modeling and the Cramér-Rao Bound for Absolute Magnetic Resonance Thermometry: Feasibility in Fat Tissue 10:40 AM  
*Marcus Björk, Johan Berglund, Joel Kullberg, Petre Stoica, Uppsala University*
- MA5b-3 Level Estimation for Sparse Reconstruction in Discrete Tomography 11:05 AM  
*Yenting Lin, Antonio Ortega, Alexandros G. Dimakis, University of Southern California*
- MA5b-4 Multimodal Image Registration by Consistency of Saliency Map 11:30 AM  
*Hirolyuki Takeda, University of Michigan*

## Session MA6b Collaborative Beamforming

Chair: *Sofiene Affes, INRS-EMT, Université du Québec*

- MA6b-1 DSP-Centric Algorithms for Distributed Transmit Beamforming 10:15 AM  
*Upamanyu Madhoo, University of California, Santa Barbara; Raghu Mudumbai, University of Iowa; D. R. Brown, Worcester Polytechnic Institute; Patrick Bidigare, Raytheon BBN Technologies*
- MA6b-2 Power Control for Collaborative Beamforming in Wireless Sensor Networks 10:40 AM  
*Mohammed Ahmed, Sergiy Vorobyov, University of Alberta*
- MA6b-3 Testing Zero-Feedback Distributed Beamforming with a Low-Cost SDR Testbed 11:05 AM  
*George Sklivanitis, Aggelos Bletsas, Technical University of Crete*
- MA6b-4 Distributed Cooperative Jamming for Improving Physical Layer Security 11:30 AM  
*Yupeng Liu, Athina Petropulu, Rutgers University; H. Vincent Poor, Princeton University*

## Session MA7b Multivariate and Multimodal Analysis of Brain Signals

Co-Chairs: *Justin Dauwels, Nanyang Technological University and Deniz Erdogmus, Northeastern University*

- MA7b-1 Sparse Common Spatial Patterns with Recursive Weight Elimination 10:15 AM  
*Fikri Goksu, Nuri F. Ince, University of Minnesota*
- MA7b-2 Identifying Multivariate EEG Synchronization Networks through Multiple Subject Community Detection 10:40 AM  
*Marcos Bolanos, Ali Yener Mutlu, Michigan State University; Edward Bernat, Florida State University; Selin Aviyente, Michigan State University*
- MA7b-3 Frequency Constrained ShifCP Modeling of Neuroimaging Data 11:05 AM  
*Morten Mørup, Technical University of Denmark*
- MA7b-4 Context Information Significantly Improves Brain Computer Interface Performance - A Case Study on Text Entry Using a Language Model Assisted BCI 11:30 AM  
*Umut Orhan, Northeastern University; Kenneth E. Hild II, Oregon Health and Science University; Deniz Erdogmus, Northeastern University; Brian Roark, Barry Oken, Melanie Fried-Oken, Oregon Health and Science University*

## Session MA8b1 Computer Arithmetic I

10:15 AM - 12:00 PM

- MA8b1-1 Efficient Decimal Leading Zero Anticipator Designs  
*Mohamed H. Amin, Ahmed M. ElTantawy, Hossam A. H. Fahmy, Cairo University*
- MA8b1-2 Hybrid Residue Generators for Increased Efficiency  
*Michael Sullivan, Earl Swartzlander, University of Texas at Austin*
- MA8b1-3 Nested Quadratic Arithmetic for Efficient Convolution of Complex Sequences with Quadratic Modified Fermat Number Transforms  
*Chandrashekar Radhakrishnan, University of Illinois; Kenneth Jenkins, Pennsylvania State University*
- MA8b1-4 On Building General Modular Adders from Standard Binary Arithmetic Components  
*Ghassem Jaberipur, Shahid Beheshti University; Behrooz Parhami, University of California, Santa Barbara; Saeed Nejati, Shahid Beheshti University*
- MA8b1-5 A Novel Adaptive Filter Implementation Scheme Using Distributed Arithmetic  
*Rui Guo, Linda S. DeBrunner, Florida State University*
- MA8b1-6 A Mixed-Precision Fused Multiply and Add  
*Nicolas Brunie, Kalray; Florent de Dinechin, École Normale Supérieure de Lyon; Benoit de Dinechin, Kalray*
- MA8b1-7 Implementation of 32-bit Ling and Jackson Adders  
*Matthew Keeter, David Harris, Andrew Macrae, Rebecca Glick, Madeleine Ong, Harvey Mudd College; Justin Schauer, Oracle*
- MA8b1-8 Truncated-Matrix Multipliers with Coefficient Shifting  
*E. George Walters III, Penn State Erie, The Behrend College; Michael J. Schulte, Advanced Micro Devices*

## Session MA8b2 Physical Layer Security I

Chair: *Wing-Kin (Ken) Ma, Chinese University of Hong Kong*

10:15 AM - 12:00 PM

- MA8b2-1 Faster than Nyquist Interference Assisted Secret Communication for OFDM Systems  
*Arsenia Chorti, H. Vincent Poor, Princeton University*
- MA8b2-2 QoS-Constrained Robust Beamforming in MISO Wiretap Channels with a Helper  
*Jing Huang, A. Lee Swindlehurst, University of California, Irvine*
- MA8b2-3 Secrecy Outage in MISO Systems with Partial Channel Information  
*Sabrina Gerbracht, Eduard Jorswieck, Dresden University of Technology*
- MA8b2-4 Secrecy Rate for Gaussian MISO Wiretap Channels with Spherical Uncertainty  
*Jiangyuan Li, Athina Petropulu, Rutgers University*

- MA8b2-5 Two-Way Discriminatory Channel Estimation for Non-Reciprocal Wireless MIMO Channels  
*Chao-Wei Huang, Tsung-Hui Chang, National Tsing Hua University; Xiangyun Zhou, University of Oslo; Y.-W. Peter Hong, National Tsing Hua University*
- MA8b2-6 Safe Convex Approximation to Outage-Based MISO Secrecy Rate Optimization under Imperfect CSI and with Artificial Noise  
*Qiang Li, Wing-Kin Ma, Anthony Man-Cho So, Chinese University of Hong Kong*
- MA8b2-7 Benefits of Multiple Transmit Antennas in Secure Communication: A Secrecy Outage Viewpoint  
*Xi Zhang, Hong Kong University of Science and Technology; Xiangyun Zhou, University of Oslo; Matthew McKay, Hong Kong University of Science and Technology*
- MA8b2-8 Confidential Messages in Bi-Directional Relay Networks under Channel Uncertainty  
*Rafael F. Wyrembelski, Holger Boche, Technische Universität München*

### Session MA8b3 Physical Layer Security II

Chair: *Wing-Kin (Ken) Ma, Chinese University of Hong Kong*

10:15 AM - 12:00 PM

- MA8b3-1 A Full-Duplex Active Eavesdropper in MIMO Wiretap Channels: Construction and Countermeasures  
*Amitav Mukherjee, Lee Swindlehurst, University of California, Irvine*
- MA8b3-2 RF Fingerprinting of Users Who Actively Mask Their Identities with Artificial Distortion  
*Adam Polak, Dennis Goeckel, University of Massachusetts Amherst*
- MA8b3-3 Power Allocation to Noise-Generating Nodes for Cooperative Secrecy in the Wireless Environment  
*Kyle Morrison, Dennis Goeckel, University Massachusetts Amherst*
- MA8b3-4 Comparing Random Signals with Application to Wireless User Authentication  
*Jitendra Tugnait, Auburn University*
- MA8b3-5 Transmit Beamforming and Cooperative Jamming for MIMOME Wiretap Channels  
*Wei Shi, James Ritcey, University of Washington*
- MA8b3-6 Secrecy in Broadcast Channels with Receiver Side Information  
*Rafael Wyrembelski, Universitat Munchen; Aydin Sezgin, Ulm University; Holger Boche, Universitat Munchen*
- MA8b3-7 On the Ergodic Secrecy Capacity of the Wiretap Channel under Imperfect Main Channel Estimation  
*Zouheir Rezeki, King Abdullah University of Science and Technology; Ashish Khisti, University of Toronto; Mohamed-Slim Alouini, King Abdullah University of Science and Technology*

- MA8b3-8 Secure Wireless Multicasting Through Nakagami-m Fading MISO Channel  
*Md. Zahurul I. Sarkar, Tharmalingam Ratnarajah, Queen's University Belfast*

### Session MA8b4 Image, Video Coding and Analysis

Chair: *Vishal Monga, Pennsylvania State University*

10:15 AM - 12:00 PM

- MA8b4-1 JPEG Image Compression Using Quantization Table Optimization Based on Perceptual Image Quality Assessment  
*Yuebing Jiang, Marios Pattichis, University of New Mexico*
- MA8b4-2 Efficient Coders for Large Tree-Structured Dictionaries of Tilings  
*Kai-Lung Hua, National Taiwan University of Science and Technology; Rong Zhang, Qualcomm Incorporated; Mary Comer, Ilya Pollak, Purdue University*
- MA8b4-3 Variable Block Size-Based MCFI with Fixed Block Size Motion Estimation  
*Masaru Hoshi, Akihiro Yoshinari, Yuichi Tanaka, Madoka Hasegawa, Shigeo Kato, Utsunomiya University*
- MA8b4-4 A Structural Similarity Assessment for Generating Hybrid Images  
*Keita Takahashi, Madoka Hasegawa, Yuichi Tanaka, Shigeo Kato, Utsunomiya University*
- MA8b4-5 A Compact Saliency Model for Video-Rate Implementation  
*Tien Ho-Phuoc, Laurent Alacoque, Antoine Dupret, CEA; Anne Guérin-Dugué, GIPSA-Lab; Arnaud Verdant, CEA*
- MA8b4-6 Dithered Soft Decision Quantization for Baseline JPEG Encoding and its Joint Optimization with Huffman Coding and Quantization Table Selection  
*En-hui Yang, Chang Sun, University of Waterloo*
- MA8b4-7 Compressive Sensing Based Imaging via Beleaf Propagation  
*Preethi Ramchandara, Mina Sartipi, University of Tennessee Chattanooga*

### Session MA8b5 Adaptive Systems and Spectral Estimation

Chair: *Vitor Nascimento, University of Sao Paulo*

10:15 AM - 12:00 PM

- MA8b5-1 A Modified System-Based Adaptive Algorithm for a Sparse Reconfigurable Photonic Filter  
*Suk-seung Hwang, Hong Chang, Chosun University; John J. Shynk, University of California, Santa Barbara*
- MA8b5-2 A New Variable Step-Size Strategy For Adaptive Networks  
*Muhammad Bin Saeed, Azzedine Zerguine, King Fahd University of Petroleum & Minerals*

- MA8b5-3 A Comparison of Methods for Estimating Broadband Noise in the Frequency Domain  
*Don Hush, Norma Pawley, Kary Myers, Robert Nemzek, Los Alamos National Laboratory*
- MA8b5-4 An Information Filter for Voice Prompt Suppression  
*John McDonough, Carnegie Mellon University; Kenichi Kumatani, Disney Research; Bhiksha Raj, Carnegie Mellon University; Jill Lehman, Disney Research*
- MA8b5-5 Embedded Track Validation for Tree Search-Based Tracking of Maneuvering Targets  
*Hossein Roufarshbaf, Jill Nelson, George Mason University*
- MA8b5-6 Urban Terrain Multiple Target Tracking Using Probability Hypothesis Density Particle Filtering  
*Meng Zhou, Bhavana Chakraborty, Jun Jason Zhang, Arizona State University*
- MA8b5-7 High-Resolution Non-Parametric Spectral Estimation Using the Hirschman Optimal Transform  
*Guifeng Liu, Victor DeBrunner, Florida State University*
- MA8b5-8 Co-Prime Sampling for System Stabilization with FIR Multi-Rate Controllers  
*P. P. Vaidyanathan, Piya Pal, California Institute of Technology*

### Session MP1a Interference-Alignment Techniques for Multi-Antenna Systems

Chair: *Vincent Lau, Hong Kong University of Science and Technology*

- MP1a-1 Interference Alignment for Peer-to-Peer Underlay MIMO Cognitive Radio Network 1:30 PM  
*Huiqin Du, Tharm Ratnarajah, Haichuan Zhou, Queen's University Belfast; Ying Chang Liang, Institute for Infocomm Research*
- MP1a-2 Sum Rate Enhancement by Maximizing SGINR in an Opportunistic Interference Alignment Scheme 1:55 PM  
*Seong-Ho (Paul) Hur, University of California, San Diego; Bang-Chul Jung, Gyeongsang National University; Bhaskar D. Rao, University of California, San Diego*
- MP1a-3 Interference Alignment for Partially Connected Quasi-static MIMO Interference Channel 2:20 PM  
*Liangzhong Ruan, Vincent K.N. Lau, Hong Kong University of Science and Technology*
- MP1a-4 Opportunistic MU-MIMO based on Semi-Blind Interference Alignment 2:45 PM  
*Haralabos Papadopoulos, Sayan Mukherjee, Sean Ramprasad, DoCoMo USA Labs*

### Session MP1b Interference Alignment for the MIMO Interference Channel

Chair: *Geert Leus, Technical University of Delft*

- MP1b-1 Linear Interference Alignment and its Maximum Achievable Degrees of Freedom 3:30 PM  
*Meisam Razaviyayn, Gennady Lyubeznik, Zhi-Quan Luo, University of Minnesota*
- MP1b-2 MIMO Interference Alignment in Random Access Networks 3:55 PM  
*Behrang Nosrat-Makouei, Radha Krishna Ganti, Jeffrey G. Andrews, Robert W. Heath, Jr., University of Texas at Austin*
- MP1b-3 The Noisy MIMO Interference Channel with Distributed CSI Acquisition and Filter Computation 4:20 PM  
*Francesco Negro, Eurecom; Umer Salim, Irfan Ghauri, Intel Corporation; Dirk Slock, Eurecom*
- MP1b-4 Secure Space-Time Block Coding via Artificial Noise Alignment 4:45 PM  
*S. Ali A. Fakoorian, A. Lee Swindlehurst, University of California, Irvine*

### Session MP2a Energy-Harvesting Wireless Networks

Chair: *Oswaldo Simeone, NJIT*

- MP2a-1 AWGN Channel under Time-Varying Amplitude Constraints with Causal Information at the Transmitter 1:30 PM  
*Omur Ozel, Sennur Ulukus, University of Maryland*
- MP2a-2 Optimal Power Control for Energy Harvesting Transmitters in an Interference Channel 1:55 PM  
*Kaya Tutuncuoglu, Aylin Yener, Penn State University*
- MP2a-3 Queuing Theoretic and Information Theoretic Capacity of Energy Harvesting Sensor Nodes 2:20 PM  
*Vinod Sharma, Indian Institute of Science; Ramachandran Rajesh, Centre for Airborne Systems*
- MP2a-4 Queue and Power Control for Rechargeable Sensor Networks under the SINR Interference Model 2:45 PM  
*Zhoujia Mao, Can Emre Koksak, Ness B. Shroff, Ohio State University*

### Session MP2b Coding and Decoding

Chair: *Aydin Sezgin, University of Ulm*

- MP2b-1 Complexity Analysis of Interior Point Methods for LP Decoding 3:30 PM  
*Yifan Sun, Lara Dolecek, University of California, Los Angeles*
- MP2b-2 Rate Adaptive Non-Binary LDPC Codes with Low Encoding Complexity 3:55 PM  
*Nicholas Chang, MIT Lincoln Laboratory*

MP2b-3 Achieving Flexibility in LDPC Code Design by Absorbing Set Elimination 4:20 PM  
*Jiajun Zhang, Jiadong Wang, University of California, Los Angeles; Shayan Garani Srinivasa, Western Digital Corporation; Lara Dolecek, University of California, Los Angeles*

MP2b-4 Decoding by Detection: Soft-Input/Soft-Output Error Correction Decoders for Arbitrary Binary Linear Codes 4:45 PM  
*Todd Moon, Jacob (Jake) Gunther, Utah State University*

### Session MP3a Graphical Models in Signal Processing II

Chair: *Alex Ihler, University of California, Irvine*

MP3a-1 Concept Graphs for a Personalized Learning System 1:30 PM  
*Andrew Waters, Richard Baraniuk, Rice University*

MP3a-2 Inference and Learning for Continuous-Time Stochastic Systems 1:55 PM  
*Christian Shelton, E. Busra Celikkaya, University of California, Riverside*

MP3a-3 Approximate Bayesian Inference for Robust Speech Processing 2:20 PM  
*Ciira Maina, John Walsh, Drexel University*

MP3a-4 Out-of-Sequence Measurements and Incremental Inference in Graphical Models 2:45 PM  
*Ozgur Sumer, University of Chicago; Ramgopal Mettu, University Massachusetts Amherst; Umut Acar, MPI-SWS; Alexander Ihler, University of California, Irvine*

### Session MP3b Signal Processing and Learning in Complex Systems

Chair: *Andrew Singer, University of Illinois at Urbana-Champaign*

MP3b-1 Diffusion Adaptation over Networks of Particles Subject to Brownian Fluctuations 3:30 PM  
*Ali Sayed, Faten Sayed, University of California, Los Angeles*

MP3b-2 Trust, Opinion Diffusion and Radicalization in Social Networks 3:55 PM  
*Lin Li, Anna Scaglione, University of California, Davis; Ananthram Swami, Army Research Laboratory; Qing Zhao, University of California, Davis*

MP3b-3 Disentangling Mixed Preference Systems and Hidden Variables 4:20 PM  
*Constantine Caramanis, University of Texas at Austin*

MP3b-4 Unity Versus Diversity in a Population of Interacting Adaptive Agents: the Value of Extrinsic Gossip 4:45 PM  
*Andrew Bean, Andrew Singer, University of Illinois at Urbana Champaign*

### Session MP4a Compressive Sensing Applications in Networking

Co-Chairs: *Jarvis Haupt, University of Minnesota and Michael Rabbat, McGill University*

MP4a-1 Sparse Recovery of Temporally Changing Networks: Longitudinal Modeling of Brain Networks in Children 1:30 PM  
*Moo Chung, Jamie Hanson, Seth Pollak, University of Wisconsin*

MP4a-2 Unveiling Anomalies in Large-Scale Networks via Sparsity and Low Rank 1:55 PM  
*Morteza Mardani, Gonzalo Mateos, Georgios B. Giannakis, University of Minnesota*

MP4a-3 Random Access Compressed Sensing: An Integrated Architecture for Energy-Efficient Networking 2:20 PM  
*Fatemeh Fazel, Northeastern University; Maryam Fazel, University of Washington; Milica Stojanovic, Northeastern University*

MP4a-4 Recent Results on Sparse Recovery over Graphs 2:45 PM  
*Weiyu Xu, Meng Wang, Enrique Mallada, Ao Kevin Tang, Cornell University*

### Session MP4b Resource Allocation in Wireless Networks

Chair: *Rahul Uргаonkar, University of Southern California*

MP4b-1 MSE-Optimal Power Allocation in Wireless Sensor Networks for Field Reconstruction Based on Shift-Invariant Spaces 3:30 PM  
*Günter Reize, Vienna University of Technology; Javier Matamoros, Carles Antón-Haro, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Gerald Matz, Vienna University of Technology*

MP4b-2 Spatial Interference Mitigation for Multiple-Input Multiple-Output Ad Hoc Networks 3:55 PM  
*Salam Akoum, University of Texas at Austin; Marios Kountouris, Merouane Debbah, Supélec; Robert W. Heath, Jr., University of Texas at Austin*

MP4b-3 A Greedy Link Scheduler for Wireless Networks with Fading Channels 4:20 PM  
*A. Sridharan, Emre Koksal, Ohio State University*

MP4b-4 Radio Resource Management in Heterogeneous Deployments: a System Level Perspective 4:45 PM  
*Thomas Wirth, Fraunhofer Heinrich Hertz Institute*

## Session MP5a Advances in Bioimaging and Analysis

Chair: *Jean-Christophe Olivo-Marin, Institut Pasteur*

- MP5a-1 Quantitative Synaptic Vesicle Imaging for Evaluating Neuron Activities in Neurodegenerative Diseases 1:30 PM  
*Jing Fan, Xiaofeng Xia, Stephen Wong, Methodist Hospital Research Institute*
- MP5a-2 Flexible and Efficient Multi-Region Segmentation Using Active Contours 1:55 PM  
*Grégory Paul, Janick Cardinale, Ivo F. Sbalzarini, ETH Zurich*
- MP5a-3 Nanometer Resolution Imaging and Tracking of Axonal Cargo Transport in Normal and Degenerative Neurons 2:20 PM  
*Ge Yang, Carnegie Mellon University*
- MP5a-4 Statistical Colocalization of Molecular Species in Biological Imaging 2:45 PM  
*Vannary Meas-Yedid, Cyril Basquin, Nathalie Sauvonnnet, Jean-Christophe Olivo-Marin, Institut Pasteur*

## Session MP5b Image/Video Restoration, Enhancement and Evaluation

Chair: *Mary Comer, Purdue University*

- MP5b-1 Tikhonov's Regularization Functional for Image Restoration by Means of q-Discrepancy 3:30 PM  
*Vania V. Estrela, Universidade Federal Fluminense; Aggelos K. Katsaggelos, Northwestern University*
- MP5b-2 Equivalence of Plenoptic Cameras 3:55 PM  
*Todor Georgiev, Adobe; Sergio Goma, Qualcomm Incorporated; Andrew Lumsdaine, Adobe*
- MP5b-3 Referenceless Image Spatial Quality Evaluator 4:20 PM  
*Anish Mittal, Anush Moorthy, Alan Bovik, Wireless Networking and Communications Group*
- MP5b-4 Noise Model Discrimination for Digital Images based on Variance-Stabilizing Transforms and on Local Statistics: Preliminary Results 4:45 PM  
*Paul Rodriguez, Pontificia Universidad Catolica del Peru*

## Session MP6a Tensor-based Array Signal Processing

Chair: *Martin Haardt, Ilmenau University of Technology*

- MP6a-1 Modeling Latency and Shape Changes in Trial Based Neuroimaging Data 1:30 PM  
*Morten Mørup, Technical University of Denmark; Kristoffer Hougaard Madsen, Hvidovre Hospital; Lars Kai Hansen, Technical University of Denmark*

- MP6a-2 Canonical Decomposition of Non-Negative arrays 1:55 PM  
*Julie Coloigner, Laurent Albera, Lotfi Senhadji, Amar Kachenoura, University of RENNES 1, LTSI and INSERM, UMR 642*

- MP6a-3 Tensor-Based Semi-Blind Channel Estimation for MIMO OSTBC-Coded Systems 2:20 PM  
*Florian Roemer, Ilmenau University of Technology; Nima Sarmadi, Technische Universität Darmstadt; Bin Song, Martin Haardt, Ilmenau University of Technology; Marius Pesavento, Alex Gershman, Technische Universität Darmstadt*

- MP6a-4 Tensor Decompositions with Block-Toeplitz Structure and Applications in Signal Processing 2:45 PM  
*Mikael Sorensen, Lieven De Lathauwer, K.U. Leuven*

## Session MP6b Compressive Sensing for Array Processing

Chair: *Benjamin Friedlander, University of California, Santa Cruz*

- MP6b-1 The MUSIC Algorithm for Compressive Imaging: Noise Stability and Performance Guarantee 3:30 PM  
*Albert Fannjiang, University of California, Davis*
- MP6b-2 Some Theoretical Results for Compressive Radar 3:55 PM  
*Thomas Strohmer, University of California, Davis; Benjamin Friedlander, University of California, Santa Cruz*
- MP6b-3 Sensitivity Considerations in Compressed Sensing 4:20 PM  
*Louis Scharf, Ali Pezeshki, Colorado State University; Yuejie Chi, Princeton University*
- MP6b-4 Coherence, Compressive Sensing and Random Sensor Arrays 4:45 PM  
*Lawrence Carin, Duke University*

## Session MP7a Processing of Physiological Signals

Co-Chairs: *Nuri Firat Ince, University of Minnesota and Morten Mørup, Technical University of Denmark*

- MP7a-1 Does the Morphology of High-Frequency (100-500 Hz) Brain Oscillations Change During Epileptic Seizures? 1:30 PM  
*Allison Pearce, Drausin Wulsin, Brian Litt, Justin Blanco, University of Pennsylvania*
- MP7a-2 Early Investigations into Subjective Audio Quality Assessment Using Brainwave Responses 1:55 PM  
*Charles Creusere, Srikant Siddenki, New Mexico State University; Joe Hardin, Colorado State University; Jim Kroger, New Mexico State University*

- MP7a-3    Electrocardiogram Signal Modeling and Estimation Using the Interacting Multiple Model Particle Filtering    2:20 PM  
*Shwetha Edla, Narayan Kovvali, Antonia Papandreou-Suppappola, Arizona State University*
- MP7a-4    A Novel Approach for Simulation, Measurement and Representation of Surface EMG (sEMG) Signals    2:45 PM  
*Anvith Mahabalagiri, Khadeer Ahmed, Fred Schlereth, Syracuse University*

### Session MP7b    Model-based Design Optimization

Chair: *Sankalita Saha, NASA, USA*

- MP7b-1    Distributed Energy and Environment Sensing for Smart Building Management    3:30 PM  
*Chen Xia, Hao Liu, Xiangrong Zhou, University of Hawaii*
- MP7b-2    FPGA-Accelerator System for Computing Biologically-Inspired Feature Extraction Models    3:55 PM  
*Michael DeBole, Pennsylvania State University; Chuli Yu, Arizona State University; Ahmed Al Maashri, Matthew Cotter, Pennsylvania State University; Chaitali Chakrabarti, Arizona State University; Vijaykrishnan Narayanan, Pennsylvania State University*
- MP7b-3    A Machine Model for Dataflow Actors and its Applications    4:20 PM  
*Jorn W. Janneck, Lund University*
- MP7b-4    Operation Set Customization in Retargetable Compilers    4:45 PM  
*Heikki Kultala, Pekka Jääskeläinen, Mikael Lepistö, Jarmo Takala, Tampere University of Technology*

### Session MP8a1    Adaptive Filtering

Chair: *Ricardo Merched, Universidade Federal do Rio de Janeiro*

1:30 PM - 3:10 PM

- MP8a1-1    Simplified Complex LMS Algorithm for the Cancellation of Second-Order TX Intermodulation Distortions in Homodyne Receivers    1:30 PM  
*Christian Lederer, Mario Huemer, Alpen-Adria-Universitaet Klagenfurt*
- MP8a1-2    A Steady-State Analysis of the E-Normalized Sign-Error Least Mean Square (NSLMS) Adaptive Algorithm    1:30 PM  
*Mohammed Faiz, Azzedine Zerguine, King Fahd University of Petroleum & Minerals*
- MP8a1-3    A Modified Non-Negative LMS Algorithm and its Stochastic Behavior Analysis    1:30 PM  
*Jie Chen, Cédric Richard, Université de Nice Sophia-Antipolis; Jose Bermudez, Federal University of Santa Catarina; Paul Honeine, Université de Technologie de Troyes*
- MP8a1-4    A Robust LMS Adaptive Algorithm over Distributed Networks    1:30 PM  
*Muhammad Bin Saeed, Azzedine Zerguine, Salam Zummo, King Fahd University of Petroleum & Minerals*

- MP8a1-5    Error-Based “Gear-Shifting” for a Generalized LMS Algorithm    1:30 PM  
*John J. Shynk, University of California, Santa Barbara*
- MP8a1-6    A Variable Step-Size GMDF and its Performance Analysis    1:30 PM  
*Hsu-Chang Huang, Junghsi Lee, Yuan-Ze University*
- MP8a1-7    Acoustic Feedback and Echo Cancellation Strategies for Multiple-Microphone and Single-Loudspeaker Systems    1:30 PM  
*Meng Guo, Thomas Bo Elmedy, Oticon A/S; Søren Holdt Jensen, Aalborg University; Jesper Jensen, Oticon A/S*
- MP8a1-8    Comparison of Two Techniques for Linear-Phase Adaptive Band-Stop Filters    1:30 PM  
*Michael Soderstrand, University of California (Retired)*

### Session MP8a2    Speech Processing, Recognition and Coding

Chair: *Jerry Gibson, University of California, Santa Barbara*

1:30 PM - 3:10 PM

- MP8a2-1    Automatic Phoneme Recognition with Segmental Hidden Markov Models    1:30 PM  
*Areg Baghdasaryan, A. A. (Louis) Beex, Virginia Polytechnic Institute and State University*
- MP8a2-2    A Perceptually Re-Weighted Mixed-Norm Method for Sparse Approximation of Audio Signals    1:30 PM  
*Mads Christensen, Bob Sturm, Aalborg University*
- MP8a2-3    Scalable Multimode Tree Coder with Perceptual Pre-Weighting and Post-Weighting for Wideband Speech Coding    1:30 PM  
*Ying-Yi Li, Jerry Gibson, University of California, Santa Barbara*
- MP8a2-4    Isolated Word Endpoint Detection Using Time-Frequency Variance Kernels    1:30 PM  
*Alexandros Kyriakides, Costas Pitris, University of Cyprus; Andreas Spanias, Arizona State University*
- MP8a2-5    Performance Enhanced Multi-Rate iLBC    1:30 PM  
*Koji Seto, Tokunbo Ogunfunmi, Santa Clara University*
- MP8a2-6    Enabling Improved Speaker Recognition by Voice Quality Estimation    1:30 PM  
*Anthony Bartos, Welkin Associates, Ltd.; Douglas Nelson, U.S. Department of Defense*

### Session MP8a3    Parameter Estimation

Chair: *P.P. Vaidyanathan, California Institute of Technology*

1:30 PM - 3:10 PM

- MP8a3-1    On Spatial Smoothing of High Resolution Direction Finding of Real-Valued Sinusoidal Signals    1:30 PM  
*H. Howard Fan, University of Cincinnati; Stewart DeVilbiss, Air Force Research Laboratory*



MP8a3-2 Non-Uniform Linear Arrays for Improved Identifiability in Cumulant Based DOA Estimation  
*Piya Pal, P. P. Vaidyanathan, California Institute of Technology*

MP8a3-3 Knowledge-Aided Direction Finding Based on Unitary ESPRIT  
*Jens Steinwandt, Ilmenau University of Technology; Rodrigo C. de Lamare, University of York; Martin Haardt, Ilmenau University of Technology*

MP8a3-4 Maximum Likelihood Time Delay Estimation for CDMA Direct-Spread Multipath Transmissions Using Importance Sampling  
*Ahmed Masmoudi, Faouzi Bellili, Sofiene Affes, INRS-EMT*

MP8a3-5 Particle Filter Based DOA Estimation for Multiple Source Tracking (MUST)  
*Thomas Wiese, Technical University Munich; Heiko Claussen, Justinian Rosca, Siemens Corporation, Corporate Research*

MP8a3-6 Direction-of-Arrival Estimation Using Distributed Body Area Networks: Error & Refraction Analysis  
*Kaveh Ghaboosi, Pranay Pratap Swar, Kaveh Pahlavan, Worcester Polytechnic Institute*

MP8a3-7 Bayesian Estimation of a Subspace  
*Olivier Besson, University of Toulouse-ISAIE; Nicolas Dobigeon, Jean-Yves Tournet, University of Toulouse-IRIT/ENSEIHT*

MP8a3-8 Model Order Selection in Sensor Array Response Modeling  
*Mário Costa, Andreas Richter, Visa Koivunen, Aalto University*

## Session MP8a4 DSP Algorithms and Architectures

Chair: *Michael Schulte, AMD, USA*

1:30 PM - 3:10 PM

MP8a4-1 High Dynamic Range Adaptive Delta-Sigma Based Focal Plane Array Architecture  
*Shun Yao, Marvel Semiconductors; Sam Kavusi, Khaled N Salama, King Abdullah University of Science and Technology*

MP8a4-2 Block Circular and Hyperbolic Transformations for the Block Fast Array RLS Algorithm  
*Roger West, Todd Moon, Jacob (Jake) Gunther, Utah State University*

MP8a4-3 The Polyphase Random Demodulator for Wideband Compressive Sensing  
*J.P. Slavinsky, Jason Laska, Richard Baraniuk, Rice University*

MP8a4-4 A Floating-Point Fused FFT Butterfly Arithmetic Unit with Merged Multiple-Constant Multipliers  
*Jae Hong Min, Seong-Wan Kim, Earl Swartzlander, University of Texas at Austin*

MP8a4-5 Exploiting Cross-Channel Quantizer Error Correlation in Time-Interleaved Analog-to-Digital Converters  
*Joseph G. McMichael, Shay Maymon, Alan V. Oppenheim, Massachusetts Institute of Technology*

## Session MP8a5 Novel DSP Architectures

Chair: *David Thomas, Imperial College London, UK*

1:30 PM - 3:10 PM

MP8a5-1 In-Service Reconfiguration of Signal Processing Components  
*Gordon Brebner, Christopher Neely, Shay Seng, Xilinx, Inc.*

MP8a5-2 Rethinking Computation Using FPGA Based Accelerators for Large Applications  
*Dennis Allison, Michael J Flynn, Oskar Mencer, Maxeler Technologies*

MP8a5-3 Versatile FPGA DSP Blocks with Carry-Save Arithmetic Support  
*Hadi Parandeh Afshar, Paolo Ienne, École Polytechnique Fédérale de Lausanne (EPFL)*

MP8a5-4 Scalable Acceleration of High-Performance, Fourier-Domain Optical Coherence Tomography  
*Lesley Shannon, Simon Fraser University*

MP8a5-5 Fine-Grain Reconfigurable Functional Unit for Embedded Processors  
*Gian Carlo Cardarilli, Luca Di Nunzio, Rocco Fazzolari, Marco Re, University of Rome Tor Vergata*

MP8a5-6 Increasing Productivity of Reconfigurable Computing for Signal Processing  
*Wayne Luk, Imperial College London*

MP8a5-7 Synchronous and Asynchronous Computations with Molecular Reactions  
*Hua Jiang, Marc D. Riedel, Keshab K. Parh Parhi, University of Minnesota*

MP8a5-8 Design and Implementation of a Flexible Queue Manager for Next Generation Networks  
*Qi Zhang, Roger Woods, Alan Marshall, Queen's University Belfast*

## Session TA1a Random Matrices in Signal Processing and MIMO Communications

Chair: *Matthew McKay, Hong Kong University of Science and Technology*

TA1a-1 Beyond Eckart-Young-Mirsky: Exploiting Random Matrix Theory to Improve Subspace Approximation  
*Raj Rao Nadakuditi, University of Michigan* 8:15 AM

TA1a-2 Beyond IID Gaussian Matrices in Compressed Sensing 8:40 AM  
*Antonia Tulino, Bell Laboratories, Alcatel-Lucent; Giuseppe Caire, University of Southern California; Shlomo Shamai, Technion-Israel Institute of Technology; Sergio Verdú, Princeton University*

TA1a-3 Mutual Information Distribution of Interference-Limited MIMO: A Joint Coulomb Fluid and Painlevel Based Approach 9:05 AM  
*Shang Li, Hong Kong University of Science and Technology; Yang Chen, Imperial College London; Matthew McKay, Hong Kong University of Science and Technology*

TA1a-4 Outage Capacity for MIMO-OFDM Systems in Block Fading Channels 9:30 AM  
*Marco Chiani, University of Bologna; Andrea Conti, University of Ferrara; Matteo Mazzotti, Enrico Paolini, University of Bologna; Alberto Zanella, WiLab/IEIT-BO CNR*

### Session TA1b Biosignal Estimation and Classification

Co-Chairs: *Ulisses Braga-Neto, Texas A&M University and Antonia Papandreou-Suppappola, Arizona State University*

TA1b-1 A Real-Time Reconstruction Algorithm for the Integrate and Fire Sampler 10:15 AM  
*Alexander Singh Alvarado, Jose Principe, University of Florida*

TA1b-2 Using Physiological Signals to Predict Apnea in Preterm Infants 10:40 AM  
*James Williamson, Daniel Bliss, David Browne, MIT Lincoln Laboratory; Elisabeth Salisbury, Premananda Indic, David Paydarfar, University of Massachusetts Medical School*

TA1b-3 Assessing Dysarthria Severity Using Global Statistics and Boosting 11:05 AM  
*Alicia DeMino, General Dynamics; Robert Kubichek, University of Wyoming; Kevin Caves, Duke University*

TA1b-4 Characterization of Human Use of Ethanol Based on Video Games with Ethanol Rewards: Model, System Identification and Statistical Performance 11:30 AM  
*Ipek Ozil, Cornell University; Martin H. Plawecki, Indiana University School of Medicine; Peter C. Doerschuk, Cornell University; Sean J. O'Connor, Indiana University School of Medicine*

### Session TA2a Network Coding

Chair: *Athina Markopoulou, University of California, Irvine*

TA2a-1 Network Alignment 8:15 AM  
*Syed Jafar, University of California, Irvine*

TA2a-2 Network Coding for Data Replication over Wireless Networks 8:40 AM  
*Lorenzo Keller, Christina Fragouli, École Polytechnique Fédérale de Lausanne (EPFL)*

TA2a-3 A Fundamental Approach to Securing Data in the Cloud from Adversarial Attacks 9:05 AM  
*Salim El Rouayheb, Sameer Pawar, Kannan Ramchandran, University of California, Berkeley*

TA2a-4 Network Coding for Security and Privacy 9:30 AM  
*Tracey Ho, California Institute of Technology*

### Session TA2b Relaying through Frequency Selective Channels

Chair: *Andy Klein, Worcester Polytechnic Institute*

TA2b-1 Distributed Single Carrier Frequency-Domain Equalization for Multi-Relay Cooperative Networks over Frequency Selective Rician Channels 10:15 AM  
*Homa Eghbali, Sami Muhaidat, Simon Fraser University; Ibrahim Abualhaol, Khalifa University of Science, Technology and Research*

TA2b-2 Cooperative BICM-OFDM Systems for Frequency-Selective Relay Channels 10:40 AM  
*Reza Heidarpour, Murat Uysal, University of Waterloo*

TA2b-3 On Relay Selection in Frequency Selective Channels 11:05 AM  
*Qingxiang Deng, Andrew Klein, Worcester Polytechnic Institute*

TA2b-4 Superposition Coding for Cooperative BICM-OFDM Systems 11:30 AM  
*Toufique Islam, Robert Schober, University of British Columbia; Ranjan K Mallik, Indian Institute of Technology, Delhi; Vijay K Bhargava, University of British Columbia*

### Session TA3a Advances in Compressive Sensing

Chair: *Christoph Studer, Rice University*

TA3a-1 An Empirical-Bayes Approach to Compressive Sensing via Approximate Message Passing 8:15 AM  
*Jeremy Vila, Philip Schniter, Ohio State University*

TA3a-2 Compressive Sensing under Multiplicative Uncertainties: An Approximate Message Passing Approach 8:40 AM  
*Jason Parker, Air Force Research Laboratory; Volkan Cevher, École Polytechnique Fédérale de Lausanne (EPFL); Philip Schniter, Ohio State University*

TA3a-3 Compressive Sensing: to Compress or not to Compress 9:05 AM  
*Davis Kirachaiwanich, Qilian Liang, University of Texas at Arlington*

TA3a-4 Spread Representations 9:30 AM  
*Jean Jacques Fuchs, Université de Rennes I*

## Session TA3b Sparse Reconstruction

Chair: *Geert Leus, Technical University of Delft*

- TA3b-1 New Bounds for Restricted Isometry Constants in Orthogonal Multi Matching Pursuit 10:15 AM  
*Jian Wang, Byonghyo Shim, Korea University*
- TA3b-2 Cyclic Greedy Algorithms for Recovering Compressively Sampled Sparse Signals 10:40 AM  
*Bob Sturm, Mads Christensen, Aalborg University; Rémi Gribonval, INRIA*
- TA3b-3 Greedy Sparsity-Constrained Optimization 11:05 AM  
*Sohail Bahmani, Carnegie Mellon University; Petros Boufounos, Mitsubishi Electric Research Labs; Bhiksha Raj, Carnegie Mellon University*
- TA3b-4 Power-Iterative Strategy for  $l_p$ - $l_2$  Optimization for Compressive Sensing: Towards Global Solution 11:30 AM  
*Jie Yan, Wu-Sheng Lu, University of Victoria*

## Session TA4a Next Generation Network Science

Co-Chairs: *Victor Preciado, University of Pennsylvania and Ali Jadbabaie, University of Pennsylvania*

- TA4a-1 Network Synthesis for Dynamical System Stabilization 8:15 AM  
*Miroslav Pajic, University of Pennsylvania; Shreyas Sundaram, University of Waterloo; George Pappas, Rahul Mangharam, University of Pennsylvania*
- TA4a-2 A Contrasting Look at Network Formation Models and Their Application to the Minimum Spanning Tree 8:40 AM  
*David Alderson, Gerald Brown, Naval Postgraduate School; D.B. McPherson, U.S. Navy*
- TA4a-3 The Role of Local Structural Information in Viral Information Spreading 9:05 AM  
*Victor Preciado, Ali Jadbabaie, University of Pennsylvania*
- TA4a-4 Learning, Memory and the Role of Neural Network Architecture 9:30 AM  
*Ann Hermundstad, Kevin Brown, Danielle Bassett, Jean Carlson, University of California, Santa Barbara*

## Session TA4b Bio-inspired Models and Algorithms for Information Processing in Complex Networks

Chair: *Usman Khan, Tufts University*

- TA4b-1 On Scheduling Without a Master Clock: Coupled Oscillator Time Division Multiplexing 10:15 AM  
*Andrea Rueetschi, Anna Scaglione, University of California, Davis*

- TA4b-2 On the Effects of Topology and Node Distribution on Learning over Complex Adaptive Networks 10:40 AM  
*Sheng-Yuan Tu, Ali H. Sayed, University of California, Los Angeles*

- TA4b-3 Discrete-Time Opinion Dynamics 11:05 AM  
*Seyed Rasoul Etesami, Angelia Nedic, University of Illinois at Urbana-Champaign*

- TA4b-4 Gossiping Information Dissemination Through Distributed Femtocell Caching 11:30 AM  
*Alexandros Dimakis, University of Southern California*

## Session TA5a Image and Video Retrieval

Chair: *Ramakrishna Vedantham, Nokia Research*

- TA5a-1 Mobile Visual Search Using Image and Text Features 8:15 AM  
*Sam Tsai, Huizhong Chen, David Chen, Stanford University; Ramakrishna Vedantham, Radek Grzeszczuk, Nokia; Bernd Girod, Stanford University*

- TA5a-2 A Compact Index for Large-Scale Mobile Visual Search 8:40 AM  
*David Chen, Sam Tsai, Vijay Chandrasekhar, Gabriel Takacs, Huizhong Chen, Stanford University; Ramakrishna Vedantham, Radek Grzeszczuk, Nokia Research Center; Bernd Girod, Stanford University*

- TA5a-3 Multiple-Channel Compact Visual Descriptor with Adaptive Channel Learning 9:05 AM  
*Rongrong Ji, Harbin Institute of Technology; Ling-Yu Duan, Jie Chen, Peking University; Hongxun Yao, Harbin Institute of Technology; Tiejun Huang, Wen Gao, Peking University*

- TA5a-4 Efficient Re-Ranking in Vocabulary Tree-Based Image Retrieval 9:30 AM  
*Xiaoyu Wang, University of Missouri; Ming Yang, Kai Yu, NEC Laboratories America, Inc.*

## Session TA5b Sparse Representations with Applications to Images and Video

Chair: *Trac Tran Tran, Johns Hopkins University*

- TA5b-1 Robust Multi-Dimensional Scaling via Outlier Sparsity Control 10:15 AM  
*Pedro Forero, Georgios Giannakis, University of Minnesota*

- TA5b-2 Architectures for Compressive Sampling of Correlated Signals 10:40 AM  
*Ali Ahmed, Justin Romberg, Georgia Institute of Technology*

- TA5b-3 Compressed-Sensing Recovery of Images and Video Using Multi-Hypothesis Predictions 11:05 AM  
*Chen Chen, Eric Tramel, James Fowler, Mississippi State University*

TA5b-4 Sparsity-Based Human Activity Recognition 11:30 AM  
for Mobile Computing Devices  
*Victor Shia, Allen Yang, Ruzena Bajcsy, University of California, Berkeley*

TA5b-5 Sparsity-Based Face Recognition Using 11:55 AM  
Discriminative Graphical Models  
*Umamahesh Srinivas, Vishal Monga, Pennsylvania State University; Yi Chen, Trac D. Tran, The Johns Hopkins University*

### Session TA6a Waveform Design and MIMO Radar

Chair: *Visa Koivunen, Aalto University*

TA6a-1 Cluster Allocation Schemes for Target 8:15 AM  
Tracking in Multiple Radar Architectures  
*Hana Godrich, Princeton University; Athina Petropulu, Rutgers University; H. Vince Poor, Princeton University*

TA6a-2 Synergistic MIMO SAR and GMTI 8:40 AM  
*Duc Vu, Luzhou Xu, Jian Li, University of Florida*

TA6a-3 Resource Allocation in Widely Distributed 9:05 AM  
MIMO Radars in Non-Ideal Conditions  
*Tuomas Aittomaki, Aalto University; Hana Godrich, Rutgers University; Visa Koivunen, Aalto University; H. Vincent Poor, Princeton University*

TA6a-4 Centralized and Distributed Tests for Moving 9:30 AM  
Target Detection with MIMO Radars in Clutter of Non-Homogeneous Power  
*Pu Wang, Hongbin Li, Stevens Institute of Technology; Braham Himed, Air Force Research Laboratory*

### Session TA6b Network Beamforming and Relaying via Multiple Antennas

Chair: *Sergiy Vorobyov, University of Alberta*

TA6b-1 Collaborative Beamforming in Wireless 10:15 AM  
Sensor Networks  
*Serkan Sayilir, Yung-Hsiang Lu, Dimitrios Peroulis, Y. Charlie Hu, Byunghoo Jung, Purdue University*

TA6b-2 Joint Power Control and Relay Design in 10:40 AM  
Underlay Cognitive Networks with Multiple Transmitter-Receiver Pairs  
*Keyvan Zarifi, Sofiene Affes, INRS-EMT; Ali Ghrayeb, Concordia University*

TA6b-3 Beamforming in MIMO Broadcast Relay 11:05 AM  
Networks with Multiple Antenna Users  
*Godfrey Okeke, Yindi Jing, Witold Krzymien, University of Alberta*

TA6b-4 A Relay Selection Approach to Bi-Directional 11:30 AM  
Collaborative Communications with Imperfect CSI  
*Fadhel Al-Humaidi, Shahram ShahbazPanahi, University of Ontario Institute of Technology*

### Session TA7 Architectures for Wireless Communications

Chair: *Joe Cavallero, Rice University*

TA7-1 An Efficient Architecture for Iterative Soft 8:15 AM  
Reliability-Based Majority-Logic Non-Binary LDPC Decoding  
*Xinmiao Zhang, Fang Cai, Case Western Reserve University*

TA7-2 Architecture Exploration, Development and 8:40 AM  
Teaching Platform for Orthogonal Frequency Division Multiplexing (OFDM) Systems  
*Antonio Mondragon-Torres, Mahesh Kommi, Tamoghna Bhattacharya, Rochester Institute of Technology*

TA7-3 Improved Iterative Soft-Reliability-Based 9:05 AM  
Majority-Logic Decoding Algorithm for Non-Binary Low-Density Parity-Check Codes  
*Chenrong Xiong, Zhiyuan Yan, Lehigh University*

TA7-4 LTE Layer 1 Software Design on Multi-Core 9:30 AM  
DSP Architectures  
*Arokia Irudayaraj, Michael Brogioli, Nitin Jain, Umang Garg, Freescale Semiconductor, Inc.*

BREAK 9:55 AM

TA7-5 Efficient FPGA Implementation of a High 10:15 AM  
Throughput Systolic Array QR-Decomposition Algorithm  
*Matthias Abels, Till Wiegand, Steffen Paul, University of Bremen*

TA7-6 Comparison of Performance and 10:40 AM  
Implementation Complexity of Soft-Output Sphere Detectors for MIMO-OFDM Systems  
*Markus Myllyla, Renesas Mobile Europe Ltd*

TA7-7 Time and Power Optimization in FPGA 11:05 AM  
Based Architectures for Polyphase Channelizers  
*Mehmood Awan, Peter Koch, Aalborg University; fred harris, San Diego State University*

TA7-8 Hardware Implementation of Kuiper-Based 11:30 AM  
Modulation Level Classification  
*Paulo Urriza, Eric Rebeiz, Danijela Cabric, University of California, Los Angeles*

### Session TA8a1 Signal Processing Methods for Representation, Analysis, and Control of Biological Systems

Co-Chairs: *Byung-Jun Yoon, Texas A&M and Xiaoning Qian, University of South Florida*

8:15 AM - 9:55 AM

TA8a1-1 Exact MSE Performance of the Bayesian MMSE 8:15 AM  
Estimator for Classification Error  
*Lori A. Dalton, Edward R. Dougherty, Texas A&M University*

- TA8a1-2 Misaligned Principal Component Analysis (Mis-PCA) for Gene Expression Time Series Analysis  
*Arnau Tibau-Puig, Alfred Hero, University of Michigan*
- TA8a1-3 Optimal Intervention Strategies for Cyclic Therapeutic Methods with Fixed-Length Duration of Effect  
*Mohammadmahdi R. Yousefi, Aniruddha Datta, Edward R. Dougherty, Texas A&M University*
- TA8a1-4 Maximum Likelihood Estimation of the Binary Coefficient of Determination  
*Ting Chen, Ulisses Braga-Neto, Texas A&M University*
- TA8a1-5 An MCMC Algorithm for Base Calling in Sequencing-by-Synthesis  
*Ting Wu, Haris Vikalo, University of Texas at Austin*
- TA8a1-6 Relationships Between Genetic Regulatory Network Models  
*Mehmet Umut Caglar, Ranadip Pal, Texas Tech University*
- TA8a1-7 Bayesian Networks Modeling of Cellular Regulatory Pathways  
*Chen Zhao, Ivan Ivanov, Texas A&M University; Michael Bittner, Translational Genomics Research Institute; Edward Dougherty, Texas A&M University*
- TA8a1-8 Haplotype Inference Based on Sparse Dictionary Selection  
*Guido Hugo Jajamovich, Xiaodong Wang, Columbia University*
- TA8a1-9 Surface-Constrained 3D Reconstruction in Cryo-EM  
*Andrew C. Barthel, Hemant Tagare, Fred J. Sigworth, Yale University*
- TA8a1-10 Phenotypically Constrained Stationary Control Policies for Gene Regulatory Network Intervention  
*Xiaoning Qian, University of South Florida; Edward Dougherty, Texas A&M University*
- TA8a1-11 Prediction of Cancer Subtypes Using Bayesian Factor Network Model  
*Jia Meng, University of Texas at San Antonio; Manuel Sánchez Castillo, University of Granada; Jianqiu Zhang, University of Texas at San Antonio; Isabel María Tienda Luna, University of Granada; Yufei Huang, University of Texas at San Antonio*
- TA8a1-12 Dynamical Processes on Networks: A Unified View  
*Garrett Jenkinson, John Goutsias, The Johns Hopkins University*
- TA8a1-13 A Brief Review of Signal Processing Issues in Mass Spectrometry-Based Proteomics Studies  
*Chao Yang, Weichuan Yu, Hong Kong University of Science and Technology*
- TA8a1-14 Fault Detection and Intervention in Biological Feedback Networks  
*Ritwik Layek, Aniruddha Datta, Texas A&M University*
- TA8a1-15 Fast Global Sequence Alignment Algorithm  
*Talal Bonny, Khaled Nabil Salama, King Abdullah University of Science and Technology*

- TA8a1-16 Optimal State Estimation for Boolean Dynamical Systems  
*Ulisses Braga-Neto, Texas A&M University*

## Session TA8a2 Receiver Design and Optimization

Chair: *Lara Dolecek, UCLA*

8:15 AM - 9:55 AM

- TA8a2-1 Incorporating Prior Information into Semi-Definite Relaxation of Quadratic Optimization Problems  
*Jacob (Jake) Gunther, Todd Moon, Utah State University*
- TA8a2-2 Diversity of the MMSE Receiver in Flat Fading and Frequency Selective MIMO Channels at Fixed Rate  
*Florian Dupuy, Thales Communication / Université Paris Est; Philippe Loubaton, Université Paris Est*
- TA8a2-3 Predicting the Pruning Potential on the Sphere Decoding for Multiple-Input Multiple-Output Detection  
*Hwanchol Jang, Gwangju Institute of Science and Technology; Saeid Nooshabadi, Michigan Technological University; Heung-No Lee, Gwangju Institute of Science and Technology*
- TA8a2-4 Computationally Efficient Design of the MAE Equalizer for Binary Signaling  
*Weiwei Zhou, Jill Nelson, George Mason University; Ananya Sen Gupta, Woods Hole Oceanographic Institution*
- TA8a2-5 Broadband Doppler Compensation: Principles and New Results  
*Thomas Riedl, Andrew Singer, University of Illinois at Urbana-Champaign*
- TA8a2-6 Optimal Pilot Symbol Power Allocation in Multi-Cell Scenario in LTE  
*Michal Simko, Markus Rupp, Vienna University of Technology*
- TA8a2-7 Coherent Demodulation of AIS-GMSK Signals in Co-Channel Interference  
*Douglas Nelson, Joseph Hopkins, U.S. Department of Defense; Anthony Bartos, Welkin Associates, Ltd.*
- TA8a2-8 On the Stability of DSP Based PI Phase-Locked Loops Containing Matched Filter Delays  
*fredric harris, San Diego State University; Behrouz Farhang-Boroujeny, University of Utah*

## Session TA8a3 Communications System Design

Chair: *Marco Chiani, University Bologna*

8:15 AM - 9:55 AM

- TA8a3-1 Spatially-Aware Adaptive Error Correcting Codes for Flash Memory  
*Ryan Gabrys, Lara Dolecek, University of California, Los Angeles*

- TA8a3-2 An SDR Architecture for OFDM Transmission over USRP2 Boards  
*Gilberto Berardinelli, Aalborg University; Per Zetterberg, KTH Royal Institute of Technology; Oscar Tonelli, Andrea F. Cattoni, Troels B. Sorensen, Preben Mogensen, Aalborg University*
- TA8a3-3 Environmental-Aware Heterogeneous Partial Feedback Design in a Multi-User OFDMA System  
*Yichao Huang, Bhaskar D. Rao, University of California, San Diego*
- TA8a3-4 Adaptive OFDM for Underwater Acoustic Channels with Limited Feedback  
*Andreja Radosevic, University of California, San Diego; Tolga Duman, Arizona State University; John Proakis, University of California, San Diego; Milica Stojanovic, Northeastern University*
- TA8a3-5 A 512-Point 8-Parallel Pipelined Feedforward FFT for WPAN  
*Tanvir Ahmed, Mario Garrido, Oscar Gustafsson, Linköping University*
- TA8a3-6 On the Convergence of Joint Channel and Mismatch Estimation for Time-Interleaved Data Converters  
*Sandeep Ponnuru, Upamanyu Madhow, University of California, Santa Barbara*
- TA8a3-7 Comparison of Energy- and Spectral-Efficient Design for LTE Downlink Systems  
*Liyang Li, University of Electronic Science and Technology of China; Jiancun Fan, Xi'an Jiaotong University; Gang Wu, Hongbing Xu, University of Electronic Science and Technology of China; Geoffrey Ye Li, Georgia Institute of Technology*
- TA8a3-8 An Efficient Cascade of Half-Band Filters for Software Defined Radio Transmitters  
*fred harris, Xiaofei Chen, Elettra Venosa, San Diego State University*

## Session TA8a4 Applications of Array Processing

Chair: *Giuseppe Abreu, Oulu University, Finland*

8:15 AM - 9:55 AM

- TA8a4-1 An SVD Approach for Data Compression in Emitter Location Systems  
*Mohammad Pourhomayoun, Mark Fowler, Binghamton University*
- TA8a4-2 Detection Properties of Some Sparse Representation Approaches  
*Jean Jacques Fuchs, Université de Rennes 1*
- TA8a4-3 Estimating Bridge Displacement from Acceleration Using Modal Analysis and the Minimum Description Length Principle  
*Viswanadh Kandula, Linda DeBrunner, Victor DeBrunner, Michelle Rambo-Rodenberry, Florida State University*
- TA8a4-4 Non-Uniform Sparse Array Design for Active Sensing  
*Ching-Chih Weng, P. P. Vaidyanathan, California Institute of Technology*

- TA8a4-5 MIMO Radar Target Measurements  
*Kyle Stewart, Mark Frankford, Joel Johnson, Emre Ertin, Ohio State University*
- TA8a4-6 Efficient Removal of Noise and Interference in Multichannel Quadrupole Resonance  
*Naveed Razzaq Butt, Andreas Jakobsson, Lund University*
- TA8a4-7 Time Reversal Bayesian Ultrasonic Array Imaging for Non-Destructive Testing  
*Foroohar Foroozan, Nasim Moallemi, Shahram ShahbazPanahi, University of Ontario Institute of Technology*
- TA8a4-8 Energy-Efficient MMSE Beamforming and Power Optimization in Multibeam Satellite Systems  
*Gan Zheng, Symeon Chatzinotas, Bjorn Ottersten, SnT, University of Luxembourg*
- TA8a4-9 Equidistributed Sampling Sequences for Spectral Analysis  
*Mustafa Al-Ani, Andrzej Tarczynski, University of Westminster*

## Session TA8b1 Multiple Antennas in Multi-User Systems and Networks

Chair: *Shuguang Cui, Texas A&M University*

10:15 AM - 12:00 PM

- TA8b1-1 Low Complexity Spatial Multiuser Pairing in SC-FDMA Uplink  
*Jiancun Fan, Xi'an Jiaotong University; Geoffrey Ye Li, Georgia Institute of Technology; Qinye Yin, Xi'an Jiaotong University; Bingguang Peng, Xiaolong Zhu, Huawei Shanghai Research Institute*
- TA8b1-2 Maximum-Likelihood Decoding in Decode-and-Forward Based MIMO Cooperative Communication Systems  
*Manav Bhatnagar, Ankur Bansal, Indian Institute of Technology, Delhi; Are Hjørungnes, UNIK, University of Oslo; Zhu Han, University of Houston*
- TA8b1-3 Complex Interference Optimization for Power Loss Reduction in MIMO-THP Transmission  
*Christos Masouros, Mathini Sellathurai, Tharm Ratnarajah, Queen's University Belfast; Ying-Chang Liang, Institute for Infocomm Research*
- TA8b1-4 Channel Tracking for D-BLAST for Airborne Platforms  
*Kapil Borle, Biao Chen, Syracuse University; Michael Gans, Air Force Research Laboratory*
- TA8b1-5 Interference Alignment for Multiple-Antenna Amplify-and-Forward Relay Interference Channel  
*Kien T. Truong, Robert W. Heath, Jr., University of Texas at Austin*
- TA8b1-6 Null Space Interference Alignment in MIMO Cellular Networks  
*Taejoon Kim, David Love, Purdue University; Bruno Clerckx, Samsung Electronics*

- TA8b1-7 On Grouped OFDM-IDMA  
*Jian Dang, Southeast University; Liuqing Yang, Colorado State University; Zaichen Zhang, Southeast University*
- TA8b1-8 Coordinated Multi-Cell Beamforming for LTE-Advanced Systems  
*Qixing Wang, Guangyi Liu, China Mobile Research Institute; Shuguang Cui, Texas A&M University*
- TA8b1-9 Linear Transceiver Design for Interfering Broadcast Channel with QoS Constraints  
*Meisam Razaviyayn, Zhi-Quan Luo, University of Minnesota*
- TA8b1-10 Cooperative Feedback for MIMO Interference Channels  
*Kaibin Huang, Yonsei University; Rui Zhang, National University of Singapore*
- TA8b1-11 Eigen-Mode Transmission for Jointly Correlated MIMO Broadcast Channels  
*Xiao Li, Shi Jin, Xiqi Gao, Southeast University*
- TA8b1-12 How Many Degrees of Freedom Can Be Achieved for Mutually Interfering MIMO Broadcast Channels?  
*Hyukjin Chae, Sungyoon Cho, Kaibin Huang, Dongku Kim, Yonsei University*
- TA8b1-13 Distributed Beamforming Based Directional Spectrum Sharing  
*Juan Liu, Wei Chen, Zhigang Cao, Tsinghua University; Ying Jun Zhang, Chinese University of Hong Kong*
- TA8b1-14 Spatially Efficient Distributed Relay Selection for Random Relay Networks  
*Sungrae Cho, Wan Choi, Korea Advanced Institute of Science and Technology; Kaibin Huang, Yonsei University*
- TA8b1-15 Channel State Information Feedback Control for Interference Alignment  
*Linyang Song, Peking University; Zhu Han, University of Houston; Shaohui Sun, Datang Mobile; Bingli Jiao, Peking University*
- TA8b1-16 Self-Optimized MIMO-OFDMA: A Nash-Stackelberg Game-Theoretic Approach  
*Jie Ren, Jianjun Hou, Beijing Jiaotong University; Kai-Kit Wong, University College London*

### Session TA8b2 Cooperative and Cognitive Transmission in Multi-Antenna Systems

Chair: *Daniel Bliss, MIT Lincoln Laboratory*

10:15 AM - 12:00 PM

- TA8b2-1 Cooperative Rate Maximization Based on Base Station Exchange of Powers  
*Samer Bazzi, Guido Diel, DoCoMo Communications Laboratories Europe GmbH*

- TA8b2-2 Half-Duplex Gaussian Diamond Relay Channel with Interference Known at One Relay  
*Kagan Bakanoglu, Elza Erkip, Polytechnic Institute of New York University; Osvaldo Simeone, New Jersey Institute of Technology*
- TA8b2-3 Interference Management in Femtocell Networks with Hybrid-ARQ and Interference Cancellation  
*Tania Villa, Eurecom; Ruben Merz, Deutsche Telekom Laboratories; Raymond Knopp, Eurecom*
- TA8b2-4 Achievable Degrees of Freedom of the K-User Interference Channel with Partial Cooperation  
*Ahmed Naguib, Khaled Elsayed, Cairo University; Mohammed Nafte, Nile University*
- TA8b2-5 Multicell Downlink Weighted Sum-Rate Maximization: A Distributed Approach  
*Pradeep Chaturanga Weeraddana, Marian Codreanu, Matti Latva-aho, Centre for Wireless Communications*
- TA8b2-6 Decentralized Multi-Cell Beamforming Coordination for Multiuser MISO Systems  
*Harri Pennanen, Antti Tölli, Matti Latva-aho, University of Oulu*
- TA8b2-7 Feedback Reduction by Thresholding in Multi-User Broadcast Channels: Design and Limits  
*Matthew Pugh, Bhaskar D. Rao, University of California, San Diego*
- TA8b2-8 Full-Duplex Bidirectional MIMO: Achievable Rates under Limited Dynamic Range  
*Brian Day, Ohio State University; Daniel Bliss, Adam Margetts, MIT Lincoln Laboratory; Philip Schnüter, Ohio State University*

### Session TA8b3 Adaptive Sensing

Chair: *Jarvis Haupt, University of Minnesota*

10:15 AM - 12:00 PM

- TA8b3-1 Adaptive Search for Sparse Moving Targets under Resource Constraints  
*Gregory Newstadt, Eran Bashan, Alfred O. Hero, University of Michigan*
- TA8b3-2 Adaptive Signal Recovery in Noisy Environments  
*Mark Iwen, Duke University; Ahmed Tewfik, University of Texas at Austin*
- TA8b3-3 On the Limits of Sequential Testing in High Dimensions  
*Matthew Malloy, Robert Nowak, University of Wisconsin*
- TA8b3-4 Active Learning for Adaptive Life-Long Learning  
*Lawrence Carin, Duke University; Hui Li, Signal Innovations Group*
- TA8b3-5 Efficient Adaptive Compressive Sensing Using Sparse Hierarchical Learned Dictionaries  
*Akshay Soni, Jarvis Haupt, University of Minnesota*
- TA8b3-6 Information-Optimal Adaptive Compressive Imaging  
*Amit Ashok, Mark Neifeld, University of Arizona*

TA8b3-7 On Primary Side Information in Cognitive Radio Networks  
*May Moussa, Mohammed Nafie, Nile University; Hesham ElGamal, Ohio State; Ayman Naguib, Qualcomm Incorporated*

TA8b3-8 Further Results on Adaptive Sequential Detection with One-Sided Stopping and Deadline  
*Wenyi Zhang, University of Science and Technology of China; Ahmed Sadek, Stephen Shellhammer, Cong Shen, Qualcomm Incorporated*

### Session TP1a Resource Allocation in Multi-Antenna Systems

Chair: *Neelesh Mehta, Indian Institute of Science*

TP1a-1 Optimal Power Allocation for Multi-User Transmit Beamforming via Regularized Channel Inversion 1:30 PM  
*Rusdha Muharar, Jamie Evans, University of Melbourne*

TP1a-2 Capacity Density Optimization by Fractional Frequency Partitioning 1:55 PM  
*Martin Taranetz, Josep Colom Ikuno, Markus Rupp, Vienna University of Technology*

TP1a-3 Resource Allocation in MIMO Multi-Cellular Networks via Submodular Optimization 2:20 PM  
*Narayan Prasad, Honghai Zhang, NEC Laboratories America, Inc.; Luca Venturino, University of Cassino; Jubin Jose, University of Texas at Austin; Sampath Rangarajan, NEC Laboratories America, Inc.*

TP1a-4 Transmit Power Optimization for Multi-Antenna Decode-and-Forward Relays with Loopback Self-Interference from Full-Duplex Operation 2:45 PM  
*Taneli Riihonen, Stefan Werner, Risto Wichman, Aalto University*

### Session TP1b Interference Management

Chair: *Aydin Sezgin, University of Ulm*

TP1b-1 Degrees of Freedom of Multiple Unicasts over Multihop Wireless Networks 3:30 PM  
*Syed Jafar, University of California, Irvine*

TP1b-2 Optimized Data Symbol Sharing in Multiple-Antenna Interference Channel 3:55 PM  
*Maha Odeh, Paul De Kerret, David Gesbert, Eurecom*

TP1b-3 On Interference Channels with more than Two Source-Destination Pairs 4:20 PM  
*Daniela Tuninetti, University of Illinois, Chicago*

TP1b-4 Training and Feedback Optimization For MIMO Interference Alignment in Continuous Fading Channels 4:45 PM  
*Omar El Ayach, Angel Lozano, Universitat Pompeu Fabra; Robert W. Heath, Jr., University of Texas at Austin*

TP1b-5 Making Optimal Use of the Asymmetric Interference Channel 5:10 PM  
*Rachel Learned, MIT Lincoln Laboratory*

### Session TP2a Cognitive Radio I

Chair: *Gesualdo Scutari, University at Buffalo*

TP2a-1 Joint Link Learning and Cognitive Radio Network Sensing 1:30 PM  
*Seung-Jun Kim, Georgios Giannakis, University of Minnesota*

TP2a-2 Spectrum Sensing via Event-Triggered Sampling 1:55 PM  
*Yasin Yilmaz, Xiaodong Wang, Columbia University*

TP2a-3 Proactive Resource Allocation in Cognitive Networks 2:20 PM  
*John Tadrous, Atilla Eryilmaz, Hesham El-Gamal, Ohio State University*

TP2a-4 Correlated Equilibrium Learning Algorithms for Dynamic Spectrum Access 2:45 PM  
*Omid Namvar Gharehshiran, Vikram Krishnamurthy, University of British Columbia*

### Session TP2b Cognitive Radio II

Chair: *Gesualdo Scutari, University at Buffalo*

TP2b-1 Extreme Eigenvalue Distributions of Finite Random Wishart Matrices with Application to Spectrum Sensing 3:30 PM  
*Giuseppe Abreu, University of Oulu; Wensheng Zhang, Mamiko Inamori, Yukitoshi Sanada, Keio University*

TP2b-2 Autocorrelation-Based Multi-Antenna Spectrum Sensing in Colored Noise 3:55 PM  
*Jitendra Tugnait, Auburn University*

TP2b-3 Decentralized Cognition via Randomized Masking 4:20 PM  
*Kamyar Moshksar, Amir Khandani, University of Waterloo*

TP2b-4 Spectrum Leasing via Cooperative Opportunistic Routing in Distributed Ad Hoc Networks: Optimal and Heuristic Policies 4:45 PM  
*Cristiano Tapparello, Davide Chiarotto, Michele Rossi, University of Padova; Osvaldo Simeone, New Jersey Institute of Technology; Michele Zorzi, University of Padova*

TP2b-5 A Message-Passing Algorithm for Spectrum Access in Cognitive Radio Relay Networks 5:10 PM  
*Sang Hyun Lee, Manohar Shamaiah, Sriram Vishwanath, Haris Vikalo, University of Texas at Austin*



### Session TP3a Multi-dimensional Compressive Inference

Chair: *Phil Schniter, The Ohio State University*

- TP3a-1 Real-Time Principal Component Pursuit 1:30 PM  
*Graeme Pope, Manuel Baumann, ETH Zurich; Christoph Studer, Rice University; Giuseppe Durisi, Chalmers University of Technology*
- TP3a-2 Low Rank Variational Tensor Recovery for Multi-Linear Inverse Problems 1:55 PM  
*Hatim Alqadah, Howard Fan, University of Cincinnati*
- TP3a-3 Optimized Measurements for Kernel Compressive Sensing 2:20 PM  
*Karthikeyan Natesan Ramamurthy, Andreas Spanias, Arizona State University*
- TP3a-4 Efficient Message Passing-Based Inference in the Multiple Measurement Vector Problem 2:45 PM  
*Justin Ziniel, Philip Schniter, Ohio State University*

### Session TP3b Advances in Adaptive and Distributed Filtering

Chair: *Vitor Nascimento, University of Sao Paulo*

- TP3b-1 Continuous-Time Distributed Estimation 3:30 PM  
*Vitor Nascimento, University of Sao Paulo; Ali Sayed, University of California, Los Angeles*
- TP3b-2 Sequential Likelihood Consensus and Application to Distributed Particle Filtering with Reduced Communications and Latency 3:55 PM  
*Ondrej Sluciak, Ondrej Hlinka, Markus Rupp, Franz Hlawatsch, Vienna University of Technology; Petar Djuric, Stony Brook University*
- TP3b-3 A Unifying Framework for the Analysis of Quaternion-Valued Adaptive Filters 4:20 PM  
*Clive Cheong Took, Cyrus Jahanchahi, Danilo Mandic, Imperial College London*
- TP3b-4 Joint Conditional and Steady-State Probability Densities of Weight Deviations for Proportionate-Type LMS Algorithms 4:45 PM  
*Kevin Wagner, Naval Research Laboratory; Miloš Doroslovacki, George Washington University*
- TP3b-5 Fast and Superfast Computations in Structured Equalization Scenarios 5:10 PM  
*Ricardo Merched, Universidade Federal do Rio de Janeiro*

### Session TP4a Communication Management in Robot Networks

Chair: *Michael Zavlanos, Stevens Institute of Technology*

- TP4a-1 Co-Optimization of Communication and Motion Planning of a Robotic Operation in Fading Environments 1:30 PM  
*Yuan Yan, Yasamin Mostofi, University of New Mexico*

- TP4a-2 A Framework for Integrating Mobility and Routing in Mobile Communication Networks 1:55 PM  
*Michael M. Zavlanos, Stevens Institute of Technology; Alejandro Ribeiro, George J. Pappas, University of Pennsylvania*
- TP4a-3 Multi-Robot Path Following with Visual Connectivity 2:20 PM  
*Magnus Lindhé, Royal Institute of Technology; Tamas Keviczky, Delft University of Technology; Karl Henrik Johansson, Royal Institute of Technology*
- TP4a-4 Communication Network Challenges for Collaborative Vehicles 2:45 PM  
*Pedram Hovareshti, Chen Hua, John Baras, University of Maryland*

### Session TP4b Distributed Storage Systems

Chair: *Alex Dimakis, University of Southern California*

- TP4b-1 Codes for Robust Scalable Distributed Video-on-Demand Systems 3:30 PM  
*Sameer Pawar, Salim El Rouayheb, Hao Zhang, University of California, Berkeley; Parimal Parag, Texas A&M University; Kannan Ramchandran, University of California, Berkeley*
- TP4b-2 Error Coding for Long-Term Archival Storage Systems 3:55 PM  
*Ethan Miller, Ian Adams, Jingpei Yang, Daniel Rosenthal, Darrell Long, University of California, Santa Cruz*
- TP4b-3 Theoretical Problems in Fault-Tolerant Distributed Storage 4:20 PM  
*James Plank, University of Tennessee*
- TP4b-4 Survey of Non-MDS Erasure Codes for Distributed Storage Systems 4:45 PM  
*Jay Wylie, Hewlett-Packard Labs*

### Session TP5 Compressive Sensing for Radar

Chair: *Rabinder Madan, U.S. Office of Naval Research*

- TP5-1 Compressive Sensing: Snake Oil or Good Idea? 1:30 PM  
*Fred Daum, Raytheon*
- TP5-2 Compressive Sensing for Synthetic Aperture Radar in Fast-Time and Slow-Time Domains 1:55 PM  
*Qilian Liang, University of Texas at Arlington*
- TP5-3 Comparison of MMOSPA and Compressed Sensing for Radar Array Processing 2:20 PM  
*David Crouse, Peter Willett, University of Connecticut; Lennart Svensson, Chalmers University; Yaakov Bar-Shalom, University of Connecticut*
- TP5-4 Support Recovery in Compressive Sensing for Estimation of Direction-of-Arrival 2:45 PM  
*Zhiyuan Weng, Xin Wang, Stony Brook University*

	BREAK	3:10 PM
TP5-5	Explore Group Sparsity for Compressive Sensing Based MIMO Radar <i>Yao Yu, Athina Petropulu, Junzhou Huang, Rutgers University</i>	3:30 PM
TP5-6	On the Role of Waveform Diversity in MIMO Radar <i>Benjamin Friedlander, University of California, Santa Cruz</i>	3:55 PM
TP5-7	Non-Coherent Compressive Sensing for MIMO Radar with Widely Separated Antennas <i>Christian Berger, Jose' Moura, Carnegie Mellon University</i>	4:20 PM
TP5-8	Global Methods for Compressive Sensing in MIMO Radar with Distributed Sensors <i>Marco Rossi, Alexander M. Haimovich, New Jersey Institute of Technology; Yonina C. Eldar, Technion-Israel Institute of Technology</i>	4:45 PM

### Session TP6a Source Localization

Chair: *Muralidhar Rangaswamy, Purdue University*

TP6a-1	Robust Time-Based Localization for Asynchronous Networks with Clock Offsets <i>Yiyin Wang, Delft University of Technology; Xiaoli Ma, Georgia Institute of Technology; Geert Leus, Delft University of Technology</i>	1:30 PM
TP6a-2	Conditioned MDS with Heterogeneous Information <i>Davide Macagnano, Giuseppe Abreu, University of Oulu</i>	1:55 PM
TP6a-3	Cooperative Multihop Localization with Privacy <i>Golaleh Rahmatollahi, Leibniz University Hannover; Giuseppe Abreu, University of Oulu; Stefano Severi, University of Bologna</i>	2:20 PM
TP6a-4	Design and Performance of an Integrated Waveform-agile Multi-Modal Track-before-Detect Sensing System <i>Jun Zhang, Arizona State University; Surendra Bhat, Pennsylvania State University; Quan Ding, University of Rhode Island; Antonia Papandreou-Suppappola, Arizona State University; Ram Narayanan, Pennsylvania State University; Steven Kay, University of Rhode Island; Muralidhar Rangaswamy, Air Force Research Laboratory</i>	2:45 PM

### Session TP6b Array Processing for Satellite Communications

Chair: *Michael Joham, Technical University Munich*

TP6b-1	On the Capacity of Multi-Beam Joint Decoding over Composite Satellite Channels <i>Dimitrios Christopoulos, Symeon Chatzinotas, University of Luxembourg; Michail Matthaiou, Chalmers University of Technology; Björn Ottersten, University of Luxembourg</i>	3:30 PM
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TP6b-2	User Scheduling for Large Multi-Beam Satellite MIMO Systems <i>Matteo Berio, Vincent Boussemart, Francesco Rossetto, German Aerospace Center (DLR)</i>	3:55 PM
TP6b-3	Multi-User Interference Mitigation Techniques for Broadband Multi-Beam Satellite Systems <i>Ilaria Thibault, Francesco Lombardo, Enzo A. Candreva, Alessandro Vanelli-Coralli, Giovanni E. Corazza, University of Bologna</i>	4:20 PM
TP6b-4	Advanced Interference Mitigation Techniques for the Forward Link of Multi-Beam Broadband Satellite Systems <i>Bertrand Devillers, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC); Ana Pérez-Neira, Universitat Politècnica de Catalunya</i>	4:45 PM
TP6b-5	Performance Evaluation of a Satellite Diversity System Employing Compact MIMO-Octahedron Antenna <i>Tommy Tommy, Lund University; Abbas Mohammed, Blekinge Institute of Technology</i>	5:10 PM

### Session TP7a Adaptive and Evolvable Architectures

Chair: *Andy Tyrrell, University of York, UK*

TP7a-1	A Programmable Analog and Digital Array for Bio-Inspired Electronic Design Optimization at Nano-Scale Silicon Technology Nodes <i>Martin Trefzer, James Walker, Andy Tyrrell, University of York</i>	1:30 PM
TP7a-2	Evolved Defect Tolerant Structures for FPGA Architectures <i>Pauline Haddow, Norwegian University of Science and Technology</i>	1:55 PM
TP7a-3	Improved Learning in an Evolvable Oscillator for In-Flight Controller Adaptation in a Flapping-Wing Micro Air Vehicle <i>Gallagher John, Wright State University; Michael Oppenheimer, Air Force Research Laboratory</i>	2:20 PM
TP7a-4	Using Discrete Fourier Transforms to Detect Operational Environments for Autonomous Non-Linear Systems <i>Garrison Greenwood, Portland State University</i>	2:45 PM

### Session TP7b Computer Arithmetic II

Chair: *Neil Burgess, ARM, Inc. USA*

TP7b-1	The Fully-Serial Pipelined Multiplier <i>Andrew Shafer, Advanced Micro Devices; Lyndsi Parker, IBM; Earl Swartzlander, University of Texas at Austin</i>	3:30 PM
TP7b-2	Special-Purpose Crypto Hardware Accelerators for 45nm High-Performance Microprocessors <i>Sanu Mathew, Ram Krishnamurthy, Intel Corporation</i>	3:55 PM

- TP7b-3 Energy-Efficient Floating-Point Arithmetic for Low-Power Digital Signal Processors 4:20 PM  
*Syed Z. Gilani, Nam Sung Kim, University of Wisconsin-Madison; Michael J. Schulte, Advanced Micro Devices*
- TP7b-4 Testing Fused Multiply Add Implementations 4:45 PM  
*David Lutz, Neil Burgess, Sabrina Romero, ARM*
- TP7b-5 Shared Implementation of Radix-10 and Radix-16 Division Algorithm with Limited Precision Primitives 5:10 PM  
*Milos D. Ercegovac, University of California, Los Angeles; Robert McIlhenny, California State University, Northridge*

### Session TP8a1 Techniques for Space-Time Signal Processing

Chair: *Kaibin Huang, Yonsei University, S. Korea*

1:30 PM - 3:10 PM

- TP8a1-1 Equivalent Codes and Optimality of Orthogonal Space-Time Block Codes  
*Alex Geyer, Sergiy Vorobyov, Norman Beaulieu, University of Alberta*
- TP8a1-2 On Quasi-Orthogonal Space-Time Block Codes for Dual-Polarized MIMO Channels  
*Yabo Li, Zhike Huang, Zhejiang University; Xiang-Gen Xia, University of Delaware*
- TP8a1-3 Sparse Space-Time Equalization with L1 Norm  
*Laura Slivinski, Brown University; Adam Margetts, Daniel Bliss, Massachusetts Institute of Technology*
- TP8a1-4 Weighted Sum-Rate Maximization for MISO Downlink Cellular Networks via Branch and Bound  
*Satya Joshi, Pradeep Chathuranga Weeraddana, Marian Codreanu, Matti Latva-aho, Centre for Wireless Communications*
- TP8a1-5 Low Complexity Generalized Geometric Mean Decomposition and DFE Transceiver Design  
*Chih-Hao Liu, P. P. Vaidyanathan, California Institute of Technology*
- TP8a1-6 Worst-Case Robust Multiuser Transmit Beamforming Using Semidefinite Relaxation: Duality and Implications  
*Tsung-Hui Chang, National Tsing Hua University; Wing-Kin Ma, Chinese University of Hong Kong; Chong-Yung Chi, National Tsing Hua University*
- TP8a1-7 Transmitter Optimization for MIMO Systems with Mutual Coupling at High SNR  
*Peng Li, Hong Kong University of Science and Technology; Liang Sun, Alcatel-Lucent Shanghai Bell; Matthew McKay, Ross Murch, Hong Kong University of Science and Technology*
- TP8a1-8 Robust Joint Optimization of Non-Regenerative MIMO Relay Channels with Imperfect CSI  
*Ebrahim A. Gharavol, Erik G. Larsson, Linköping University*

### Session TP8a2 Statistical and Array Signal Processing for Biomedical Applications

Chair: *Monica Bugallo, University of Stony Brook*

1:30 PM - 3:10 PM

- TP8a2-1 ECG De-Noising Using a Dynamical Model and a Marginalized Particle Filter  
*Chao Lin, TèSA Laboratory; Monica Bugallo, Stony Brook University; Corinne Mailhes, Jean-Yves Tourneret, University of Toulouse*
- TP8a2-2 Beta Dirichlet Process Mixture Model Based Clustering of DNA Methylation Array Data  
*Jia Meng, Yufei Huang, University of Texas at San Antonio; Lin Zhang, China University of Mining and Technology*
- TP8a2-3 Neonatal Seizure Detection Using Multi-Channel Blind Information Fusion  
*Huaying Li, Aleksandar Jeremic, McMaster University; Kenneth Tan, University of Melbourne*
- TP8a2-4 A Novel Approach to Automated Fetal Heart Rate Analysis  
*Shishir Dash, Petar Djuric, Stony Brook University*
- TP8a2-5 Joint Waveform and Firing Rate Spike-Sorting for Continuous Extracellular Traces  
*Brett Matthews, Mark Clements, Georgia Institute of Technology*
- TP8a2-6 Statistical Design of Position-Encoded Microsphere Arrays at Low Target Concentrations  
*Xiaoxiao Xu, Washington University in St. Louis; Pinaki Sarder, Washington University School of Medicine in St. Louis; Arye Nehorai, Washington University in St. Louis*
- TP8a2-7 Biosensor Arrays for Collaborative Detection of Analytes  
*Maryam Abolfath-Beygi, Vikram Krishnamurthy, University of British Columbia*
- TP8a2-8 Developing Movement Direction Decoders from Local Field Potentials  
*Vijay Aditya Tadipatri, Ahmed H. Tewfik, University of Texas at Austin; James Ashe, Guiseppe Pellizzer, VA Medical Center, Minneapolis*

### Session TP8a3 Sensor Networks

Chair: *Soumya Kar, Carnegie Mellon University*

1:30 PM - 3:10 PM

- TP8a3-1 Dual Trust Secure Protocol for Cluster-Based Wireless Sensor Networks  
*Yang Li, Melody Moh, San Jose State University*
- TP8a3-2 User Clustering and Energy Efficient Cooperation in Cellular Networks  
*Jinhong Wu, George Washington University; Harry (Zhibing) Chen, Yong Liu, Liyu Cai, Alcatel-Lucent Shanghai Bell*

- TP8a3-3 Optimization of Exponential Error Rates for a Suboptimum Fusion Rule in Wireless Sensor Networks  
*John Gubner, University of Wisconsin-Madison; Louis Scharf, Edwin Chong, Colorado State University*
- TP8a3-4 Collaborative Estimation in Dispersive Environments: A Frequency Domain Approach  
*Sriram Venkateswaran, Upamanyu Madhow, University of California, Santa Barbara*
- TP8a3-5 Distributed Support Vector Machines in Sensor-Actuator Networks  
*Joseph Lee, University of California, Los Angeles*
- TP8a3-6 Step-Size Sequence Design for Finite-Time Distributed Average Consensus  
*Alain Kibangou, University Joseph Fourier/CNRS*
- TP8a3-7 Target Localization in Sensor Networks with Quantized Data in the Presence of Byzantine Attacks  
*Keshav Agrawal, Aditya Vempaty, Indian Institute of Technology, Kanpur; Hao Chen, Boise State University; Pramod Varshney, Syracuse University*
- TP8a3-8 Uniformly Most Powerful Distributed Detection and its Application in Cooperative Spectrum Sensing  
*Hao Chen, Uri Rogers, Boise State University*

### Session TP8a4 Wireless Networks

Chair: *Vivek Cadambe, University of California, Irvine*

1:30 PM - 3:10 PM

- TP8a4-1 Dynamic Pricing under Binary Demand Uncertainty: A Multi-Armed Bandit with Correlated Arms  
*Yixuan Zhai, Qing Zhao, University of California, Davis*
- TP8a4-2 Optimal Routing with Mutual Information Accumulation in Wireless Networks  
*Rahul Uргаonkar, Michael Neely, University of Southern California*
- TP8a4-3 Optimal Scheduling of Real-Time Messages in Peer-to-Peer Wireless Networks  
*Juan Jose Jaramillo, Shihuan Liu, Lei Ying, Iowa State University*
- TP8a4-4 State-Based Single Channel Selection in Multi-Channel Wireless Networks  
*Brian Phillips, Murali Tummala, John McEachen, Naval Postgraduate School*
- TP8a4-5 Robust Joint Transceiver Beamforming for Cognitive Radio Network  
*Huiqin Du, Tharm Ratnarajah, Queen's University Belfast; C. B. Papadias, Athens Information Technology*
- TP8a4-6 Probabilistic Power Control for Heterogeneous Cellular Networks with Closed-Access Femtocells  
*Ralf Bendlin, Yih-Fang Huang, University of Notre Dame; Josef A. Nossek, Munich University of Technology*

- TP8a4-7 Pricing and Bandwidth Allocation Problems in Wireless Multi-Tier Networks  
*Camila Maria Gabriel Gussen, Universidade Federal do Rio de Janeiro; Elena Verónica Belmega, M rouane Debbah, Sup elec*
- TP8a4-8 Joint Power and Rate Control for Coded Wireless Packet Networks  
*Ketan Rajawat, Nikolaos Gatsis, Emiliano Dall'Anese, Georgios Giannakis, University of Minnesota*

### Session TP8b1 Machine-Learning-Based Statistical Signal Processing

Chair: *Phil Schniter, The Ohio State University*

3:30 PM - 5:10 PM

- TP8b1-1 Shrinkage Fisher Information Embedding of High Dimensional Feature Distributions  
*Xu Chen, Yilun Chen, Alfred Hero, University of Michigan*
- TP8b1-2 Adaptive Learning of Immunosignaturing Peptide Array Features for Biothreat Detection and Classification  
*Jun Zhang, Bhavana Chakraborty, Anna Malin, Antonia Papandreou-Suppappola, Stephen Johnston, Phillip Stafford, Arizona State University*
- TP8b1-3 Sparse Classification of RF Transients Using Chirplets and Learned Dictionaries  
*Daniela Moody, Steven Brumby, Kary Myers, Norma Pawley, Los Alamos National Laboratory*
- TP8b1-4 Exploiting Random Matrix Theory to Improve Subspace-Based Classification  
*Nicholas Asendorf, Raj Rao Nadakuditi, University of Michigan*
- TP8b1-5 Non-Linear Unmixing of Hyperspectral Images with Kernels  
*Jie Chen, Universit  de Technologie de Troyes; C dric Richard, Universit  de Nice Sophia-Antipolis; Paul Honeine, Universit  de Technologie de Troyes*
- TP8b1-6 Modulation Classification of MIMO-OFDM Signals by Independent Component Analysis and Support Vector Machines  
*Handan Agirman-Tosun, A.M. Haimovich, Osvaldo Simeone, New Jersey Institute of Technology; Wei Su, U.S. Army CERDEC Aberdeen Proving Ground; Jason Dabin, U.S. Navy SPAWAR SCP; Emmanuel Kanterakis, CACI International*
- TP8b1-7 A Measure of Difference between Discrete Sample Sets  
*Debejyo Chakraborty, General Motors Company; Narayan Kovvali, Arizona State University*
- TP8b1-8 On l1 Mean and Variance Filtering  
*Bo Wahlberg, Cristian R. Rojas, Mariette Annergren, KTH Royal Institute of Technology*

## Session TP8b2 Network Information Theory

Chair: Daniela Tuninetti, University of Illinois at Chicago

3:30 PM - 5:10 PM

- TP8b2-1 Information-Theoretic Limits of Dense Underwater Networks  
*Won-Yong Shin, Harvard University; Daniel Lucani, Universidade do Porto; Muriel Medard, Massachusetts Institute of Technology; Milica Stojanovic, Northeastern University; Vahid Tarokh, Harvard University*
- TP8b2-2 A Two-Way Secrecy Scheme for the Scalar Broadcast Channel with Internal Eavesdroppers  
*Chee Yen Leow, Imperial College London; Dennis L. Goeckel, University of Massachusetts; Kin K. Leung, Imperial College London*
- TP8b2-3 Relaying for Multiple Sources in the Absence of Codebook Information  
*Ye Tian, Aylin Yener, Pennsylvania State University*
- TP8b2-4 Compound Codes for Optimal Repair in MDS Code Based Distributed Storage Systems  
*Viveck Cadambe, University of California, Irvine; Cheng Huang, Microsoft Research; Jin Li, Sanjeev Mehrotra, Microsoft Research Redmond*
- TP8b2-5 Effects of Range Expansion and Interference Coordination on Capacity and Fairness in Heterogeneous Networks  
*Sayandev Mukherjee, Ismail Guvenc, DoCoMo USA Labs*
- TP8b2-6 An Extended Etkin-Type Outer Bound on the Capacity of the Gaussian Interference Channel  
*Anas Chaaban, Aydin Sezgin, University of Ulm*
- TP8b2-7 Communication Strategies to Ensure Generic Networked Observability in Multi-Agent Systems  
*Mohammadreza Doostmohammadian, Usman Khan, Tufts University*
- TP8b2-8 Error Probability Bounds for Binary Relay Trees with Unreliable Communications  
*Zhenliang Zhang, Ali Pezeshki, Colorado State University; William Moran, University of Melbourne; Stephen Howard, Defence Science and Technology Organization; Edwin Chong, Colorado State University*

## Session WA1a Channel Estimation for Multi-Antenna Systems

Chair: Mérouane Debbah, SUPELEC, France

- WA1a-1 Close-Range Outdoor Wireless Channel Sounding 8:15 AM  
*Scott E. Johnston, Paul D. Fiore, MIT Lincoln Laboratory*
- WA1a-2 Channel Aging Effects in CoMP Transmission: Gains from Linear Channel Prediction 8:40 AM  
*Lars Thiele, Bho Matthiesen, Michael Olbrich, Konstantinos Manolakis, Slawomir Stanczak, Fraunhofer Heinrich Hertz Institute*

- WA1a-3 A Modified Compressed Sampling Matching Pursuit Algorithm on Redundant Dictionary and Its Application to Sparse Channel Estimation on OFDM 9:05 AM  
*Chulong Chen, Michael Zoltowski, Purdue University*
- WA1a-4 Asymptotic Analysis of Double-Scattering Channels 9:30 AM  
*Jakob Hoydis, Romain Couillet, Merouane Debbah, Supélec*

## Session WA1b MIMO Radar and SAR

Chair: Benjamin Friedlander, University of California, Santa Cruz

- WA1b-1 On Spatial Processing in MIMO Radar 10:15 AM  
*Benjamin Friedlander, University of California, Santa Cruz*
- WA1b-2 Subspace Fitting Based Autofocus for Stripmap SAR 10:40 AM  
*Roger West, Jacob (Jake) Gunther, Todd Moon, Utah State University*
- WA1b-3 Doppler Estimation and Compensation in MIMO Radar with Unitary Waveform Scheduling 11:05 AM  
*Tariq Qureshi, Michael Zoltowski, Purdue University; Robert Calderbank, Duke University*
- WA1b-4 On the Use of Fractional Autocorrelation to Correct Mismatches for Chirp Scale Focusing for Real SAR Image Formation 11:30 AM  
*Judith Northrop, Antonia Papandreou-Suppappola, Arizona State University*

## Session WA2a OFDM

Chair: Antonia Maria Tulino, Bell-Labs

- WA2a-1 Low Complexity EM-Based Decoding for OFDM Systems with Impulsive Noise 8:15 AM  
*Marcel Nassar, Brian Evans, University of Texas at Austin*
- WA2a-2 Accurate Characterization and Compensation of Phase Noise in OFDM Receiver 8:40 AM  
*Pramod Mathecken, Taneli Riihonen, Stefan Werner, Risto Wichman, Aalto University*
- WA2a-3 Linear Programming for Tone Reservation based IM/DD Optical OFDM Communications 9:05 AM  
*Liang Chen, NICTA Victoria Research Laboratory; Yusheng Ji, National Institute of Informatics; Brian Krongold, Jamie Evans, NICTA Victoria Research Laboratory*
- WA2a-4 Analytical Link Performance Evaluation of LTE Downlink with Carrier Frequency Offset 9:30 AM  
*Qi Wang, Markus Rupp, Vienna University of Technology*

## Session WA2b Beamforming

Chair: *Michael Joham, Technical University Munich*

- WA2b-1 Design of Beamforming in the Satellite Downlink with Static and Mobile Users 10:15 AM  
*Andreas Gründinger, Michael Joham, Wolfgang Utschick, Technische Universität München*
- WA2b-2 Array and Beamformer Design for Optimal Directivity 10:40 AM  
*Jean Jacques Fuchs, Université de Rennes 1*
- WA2b-3 Coordinating Complementary Waveforms for Sidelobe Suppression 11:05 AM  
*Wenbing Dang, Ali Pezeshki, Colorado State University; Stephen Howard, Defence Science and Technology Organisation; William Moran, University of Melbourne; Robert Calderbank, Duke University*
- WA2b-4 Robust Transmit Nulling in Phased Array Antennas 11:30 AM  
*Peter Vouras, Jean DeGraaf, Naval Research Laboratory*

## Session WA3a Information Theoretic Signal Processing

Chair: *John Walsh, Drexel University*

- WA3a-1 Modeling Noisy Feedback in Decentralized Self-Configuring Networks 8:15 AM  
*Samir Medina Perlaza, Merouane Debbah, Supélec*
- WA3a-2 Local Failure Localization in Large Sensor Networks 8:40 AM  
*Romain Couillet, Supélec; Walid Hachem, CNRS-Telecom ParisTech*
- WA3a-3 Cooperative Radar Techniques: The Two-Step Detector 9:05 AM  
*Max Scharrenbroich, Michael Zatman, QinetiQ North America*
- WA3a-4 Studying on Performance Behavior of the Compressive Sensing Measurements for Multiple Sensor System 9:30 AM  
*Sangjun Park, Hwanchol Jang, Heung-No Lee, Gwangju Institute of Science and Technology*

## Session WA3b Compressive Imaging and Detection

Chair: *Aleksandar Dogandzic, Iowa State University*

- WA3b-1 Multi-Static Radar Imaging via Bayesian Shrinkage 10:15 AM  
*Raghu Raj, U.S. Naval Research Laboratory; Zachary Chance, David Love, Purdue University*
- WA3b-2 A Mask Iterative Hard Thresholding Algorithm for Sparse Image Reconstruction with Known Object Contour 10:40 AM  
*Aleksandar Dogandzic, Kun Qiu, Iowa State University*

- WA3b-3 Sensor Calibration Errors in Compressive Distributed-Aperture Radar Sensing 11:05 AM  
*Peter Tuuk, Amy Sharma, Georgia Tech Research Institute*
- WA3b-4 Application of Compressive Sampling and Detection to Spectral Target Signatures 11:30 AM  
*Lawrence E. Hoff, Hoff Engineering; David Buck, Brian T. Williams, SPAWAR System Center; Edward M. Winter, Technical Research Associates; Miaoli Yu, SAIC*

## Session WA4a Cooperation & Relays

Chair: *Emiliano Dall'Anese, University of Minnesota*

- WA4a-1 The Gaussian Two-Way Relay Channel with Wiretapper 8:15 AM  
*Sungsoo Kim, Samsung Electronics; Won-Yong Shin, Harvard University*
- WA4a-2 On-Demand Cooperation with Power Control: Protocol and Experimental Results 8:40 AM  
*Christopher Hunter, Myuran Kanga, Lin Zhong, Ashutosh Sabharwal, Rice University*
- WA4a-3 A Practical Physical-Layer Network Coding Scheme for the Uplink of the Two-Way Relay Channel 9:05 AM  
*Stephan Pfletschinger, Centre Tecnològic de Telecomunicacions de Catalunya (CTTC)*
- WA4a-4 Empowering Full-Duplex Communication by Exploiting Directional Diversity 9:30 AM  
*Evan Everett, Melissa Duarte, Rice University; Chris Dick, Xilinx, Inc.; Ashutosh Sabharwal, Rice University*

## Session WA4b Multiuser Information Theory

Chair: *Aylin Yener, Pennsylvania State University*

- WA4b-1 Intrinsic Multicast Region of Broadcast Channel 10:15 AM  
*Mohammad (Amir) Khojastepour, NEC Laboratories America, Inc; Alireza Keshavarz-haddad, Shiraz University*
- WA4b-2 On the Gaussian Z-Interference Channel with Processing Energy Cost 10:40 AM  
*Xi Liu, Elza Erkip, Polytechnic Institute of New York University*
- WA4b-3 On the Sum Capacity of the Y-Channel 11:05 AM  
*Anas Chaaban, Aydin Sezgin, University of Ulm; Amir Salman Avestimehr, Cornell University*
- WA4b-4 Interference Channels with Source Cooperation in the Strong Cooperation Regime: Symmetric Capacity to within 2 bits/s/Hz with Dirty Paper Coding 11:30 AM  
*Shuang (Echo) Yang, Daniela Tuninetti, University of Illinois, Chicago*

## Session WA5a Signal Theory and Image Representation

Chair: *P. P. Vaidyanathan, California Institute of Technology*

- WA5a-1 Theory and Design of Unequal Order Analysis and Synthesis Filterbanks 8:15 AM  
*Asha Vijayakumar, Anamitra Makur, Nanyang Technological University*
- WA5a-2 Learning Dictionaries for Local Sparse Coding in Image Classification 8:40 AM  
*Jayaraman J. Thiagarajan, Andreas Spanias, Arizona State University*
- WA5a-3 Designing Thin Wavelet Filters 9:05 AM  
*Youngmi Hur, Fang Zheng, The Johns Hopkins University*
- WA5a-4 Estimation of Signal Subspace-Constrained Inputs to Linear Systems 9:30 AM  
*Alex Fink, Andreas Spanias, Arizona State University*

## Session WA5b Biometrics

Chair: *Marios Savvides Savvides, Carnegie Mellon University*

- WA5b-1 High Resolution Face Log from Surveillance Video 10:15 AM  
*Thang Ba Dinh, Jongmoo Choi, Gérard Medioni, University of Southern California*
- WA5b-2 Quality Driven Face Recognition System for Surveillance Cameras 10:40 AM  
*Saad Bedros, Yadhunandan U.S., Gurumurthy Swaminathan, Honeywell*
- WA5b-3 Improved Iris Segmentation Based on Local Texture Statistics 11:05 AM  
*Vishnu Naresh Boddeti, B.V.K. Vijaya Kumar, Krishnan Ramkumar, Carnegie Mellon University*
- WA5b-4 Radio Frequency Cardiopulmonary Waveform for Subject Identification 11:30 AM  
*Marc O Griofa, Noninvasive Medical Technologies, Incorporated; Rebecca Blue, Orlando Health; Aaron Jaech, Siying Hu, Marios Savvides, Carnegie Mellon University*

## Session WA6a Computational Aspects in Array Processing

Chair: *Christ Richmond, MIT*

- WA6a-1 Fast Implementation of Sparse Iterative Covariance-Based Estimation for Array Processing 8:15 AM  
*Qilin Zhang, Habti Abeida, Ming Xue, William Rowe, Jian Li, University of Florida*
- WA6a-2 Performance of Sample Covariance Based Capon Bearing Only Tracker 8:40 AM  
*Christ Richmond, Robert Geddes, MIT Lincoln Laboratory; Ramis Movassagh, Alan Edelman, Massachusetts Institute of Technology*

- WA6a-3 Some Problems in the Analysis of Possibly Cyclostationary Data 9:05 AM  
*David J. Thomson, Queen's University*
- WA6a-4 Extended Summary for Sidelobe Level Distribution for Linear and Planar Random Arrays with Arbitrary Element Distributions 9:30 AM  
*Siddhartha Krishnamurthy, MIT Lincoln Laboratory / Harvard University; Daniel Bliss, MIT Lincoln Laboratory; Vahid Tarokh, Harvard University*

## Session WA6b Source Separation

Chair: *Wing-Kin Ma, Chinese University of Hong Kong*

- WA6b-1 Comparison of Varieties of Kalman Filtering Algorithms Applied to Single Microphone Blind Audio Source Separation 10:15 AM  
*Siouar Bensaid, Dirk Slock, Eurecom*
- WA6b-2 Insights into the Frequency Domain ICA/IVA Approach 10:40 AM  
*Wenyi Zhang, UBS; Alireza Masnadi-Shirazi, Bhaskar D. Rao, University of California, San Diego*
- WA6b-3 Blind Identification of Mixtures of Quasi-Stationary Sources Using a Khatri-Rao Subspace Approach 11:05 AM  
*Ka-Kit Lee, Wing-Kin Ma, Chinese University of Hong Kong; Yi-Lin Chiou, Tsung-Han Chan, Chong-Yung Chi, National Tsing Hua University*
- WA6b-4 Improved Subspace Intersection Based on Signed URV Decomposition 11:30 AM  
*Mu Zhou, Alle-Jan van der Veen, Delft University of Technology*

## Session WA7a Multi-core/GPU Implementation

Chair: *Jorn Jannick, Lund University, Sweden*

- WA7a-1 GPGPU Accelerated Scalable Parallel Decoding of LDPC Codes 8:15 AM  
*Guohui Wang, Michael Wu, Yang Sun, Joseph R. Cavallaro, Rice University*
- WA7a-2 A High-Performance Area-Efficient AES Encipher on a Many-Core Platform 8:40 AM  
*Bin Liu, Bevan Baas, University of California, Davis*
- WA7a-3 Parallel Implementation of the Wideband Coherent Signal-Subspace (CSS) Based DOA Algorithm on Single core, Multicore and GPU 9:05 AM  
*Mohammad Wadood Majid, Mohsin Jamali, University of Toledo*
- WA7a-4 A Fine-Grained Parallel Implementation of a H.264/AVC Encoder on a 167-Processor Computational Platform 9:30 AM  
*Zhibin Xiao, University of California, Davis; Stephen Le, Intel Corporation; Bevan Baas, University of California, Davis*

## Session WA7b Reconfigurable Architectures, Algorithms and Applications

Chair: *Kenneth Jenkins, Pennsylvania State University*

WA7b-1	Designs of Angle-Rotation in Digital Frequency Synthesizer/Mixer Using Multi-Stage Architectures <i>Shen-Fu Hsiao, Cheng-Han Lee, Yen-Chun Cheng, National Sun Yat-sen University; Andrew Lee, University of California, Berkeley</i>	10:15 AM
WA7b-2	Exploration of Sign Precomputation-Based CORDIC in Reconfigurable Systems <i>Scott Miller, Dian Ross, Mihai Sima, Michael McGuire, University of Victoria</i>	10:40 AM
WA7b-3	A Reduced Routing Network Architecture for Partial Parallel LDPC Decoders <i>Houshmand Shirani-Mehr, University of California, Davis; Tinoosh Mohsenin, University of Maryland, Baltimore County; Bevan Baas, University of California, Davis</i>	11:05 AM
WA7b-4	Automatic FFT Code Generation for FPGA with High Flexibility and Human Readability <i>John O'Sullivan, Institute for System Level Integration / Steepest Ascent Ltd.; Stephan Weiss, University of Strathclyde; Garrey Rice, Steepest Ascent Ltd.</i>	11:30 AM

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