Monday

	Calit2 Multipurpose Rm.	Calit2 Auditorium	CSE Auditorium
8:30		**Continental breakfast**	
	MIMO 1	**2-Dimensional information theory**	**Source coding**
9:00	What does a 3 dB buy in MIMO channels? Kambiz Azarian, and Hesham El Gamal, Ohio State	Two-dimensional information theory Richard Blahut	The multiterminal Source Coding Problem for Spatial Waves Sergio D. Servetto, Cornell, and Joseph M. Rosenblatt, UIUC
9:20	Optimizing the transmit covariance for MIMO channels Alex Grant and Leif Hanlen	Error-correction in two-dimensional fields Jorn Justesen	Precise Asymptotic Analysis of the Tunstall Code Wojtek Szpankowski, Purdue, M. Drmota, TU WIEN, Y. Reznik, Qualcomm, and S. Savari, University of Michigan
9:40	Finite rate feedback MIMO broadcast channels Nihar Jindal	On the computational complexity of 2D maximum-likelihood sequence detection Erik Ordentlich and Ron M. Roth	Simple bounds for lossless source coding in a two-hop network Michelle Effros, and WeiHsin Gu, Caltech
10:00	On Superposition Coding and Beamforming for the Multi-Antenna Gaussian Broadcast Channel Shlomo Shamai, Daniel Wajcer, and Ami Wiesel, Technion, Israel	Two-dimensional graphical models for iterative equalization and decoding Joseph O Sullivan, jointly with Naveen Singla	Ordered and disordered source coding Lav R. Varshney and Vivek K Goyal
10:20		**Break**	
	MIMO 2	**Coded modulation**	**Lossy compression**
10:40	Performance of MIMO techniques to achieve full diversity and maximum spatial multiplexing Ender Ayanoglu, Enis Akay, and Ersin Sengul, UC Irvine	Low Density Lattice Codes Meir Feder, Naftali Sommer, and Ofir Shalvi, Tel-Aviv University	From physics to distributed rate-distortion Martin Vetterli, jointly with B.Konsbruck and E.Telatar
11:00	MIMO downlink joint processing and scheduling: a survey of classical and recent results Giuseppe Caire, USC	PSK bit mappings with good minimax error probability Erik Agrell, and Erik G. Ström, Chalmers University of Technology, Sweden	Nonharmonic fourier analyis of oversampled A/D conversion Zoran Cvetkovic, King's College London
11:20	Symmetry and asymmetry of MIMO channels Emmanuel Abbe, MIT, Emre Telatar, EPFL, and Lizhong Zheng, MIT	Design of a coded modulation for deep space optical communications Bruce Moision, Jon Hamkins and Michael Cheng	Lossy source coding of oversampled data David L. Neuhoff
11:40	The impact of time-reversal modulation on the performance of cooperative relaying strategies in wireless networks Richard J. Barton, and Rong Zheng, University of Houston	Implementation of a coded modulation for deep space optical communications Michael Cheng, Bruce Moision, Jon Hamkins, and Michael Nakashima, JPL, Pasadena	On the static accuracy of digitally corrected analog-to-digital and digital-to-analog converters Hans-Andrea Loeliger and Matthias Frey
12:00		**Lunch**	
	Communications 1	**Construction of space time codes**	**Lossy compression, A/D**
1:20	Cellular OFDM and 'self-noise' Rajiv Laroia and Tom Richardson, Qualcomm Flarion Technologies	Grassmannian Packings from Multidimensional Second Order Reed-Muller Codes Alexei Ashikhmin, Bell Labs, A.R. Calderbank, Princeton,	The Role of Prediction in Signal Compression and Equalization Ram Zamir, Yuval Kochman, Uri Erez, Tel Aviv University

		and W. Kewlin, Universitat Mannheim	
1:40	Beyond OFDM Thomas Marzetta, Jack Salz and Aiyou Chen	Achieving the D-MG and DMD Tradeoffs of MIMO Fading Channels P. Vijay Kumar	Quantization with Lagrangian distortion measures Robert M. Gray
2:00	Multiuser detection in a dynamic environment Ezio Biglieri,Universitat Pompeu Fabra, Barcelona, Spain, and Marco Lops, DAEIMI	Near outage limit space-time coding for MIMO channels Joseph J. Boutros, G.M. Kraidy, and N. Gresset, ENST, Paris	Analysis of LDGM and compound codes for lossy compression and binning Martin J. Wainwright, UC Berkeley, and Emin Martinian, MERL
2:20	Dropping Users in a Multi-Antenna Broadcast Channel Chau Yuen and Bertrand Hochwald	A family of distributed space-time trellis codes achieving full diversity for asynchronous cooperative communications Yabo Li, Yue Shang, and Xiang-Gen Xia, University of Delaware	Rate distortion optimization in H.264 En-Hui Yang, University of Waterloo
2:40		**Break**	
	Communications 2	**Optimization & decoding of space-time codes**	**Distributed source coding 1**
3:00	Throughput Scaling in Random Wireless Networks Radhika Gowaikar, Bertrand Hochwald and Babak Hassibi	On universally decodable matrices for space-time coding Pascal Vontobel, MIT, and Ashwin Ganesan, Univ. of Wisconsin	On Scalable Source Coding for Multiple Decoders with Side Information Suhas Diggavi, and Chao Tian, EPFL, Switzerland
3:20	On the distribution of mutual information J. Nicholas Laneman	Further Results on the SNR Exponent of Hybrid Digital Analog Space Time Codes Krishna Narayanan and Giuseppe Caire	The Rate Region of the Quadratic Gaussian Two-Terminal Source-Coding Problem Aaron Wagner, Saurabha Tavildar and Pramod Viswanath, UIUC
3:40	Capacity of cell clusters with coordinated processing Alessandro Vanelli-Coralli, Roberto Padovani, Jilei Hou and John Smee	Optimizing space-time codes via stochastic optimization Xiaodong Wang, Columbia	On Low-Complexity Decodable Universally Good Linear Codes Todd Coleman, UIUC, and Muriel Medard, MIT
4:00		**Break**	
	Communications 3	**Constrained codes**	**Distributed source coding 2**
4:20	Path diversity and multiple descriptions with rate dependent packet losses Jagadeesh Balam and Jerry D. Gibson	MTR and RLL constraints with unconstrained positions T. Lei Poo and Brian Marcus	Separate source coding of correlated Gaussian remote sources Yasutada Oohama
4:40	Capacity bounds and code designs for cooperative diversity A. Host-Madsen, University of Hawaii, M. Uppal, Z. Liu, V. Stankovic, and Z. Xiong, Texas A&M	On the Design of Finite-State Shaping Encoders for Partial-Response Channels Joseph Soriaga, Qualcomm, and Paul Siegel, UCSD	A Graph-based Framework for Transmission of Correlated Sources over Broadcast Channels S. Sandeep Pradhan and Suhan Choi
5:00	Universal Burst Correction Marc Fossorier	Encoding algorithms for two dimensional constraints for patterned media Hiroshi Kamabe	Multi-terminal source coding with unreliable sensors Ozgun Bursalioglu, and Ertem Tuncel, UC Riverside

Tuesday

	Calit2 Multipurpose Rm.	**Calit2 Auditorium**	**CSE Auditorium**

8:30		**Continental breakfast**	
	Wireless networks	**Algebraic and combinatorial coding**	**Universal compression 1**
9:00	Adaptive Transmission for Mobile Packet-Radio Networks: Protocol Performance vs. Capacity Limits Michael Pursley ,Thomas C. Royster and Jason S. Skinner	Spectral approach to linear programming bounds on binary codes Alexander Barg, University of Maryland, and Dmitry Nogin, IPPI	Rate-Distortion without Random Codebooks Jorma Rissanen and I. Tabus
9:20	Energy efficiency and delay quality-of-service in wireless networks Farhad Meshkati, H. Vincent Poor, Stuart C. Schwartz and Radu V. Balan	Dissections and constant-weight codes Vinay Vaishampayan, N.J.A. Sloane and Chao Tian	Applications of Error Correcting Codes in Nanotechnology Gadiel Seroussi
9:40	Noncooperative optimization of space-time signals in ad hoc networks Ron Iltis and Duong Hoang	Covering spheres with spheres Ilya Dumer, UC Riverside	Universal Switching Linear Least Squares Prediction Andrew Singer, UIUC
10:00	Capacity and cooperation in wireless networks Andrea Goldsmith and Chris Ng	The convex geometry of binary linear codes Navin Kashyap	Making the correct mistakes: Towards practical, universal lossy compression Dharmendra S. Modha and Narayana P. Santhanam
10:20		**Break**	
	Detection etc	**LDPC Codes**	**Universal compression 2**
10:40	Fundamental limits of multipath aided serial search acquisition Watcharapan Suwansantisuk, and Moe Z. Win, MIT	Constructions of Nonbinary Quasi-Cyclic LDPC Codes: A Finite Field Approach Shu Lin, Shumei Song, Lan Lan, Lingqi Zeng and Ying Y. Tai	Context-tree weighting and maximizing: processing betas Frans Willems, Tjalling Tjalkens, and Tanya Ignatenko, TU, Eindhoven, The Netherlands
11:00	A simple polarization diversity technique for radar detection Robert Calderbank, S.D. Howard, and W. Moran, Princeton	A comparison between LDPC block and convolutional codes Daniel J. Costello, Ali E. Pusane, and Kamil Sh. Zigangirov, University of Notre Dame, and Stephen Bates, University of Alberta	The universal simulation setting: A review and some new results Marcelo J. Weinberger, based on joint works with Neri Merhav and with Gadiel Seroussi
11:20	Asymptotic robust detection based on moment classes Venu Veeravalli, UIUC	On Joint Decoding and Random CDMA Demodulation Christian Schlegel, University of Alberta	The lower limits of universal denoising Krishnamurthy Viswanathan, jointly with Erik Ordentlich
11:40	Quasi-cyclic generalized Hadamard matrices Ji-Woong Jang, Jong-Seon No and Habong Chung	Non-systematic LDPC codes for redundant data Gil I. Shamir, University of Utah, Joseph J. Boutros, ENST Paris, Amira Alloum, France Telecom, and Li Wang, University of Utah	Compressed data structures Jeffrey Vitter, Purdue
12:00		**Lunch**	
	Channel coding	**Analysis of iterative decoding**	**Network coding 1**
1:20	Subspace rings: a new tool in communication trellis design John Kieffer	On the Block Error Probability of LP Decoding of LDPC Codes Ralf Koetter and Pascal O. Vontobel	Network coding, Algebraic coding, and Network error correction Raymond W. Yeung, and Ning Cai, The Chinese University of Hong Kong
1:40	Why delay and block length are not the same thing for	Some new results on the loopy sum-product algorithm	Edge-cut bounds on Network Coding Rates

Tuesday Class

	channel coding with feedback Anant Sahai, UC Berkeley	Sekhar Tatikonda, Yale	Serap A. Savari, University of Michigan
2:00	Error exponents for channel coding and signal constellation design Jianyi Huang, Sean Meyn and Muriel Medard	Failures of the Gallager B Decoder: Analysis and Bane Vasic, University of Arizona	Capacity Bounds for Relay Networks Gerhard Kramer, Bell Labs and Serap A. Savari, University of Michigan
2:20	Using bandwidth sharing to fairly overcome channel asymmetry Sachin Agarwal, Deutsche Telekom AG, Moshe Laifenfeld, Ari Trachtenberg, and Murat Alanyali, Boston University	Ensemble analysis on minimum span of stopping sets Tadashi Wadayama, Nagoya Institute of Technology	Simple Network Codes for Instantaneous Recovery from Edge Failures in Unicast Connections Salim Yaacoub El Rouayhe, Alex Sprintson, and Costas Georghiades, Texas A&M
2:40		**Break**	
	Single and multi-user channels	**Codes on graphs**	**Network coding 2**
3:00	Some remarks on the nature of the cutoff rate parameter Erdal Arikan, Bilkent, Turkey	Fountain codes: theory and practice Michael Luby Digital Fountain	A systematic approach to network coding problems using conflict graphs Jay Kumar Sundararajan, Muriel Medard, Ralf Koetter and Elona Erez
3:20	Channel capacity with side information - a unified view Syed A Jafar, UC Irvine	Capacity-Achieving Ensembles of Accumulate-Repeat-Accumulate Codes for the Erasure Channel with Bounded Complexity Igal Sason, Technion, and Henry Pfister, EPFL	On network coding and routing in dynamic wireless multicast networks Tracey Ho, Jai-Qi Jin and Harish Viswanathan
3:40	The Strong Interference Channel with Unidirectional Cooperation R. Yates and I. Maric, Rutgers, and Gerhard Kramer, Bell Labs	Design and performance of selected classes of Tanner codes William Ryan, University of Arizona	Signatures for network coding Denis Charles, Kamal Jain, and Kristin Lauter, Microsoft Research
4:00		**Break**	
	Multi-user channels	**New codes and their applications**	**Network coding 3**
4:20	Relay Networks with Delays Abbas El Gamal, and James Mammen, Stanford	Rateless coding for Gaussian channels and Perfect Incremental Redundancy Uri Erez, Tel Aviv University, Mitchell D. Trott, HP Labs, and Gregory W. Wornell, MIT	The Local Mixing Problem Yunnan Wu, Jitendra Padhye, Ranveer Chandra, Venkat Padmanabhan, and Philip A. Chou, Microsoft Research
4:40	Variations on the multiple access problem Michael Gastpar, UC Berkeley	Interleaver-Division Multiple Access on the OR Channel Miguel Griot, Andres I. Vila Casado, Wen-Yen Weng, Juthika Basak, Eli Yablanovitch, Ingrid Verbauwhede, Bahram Jalali, and Richard D. Wesel, UCLA	On Capacity of Line Networks Daniela Tuninetti, University of Illinois at Chicago, Urs Niesen, MIT, and Christina Fragouli, EPFL, Switzerland
5:00	A comparison of two achievable rate regions for the interference channel Hon-Fah Chong, Mehul Motani and Hari Krishna Garg	On integer codes Ulrich Tamm, University of Chemnitz	Knotwork coding Ángela Barbero, University of Valladolid, and Øyvind Ytrehus, Bergen University, Norway

Wednesday

Calit2 Auditorium, overflow at the Multipurpose Room

9:00		**Keynote lecture**	
		Decoding the Information in Genomes and Protein Networks, Richard Karp, UC Berkeley	
10:00		**Panel discussion**	
11:00		**Center inauguration**	
11:45		**Lunch**	
1:00		**Open problems**	
2:30		**Break**	
3:00		**Social events**	
5:30		**Break**	
7:00		**Banquet - faculty club**	

Thursday

	Calit2 Multipurpose Rm.	**Calit2 Auditorium**	**CSE Auditorium**
8:30		**Continental breakfast**	
	Control	**Life-sciences tutorial**	
9:00	Statistical inference and statistcial mechanics Sanjoy Mitter		
9:20	The convergence of control with communication and computation P. R. Kumar	See the 3-hour tutorial	
9:40	Estimation and control over unreliable communication channels Kameshwar Poolla		
10:00	Generalized Nonlinear Impulse Response and Nonlinear Convolution in a Reproducing Kernel Hilbert Space F Rui de Figueiredo, UC Irvine		
10:20		**Break**	
	Sensor networks	**Life-sciences tutorial**	
10:40	From Dumb Wireless Sensors to Smart Networks using Network Coding Alexandros G. Dimakis, Dragan Petrovic and Kannan Ramchandran		
11:00	Shared Sensing and Communications in Sensor Networks: The Multihop Case Satish Vedantam, Urbashi Mitra and Ashutosh Sabharwal	See the 3-hour tutorial	
11:20	Uncertainty nested in uncertainty: modeling in sensor networks Greg Pottie		
11:40	On scalability in sensor networks Upamanyu Madhow		
12:00		**Lunch**	
	Sensor and general networks	**Bioinformatics 1**	**Probability and statistics 1**
1:20	Connectivity, devolution, and lacunae in geometric random graphs Santosh S. Venkatesh, University of Pennsylvania	The auditory code: how neurons transmit information about the world Gal Chechik	Poisson convergence can yield very sharp transitions in geometric random graphs Guang Han and Armand M. Makowski

Thursday Class Switching Experts

1:40	Pulse communications Anand Dhulipala, UCSD, Christina Fragouli, EPFL and Alon Orlitsky, UCSD	Predictive modeling of transcriptional gene regulation Christina Leslie	CMA Channel Parameters Maximizing TCP Throughput Francois Baccelli, ENS, France, Rene L Cruz, UCSD, and Antonio Nucci, Narus
2:00	Asymptotic results for star circuit switched networks using occupancy models Phil Whiting, Bell Labs	Machine-learning methods for finding HIV epitopes David Heckerman	A case for partial connectivity in large wireless multi-hop networks. Olivier Dousse, EPFL, Massimo Franceschetti, UCSD, and Patrick Thiran, EPFL
2:20	Generalized Clos Networks for Packet Switching Joseph Hui, Arizona State University	Epitomes and HIV vaccine design Nebojsa Jojic	Predictive Information and Dynamical Systems Inference Tali Tishby, Felix Creutzig, Amir Globerson. Hebrew University
2:40		**Break**	
	General networking	**Bioinformatics 2**	**Probability and statistics 2**
3:00	Network-Coding in Interference Networks Sriram Vishwanath, UT Austin	The information content of a sequence motif -- evaluating its statistical significance Uri Keich and Niranjan Nagarajan, Cornell University, and Neil Jones, UCSD	Information and the central limit theorem Andrew Barron, Yale University
3:20	Geometric Capacity Provisioning for Wavelength-Switched WDM Networks Li Wei Chen and Eytan Modiano	Bioinformatics, Chemoinformatics, and Drug Design Pierre Baldi	The importance of reguralization Peter Bickel
3:40	One-way delay estimation using network-wide measurements Moshe Sidi, Omer Gurewitz, and Israel Cidon, Technion, Israel	How many founders shall we assume for haplotype reconstruction? --- on coalescence, Dirichlet processes, and nonparametric Bayes Eric Xing School of Computer Science Carnegie Mellon University	Classification and regression with structured outputs David McAllester
4:00		**Break**	
	Resource allocation 1	**Biological applications**	**Physics and geometry**
4:20	Optimal power-delay trade-offs in fading channels: small delay asymptotics Randall Berry, Northwestern University	Monotony and surprise Alberto Apostolico Georgia Tech & Univ. of Padova	Randomness, second law of thermodynamics, and computational complexity Vwani Roychowdhury
4:40	Achieving Queue-Length Stability Through Maximal Scheduling in Wireless Networks Prasanna Chaporkar, INRIA Koushik Kar, Rensselaer Polytechnic Institute Saswati Sarkar, University of Pennsylvania	Biological Circuits Jehoshua Bruck, Caltech	The mathematics of multi-a(ge)nt interactions or how to coordinate a swarm of simple robots Alfred Bruckstein
5:00	A random-walk model for distributed computation in energy-limited networks Murat Alanyali, Venkatesh Saligrama, and Onur Savas, Boston University	Error and Quality Control Coding for DNA Microarrays Olgica Milenkovic	Directed information and Conditional Mutual Information Peter Harremoes

Friday

	Calit2 Multipurpose Rm.	Calit2 Auditorium	CSE Auditorium
8:30		**Continental breakfast**	
	Resource allocation 2	**Quantum IT and cryptography**	**Machine learning 1**
9:00	Intelligent packet dropping for optimal energy-delay tradeoffs in wireless networks Michael Neely	When is a quantum source Markov? Emina Soljanin, Bell Labs	The stability of a good clustering Marina Meila, University of Washington
9:20	Optimal Node-based Power Control, Routing, and Congestion Control in Wireless Networks Edmund Yeh, Yale	Catalytic quantum error correction Igor Devetak, Min-Hsiu Hsieh and Todd Brun, USC	Neighbourhood Components Analysis Sam Roweis
9:40	Cross-Layer Design for Multihop Wireless Networks Ness B. Shroff, Purdue	Secret Key Constructions for Simple Multiterminal Source Models Chunxuan Ye and Prakash Narayan	Learning and predicting human behavior with stochastic models Padhraic Smyth, UC Irvine
10:00	Queue Length Stability of Maximal Greedy Schedules in Wireless Networks Xinzhou Wu, Flarion, R. Srikant, UIUC, and James R. Perkins, Boston University	Outage-optimal cooperative relaying Salman Avestimehr, and David Tse, UC Berkeley	Wireless sensing, active learning, and compressive sampling Rui Castro, Jarvis Haupt, and Robert Nowak
10:20		**Break**	
	Distributed computation and peer-peer networks	**Bioinformatics 3**	**Machine learning 2**
10:40	Communication using helping repeaters V. Balakirsky and A.J. Han Vinck, University of Essen, Germany	Sparse Bayesian classification and its applications in systems biology Alexander J. Hartemink, Duke University	Information-theoretic approaches to cost-efficient diagnosis Irina Rish
11:00	Model and simulation study of a peer-to-peer game with a reputation-based incentive mechanism Bita Mortazavi and George Kesidis	Robust design of biological experiments Patrick Flaherty, Michael I. Jordan and Adam P. Arkin, UC Berkeley	Structured region graphs: a general framework for message passing algorithms Max Welling
11:20	On Computationally Bounded Adverserial Capacity Kyomin Jung, MIT, and Devavrat Shah, MIT	Phylogenetic Profiling of Insertions and Deletions in Vertebrate Genomes Sagi Snir, Dept. of math, UC Berkeley Lior Pachter, Dept. of math, UC Berkeley	Information theory tools to rank MCMC algorithms on probabilistic graphical models Firas Hamze, Jean-Noel Rivasseau, and Nando de Freitas, Univ. of British Columbia
11:40	Delay Constrained flooding search Nicholas B. Chang and Mingyan Liu	Protein Optimization with Machine Learning Algorithms Manfred K. Warmuth, Jun Liao, UC Santa Cruz, and Jeremy Minshull, DNA 2.0, Memlo Park	Generative and discriminative structure learning using mutual information Jeff Bilmes University of Washington, Seattle Department of Electrical Engineering
12:00		**Lunch**	
	Topics in wireless networks	**Vision and language**	**Probability and statistics 3**
1:20	UV aided ad hoc wireless networking using mobile backbones Izhak Rubin, UCLA	Mutual information between words and pictures Kobus Barnard,University of Arizona, and Keiji Yanai, The University of Electro-Communications	New coins from old: simulation with unknown bias Yuval Peres, UC Berkeley

1:40	On Walsh code assignment Boris Tsybakov, Qualcomm	Building a classification cascade for visual identification from one example Erik Learned-Miller	Information divergence measures and surrogate loss functions XuanLong Nguyen, Martin Wainwright and Michael I. Jordan
2:00	An interpolation algorithm for list decoding of Reed-Solomon Codes Kwankyu Lee and Michael O'Sullivan	Estimating Conditional Densities from Sparse Data for Statistical Language Modeling Damianos Karakos and Sanjeev Khudanpur	Lasso: Blasso algorithm and a model selection consistency result Bin Yu, UC Berkeley