

# 2002 IEEE COMMUNICATION THEORY WORKSHOP

## FINAL PROGRAM

Sunday Evening, May 19		
6-7pm	Welcome Reception — Pool	
7-8:30	Welcome Dinner — Pool	
Monday Morning, May 20		
8-9am	Breakfast — Lounge	
<b>*Session 1: Propagation</b> <i>Chair: Theodore S. Rappaport, Virginia Tech, Blacksburg, VA</i>		
9-9:25	Kevin W. Sowerby, Adrian V. Pais, and Michael J. Neve, <i>University of Auckland</i>	<b>Correlated Shadowing at 2 GHz and its Effects on the Performance of Mixed Indoor-Outdoor Wireless Systems</b>
9:25-9:50	Robert Heath <i>University of Texas at Austin</i>	<b>Characterization of Narrowband Multiple Input Multiple Output (MIMO) Channels</b>
9:50-10:15	Claude Oestges and Arogyaswami J. Paulraj <i>Stanford University</i>	<b>A Physical Model for Broadband MIMO Macrocell Channels</b>
10:15-10:45	coffee break	
10:45-11:10	Reinaldo Valenzuela <i>Bell Labs, Lucent Technologies</i>	<b>Wideband MIMO Channel Modeling for System Simulations</b>
11:10-11:35	Joseph C. Liberti, <i>Telecordia</i>	<b>Dynamic Hybrid MLJD-Based MIMO Systems, Experiments and Results</b>
11:35-12:00	John McCorkle <i>XtremeSpectrum</i>	<b>So What's So Special About UWB Propagation?</b>
12-2pm	Lunch Break (on your own)	

\*All sessions will be held in the Sanibel/Captiva Room.

Monday Afternoon and Evening, May 20

## Session 2: Security

Chair: Ian F. Blake, University of Toronto, Ontario

2-2:15	Ian Blake, <i>University of Toronto</i>	<b>A Security Overview</b>
2:15-3	Bart Preneel, <i>Katholieke Universiteit Leuven</i>	<b>Block and Stream Ciphers</b>
3-3:30	coffee break	
3:30-4:15	Christof Paar, <i>Ruhr University Bochum</i>	<b>Hardware Aspects of Cryptography</b>
4:15-5	Alfred Menezes, <i>University of Waterloo</i>	<b>Public Key Cryptography</b>
5:30-6:30	Reception — Pool	
6:30-8	Dinner — Pool	

## Session 3: Recent Results and Hot Topics (Evening Session)

Chair: Steven W. McLaughlin, Georgia Tech, Atlanta, GA

8 pm	A. Sayeed and V. Veeravalli <i>Univ. of Wisconsin, Univ. of Illinois</i>	<b>Essential Degrees of Freedom in Space-Time MIMO Channels</b>
	A. Anastasopoulos <i>University of Michigan</i>	<b>Polynomial-Complexity Symbol-by-Symbol Detection in the Presence of Unknown Parameters with Application to Non-Coherent Decoding of LDPC Codes</b>
	Z. Wang and G. Giannakis, <i>U. of Minnesota</i>	<b>What Determines Average and Outage Performance in Fading Channels?</b>
	S. Ghassemzadeh, R. Jana, C. Rice, W. Turin, and V. Tarokh, <i>AT&amp;T, MIT</i>	<b>Measurement and Modeling of an Ultra-Wide Bandwidth Indoor Channel</b>
	P. Nanan and Masao Nakagawa <i>Keio University</i>	<b>Performance of Multi-Carrier CDMA in a Multicell Environment</b>
	M. Fozunbal, S. McLaughlin, R. Schaefer <i>Georgia Tech</i>	<b>Error Probability Bounds in MIMO Channels</b>
	J.Hagenauer, M.Tuechler, and A. Schaefer <i>Technische Universität München</i>	<b>EXIT Charts: New Analytical Results and Simulation Results for Irregular Convolutional Codes</b>
	J. Li, K. R. Narayanan, and C. Georghiadis <i>Texas A&amp;M</i>	<b>Computing the Euclidean Distance Spectrum of a General ISI Channel</b>

Tuesday, May 21

8-9am Breakfast — Lounge

### Session 4: Iterative Techniques

Chair: G. David Forney, Jr., MIT, Cambridge, MA

9-9:30	Joachim Hagenauer <i>Lucent, Technische Universität München</i>	<b>A Multi-Gb/s Tail-Biting Decoder Chip in Analog VLSI for Optical Fiber</b>
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9:30-10	Chris Heegard, <i>Texas Instruments Alantro</i>	<b>Turbo Code Chip for Local Wireless Access</b>
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10-10:30	Steve McLaughlin <i>Calimetrics / Georgia Tech</i>	<b>Calimetrics 2nd-Generation M-ary DVD Chip with Turbo Code</b>
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10:30-11 coffee break

11-11:30	Tom Richardson, <i>Flarion</i>	<b>LDPC Codes for Wireless Data</b>
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11:30-12	Amin Shokrollahi, <i>Digital Fountain</i>	<b>Luby Transform Codes for Internet Content Delivery</b>
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12-2pm Lunch Break (on your own)

### Session 5: Coding and Signal Processing for Storage

Chair: William E. Ryan, University of Arizona, Tuscon, AZ

2-2:30	Evangelos Eleftheriou <i>IBM Research, Zurich</i>	<b>The Role of Signal Processing and Coding in Data Storage: State of the Art and Future Trends</b>
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2:30-3	Jae Moon, <i>University of Minnesota</i>	<b>Signal Processing Challenges in Data Storage</b>
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3-3:30	Alek Kavcic, <i>Harvard University</i>	<b>The Feedback Capacity of Finite-State Machine Channels</b>
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3:30-4 coffee break

4-4:30	Sergio Benedetto <i>Politecnico di Torino, Italy</i>	<b>Design and Low-Complexity Decoding of High-Rate Convolutional Codes with Application to Magnetic Recording</b>
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4:30-5	Bane Vasic <i>University of Arizona</i>	<b>Resolvable Balanced Incomplete Block Designs and Low-Density Parity Check Codes</b>
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5:30-6:30 Reception — Pool

6:30-8pm Dinner — Pool

8-10pm Committee Meeting — Sanibel/Captiva Room

Wednesday Morning, May 22

8-9am

Breakfast — Lounge

### Session 6: OFDM and MIMO Communications

*Chair: Vahid Tarokh, MIT, Cambridge, MA*

9-9:30

S. Diggavi, N. Al-Dhahir, A. Stamoulis, and  
A. Calderbank, *AT&T Labs Research*

**Space-Time OFDM Scheme for Fast-Varying Channels**

9:30-10

Ayman Naguid  
*Morphics Inc.*

**Frequency-Domain Interference Suppression and Equalization for Space-Time Block-Coded OFDM**

10-10:30

Stefan Kaiser, *German Aerospace Center DLR*

**Diversity in OFDM Systems**

10:30-11

coffee break

11-11:30

Fred Daneshgaran  
*California State University LA*

**Symbol Timing Recovery for Multichannel Modulation: Theory and Implementation**

11:30-12

Chan Vee Chong and Vahid Tarokh  
*Government of Singapore, MIT*

**Two Constructions of 16-QAM Golay Complementary Sequences**