

Last update: June 11

# STOC 2004 Schedule

Chicago Hilton and Towers Hotel  
720 South Michigan Avenue, Chicago

## Saturday, June 12, 2004

- 5:00 - 9:00 PM      **Registration desk open**
- 7:00 - 9:00 PM      **Welcome Reception. Boulevard Room and Foyer, 2nd floor**

## Sunday, June 13, 2004

- 8:00 AM - 5:00 PM    **Registration desk open**
- 8:00 - 8:35 AM      **Continental breakfast. Continental Ballroom Lobby, 1st floor**
- 8:35 - 10:10 AM     **Session 1A. Continental Ballroom A-B. Chair: Oded Regev**  
8:35 - 8:55 AM     *Robust PCPs of Proximity, Shorter PCPs and Applications to Coding*  
ELI BEN-SASSON (Radcliffe/Harvard), ODED GOLDREICH (Weizmann) PRAHLADH HARSHA (MIT), MADHU SUDAN (MIT), SALIL VADHAN (Harvard)
- 9:00 - 9:20 AM     *A New PCP Outer Verifier with Applications to Homogeneous Linear Equations and Max-Bisection*  
JONAS HOLMERIN (KTH, Stockholm), SUBHASH KHOT (Georgia Tech)
- 9:25 - 9:45 AM     *Asymmetric  $k$ -Center is  $\log^* n$  - Hard to Approximate*  
JULIA CHUZHUY (Technion), SUDIPTO GUHA (UPenn), ERAN HALPERIN (Berkeley), SANJEEV KHANNA (UPenn), GUY KORTSARZ (Rutgers), JOSEPH (SEFFI) NAOR (Technion)
- 9:50 - 10:10 AM    *New Hardness Results for Congestion Minimization and Machine Scheduling*  
JULIA CHUZHUY (Technion), JOSEPH (SEFFI) NAOR (Technion)
- 8:35 - 10:10 AM     **Session 1B. Continental Ballroom C. Chair: Sandy Irani**  
8:35 - 8:55 AM     *On the Performance of Greedy Algorithms in Packet Buffering*  
SUSANNE ALBERS (Freiburg), MARKUS SCHMIDT (Freiburg)
- 9:00 - 9:20 AM     *Adaptive Routing with End-to-End Feedback: Distributed Learning and Geometric Approaches*  
BARUCH AWERBUCH (Johns Hopkins), ROBERT D. KLEINBERG (MIT)
- 9:25 - 9:45 AM     *Know Thy Neighbor's Neighbor: The Power of Lookahead in Randomized P2P Networks*  
GURMEET SINGH MANKU (Stanford), MONI NAOR (Weizmann), UDI WIEDER (Weizmann)
- 9:50 - 10:10 AM    *The Zero-One Principle for Switching Networks*  
YOSSI AZAR (Tel Aviv), YOSSI RICHTER (Tel Aviv)
- 10:10 - 10:35 AM    **Coffee break. Continental Ballroom Lobby**

- 10:35 - 11:20 AM **Session 2A. Continental Ballroom A-B. Chair: Adam Klivans**  
 10:35 - 10:55 AM *Approximating the Cut-Norm via Grothendieck's Inequality*  
 NOGA ALON (Tel Aviv), ASSAF NAOR (Microsoft)
- 11:00 - 11:20 AM *Nearly-Linear Time Algorithms for Graph Partitioning, Graph Sparsification, and Solving Linear Systems*  
 DANIEL A. SPIELMAN (MIT), SHANG-HUA TENG (Boston U.; Akamai)
- 10:35 - 11:20 AM **Session 2B. Continental Ballroom C. Chair: Tal Malkin**  
 10:35 - 10:55 AM *Dictionary Matching and Indexing with Errors and Don't Cares*  
 RICHARD COLE (Courant), LEE-AD GOTTLIEB (Courant), MOSHE LEWENSTEIN (Bar-Ilan U.)
- 11:00 - 11:20 AM *Sorting and Searching in the Presence of Memory Faults (without Redundancy)*  
 IRENE FINOCCHI (U. Roma "Tor Vergata"), GIUSEPPE F. ITALIANO (U. Roma "Tor Vergata")
- 11:30 - 12:30 PM **Session 3 - Invited Talk. Continental Ballroom A-B. Chair: D. Sivakumar**  
*Quantum Algorithms a Decade After Shor*  
 ANDRIS AMBAINIS (IAS)
- 12:30 - 2:00 PM **Lunch. International Ballroom South, 2nd floor**
- 2:00 - 3:10 PM **Session 4A. Continental Ballroom A-B. Chair: Andris Ambainis**  
 2:00 - 2:20 PM *Graph Entropy and Quantum Sorting Problems*  
 ANDREW CHI-CHIH YAO (Princeton)
- 2:25 - 2:45 PM *Multilinear Formulas and Skepticism of Quantum Computing*  
 SCOTT AARONSON (Berkeley)
- 2:50 - 3:10 PM *Exponential Separation of Quantum and Classical One-way Communication Complexity*  
 ZIV BAR-YOSSEF (IBM Almaden), T. S. JAYRAM (IBM Almaden), IORDANIS KERENIDIS (Berkeley)
- 2:00 - 3:10 PM **Session 4B. Continental Ballroom C. Chair: Robert Krauthgamer**  
 2:00 - 2:20 PM *Approximation Algorithm for  $k$ -node Connected Subgraphs via Critical Graphs*  
 GUY KORTSARZ (Rutgers), ZEEV NUTOV (Open U., Tel Aviv)
- 2:25 - 2:45 PM *Solving Fractional Packing Problems in  $O^*(1/\epsilon)$  Iterations*  
 DANIEL BIENSTOCK (Columbia), GARUD IYENGAR (Columbia)
- 2:50 - 3:10 PM *The All-or-Nothing Multicommodity Flow Problem*  
 CHANDRA CHEKURI (Lucent), SANJEEV KHANNA (UPenn), F. BRUCE SHEPHERD (Lucent)
- 3:10 - 3:30 PM **Coffee break. Continental Ballroom Lobby**
- 3:30 - 4:40 PM **Session 5A. Continental Ballroom A-B. Chair: Moses Charikar**  
 3:30 - 3:50 PM *Approximation Algorithms for Deadline-TSP and Vehicle Routing with Time-Windows*  
 NIKHIL BANSAL (CMU), AVRIM BLUM (CMU), SHUCHI CHAWLA (CMU), ADAM MEYERSON (UCLA)
- 3:55 - 4:15 PM *Estimating the Weight of Metric Minimum Spanning Trees in Sublinear-Time*  
 ARTUR CZUMAJ (N.J. Inst. Tech.), CHRISTIAN SOHLER (Paderborn)
- 4:20 - 4:40 PM *A Fully Dynamic Reachability Algorithm for Directed Graphs with an Almost Linear Update Time*  
 LIAM RODITTY (Tel Aviv), URI ZWICK (Tel Aviv)

- 3:30 - 4:40 PM      **Session 5B. Continental Ballroom C. Chair: D. Sivakumar**  
 3:30 - 3:50 PM      *Using Nondeterminism to Amplify Hardness*  
 ALEXANDER HEALY (Harvard), SALIL VADHAN (Harvard), EMANUELE VIOLA (Harvard)
- 3:55 - 4:15 PM      *Visibly Pushdown Languages*  
 RAJEEV ALUR (UPenn), P. MADHUSUDAN (UPenn)
- 4:20 - 4:40 PM      *Linear FPT Reductions and Computational Lower Bounds*  
 JIANER CHEN (Texas A&M), XIUZHEN HUANG (Texas A&M), IYAD A. KANJ (DePaul), GE XIA (Texas A&M)
- 4:40 - 5:00 PM      **Coffee break. Continental Ballroom Lobby**
- 5:00 - 5:40 PM      **Session 6 - Best Paper. Continental Ballroom A-B. Chair: Éva Tardos**  
*Expander Flows, Geometric Embeddings and Graph Partitioning*  
 SANJEEV ARORA (Princeton), SATISH RAO (Berkeley), UMESH VAZIRANI (Berkeley)
- 8:40 - 10:00 PM      **STOC Business Meeting. Boulevard A-B, 2nd floor**  
 It is YOUR business! All participants are invited. Come, let your voice be heard!

## Monday, June 14, 2004

- 8:00 AM - 5:00 PM      **Registration desk open**
- 8:00 - 8:35 AM      **Continental breakfast. Continental Ballroom Lobby**
- 8:35 - 10:10 AM      **Session 7A. Continental Ballroom A-B. Chair: Boaz Barak**  
 8:35 - 8:55 AM      *Bounded-Concurrent Secure Multi-Party Computation with a Dishonest Majority*  
 RAFAEL PASS (KTH, Stockholm)
- 9:00 - 9:20 AM      *New Notions of Security: Achieving Universal Composability without Trusted Setup*  
 MANOJ PRABHAKARAN (Princeton), AMIT SAHAI (Princeton)
- 9:25 - 9:45 AM      *Completeness in Two-Party Secure Computation - A Computational View*  
 DANNY HARNIK (Weizmann), MONI NAOR (Weizmann), OMER REINGOLD (Weizmann), ALON ROSEN (MIT)
- 9:50 - 10:10 AM      *Batch Codes and Their Applications*  
 YUVAL ISHAI (Technion), EYAL KUSHILEVITZ (Technion), RAFAEL OSTROVSKY (UCLA), AMIT SAHAI (Princeton)
- 8:35 - 10:10 AM      **Session 7B. Continental Ballroom C. Chair: Robert Krauthgamer**  
 8:35 - 8:55 AM      *Low Distortion Maps Between Point Sets*  
 CLAIRE KENYON (École Poly., Palaiseau), YUVAL RABANI (Technion; Cornell), ALISTAIR SINCLAIR (Berkeley)
- 9:00 - 9:20 AM      *Bypassing the Embedding: Approximation Schemes and Compact Representations for Low Dimensional Metrics*  
 KUNAL TALWAR (Berkeley)
- 9:25 - 9:45 AM      *Coresets for  $k$ -Means and  $k$ -Median Clustering*  
 SARIEL HAR-PELED (UIUC), SOHAM MAZUMDAR (UIUC)
- 9:50 - 10:10 AM      *Isotopic Implicit Surface Meshing*  
 JEAN-DANIEL BOISSONNAT (INRIA), DAVID COHEN-STEINER (Duke), GERT VEGTER (RUG, Netherlands)
- 10:10 - 10:35 AM      **Coffee break. Continental Ballroom Lobby**

10:35 - 11:20 AM	<b>Session 8A. Continental Ballroom A-B. Chair: Eric Vigoda</b>
10:35 - 10:55 AM	<i>Hit-and-run From a Corner</i> LÁSZLÓ LOVÁSZ (Microsoft), SANTOSH VEMPALA (MIT)
11:00 - 11:20 AM	<i>A Simple Polynomial-time Rescaling Algorithm for Solving Linear Programs</i> JOHN DUNAGAN (Microsoft), SANTOSH VEMPALA (MIT)
10:35 - 11:20 AM	<b>Session 8B. Continental Ballroom C. Chair: Tal Malkin</b>
10:35 - 10:55 AM	<i>Collective Asynchronous Reading with Polylogarithmic Worst-Case Overhead</i> BOGDAN S. CHLEBUS (U. Colo., Denver), DARIUSZ R. KOWALSKI (Max Planck), ALEXANDER A. SHVARTSMAN (U. Conn.)
11:00 - 11:20 AM	<i>Unconditional Lower Bounds on the Time-Approximation Tradeoffs for the Distributed Minimum Spanning Tree Problem</i> MICHAEL ELKIN (Yale)
11:30 - 12:30 PM	<b>Session 9 - Invited Talk. Continental Ballroom A-B. Chair: László Babai</b>
	<i>Network Games</i> ÉVA TARDOS (Cornell)
12:30 - 2:00 PM	<b>Lunch. International Ballroom South, 2nd floor</b>
2:00 - 3:10 PM	<b>Session 10A. Continental Ballroom A-B. Chair: Moses Charikar</b>
2:00 - 2:20 PM	<i>Typical Properties of Winners and Losers in Discrete Optimization</i> RENE BEIER (Max Planck), BERTHOLD VÖCKING (Dortmund)
2:25 - 2:45 PM	<i>Primal-Dual Algorithms for Deterministic Inventory Problems</i> RETSEF LEVI (Cornell), ROBIN ROUNDY (Cornell), DAVID B. SHMOYS (Cornell)
2:50 - 3:10 PM	<i>Multi-processor Scheduling to Minimize Flow Time with <math>\epsilon</math> Resource Augmentation</i> CHANDRA CHEKURI (Bell Labs), ASHISH GOEL (Stanford), SANJEEV KHANNA (UPenn), AMIT KUMAR (IIT Delhi)
2:00 - 3:10 PM	<b>Session 10B. Continental Ballroom C. Chair: Irit Dinur</b>
2:00 - 2:20 PM	<i>Algorithms for Dynamic Geometric Problems Over Data Streams</i> PIOTR INDYK (MIT)
2:25 - 2:45 PM	<i>Sublinear Algorithms for Testing Monotone and Unimodal Distributions</i> TUĞKAN BATU (U. Texas, Austin), RAVI KUMAR (IBM Almaden), RONITT RUBINFELD (MIT)
2:50 - 3:10 PM	<i>The Difficulty of Testing for Isomorphism Against a Graph That is Given in Advance</i> ELDAR FISCHER (Technion)
3:10 - 3:30 PM	<b>Coffee break. Continental Ballroom Lobby</b>
3:30 - 4:40 PM	<b>Session 11A. Continental Ballroom A-B. Chair: Sandy Irani</b>
3:30 - 3:50 PM	<i>An Approximate König's Theorem for Edge Coloring Weighted Bipartite Graphs</i> JOSÉ R. CORREA (MIT), MICHEL X. GOEMANS (MIT)
3:55 - 4:15 PM	<i>Finding Paths and Cycles of Superpolylogarithmic Length</i> HAROLD N. GABOW (U. Colo., Boulder)
4:20 - 4:40 PM	<i>Boosted Sampling: Approximation Algorithms for Stochastic Optimization</i> ANUPAM GUPTA (CMU), MARTIN PÁL (Cornell), R. RAVI (CMU), AMITABH SINHA (CMU)

- 3:30 - 4:40 PM      **Session 11B. Continental Ballroom C. Chair: Chris Umans**  
 3:30 - 3:50 PM      *Derandomizing Homomorphism Testing in General Groups*  
 AMIR SHPILKA (Weizmann), AVI WIGDERSON (IAS)
- 3:55 - 4:15 PM      *Better Extractors for Better Codes?*  
 VENKATESAN GURUSWAMI (U. Wash.)
- 4:20 - 4:40 PM      *A New Family of Cayley Expanders (?)*  
 EYAL ROZENMAN (Hebrew U.), ANER SHALEV (Hebrew U.), AVI WIGDERSON (IAS)
- 4:40 - 4:55 PM      **Coffee break. Continental Ballroom Lobby**  
 4:55 - 5:25 PM      **Session 12 - Best Student Paper. Continental Ballroom A-B. Chair:**  
**Alexander Russell**  
*Spectral Partitioning, Eigenvalue Bounds, and Circle Packings for Graphs of Bounded Genus*  
 JONATHAN A. KELNER (MIT)
- 5:35 - 6:05 PM      **Session 13 - Best Student Paper. Continental Ballroom A-B. Chair:**  
**Alexander Russell**  
*Lower Bounds for Local Search by Quantum Arguments*  
 SCOTT AARONSON (Berkeley)

## Tuesday, June 15, 2004

- 7:45 - 8:20 AM      **Continental breakfast. Continental Ballroom Lobby**
- 8:00 AM - 3:15 PM   **Registration desk open**
- 8:20 - 9:55 AM      **Session 14A. Continental Ballroom A-B. Chair: Satyanarayana V. Lokam**  
 8:20 - 8:40 AM      *Counting Complexity Classes for Numeric Computations II: Algebraic and Semialgebraic Sets*  
 PETER BÜRGISSER (Paderborn), FELIPE CUCKER (City U., Hong Kong)
- 8:45 - 9:05 AM      *A Conjecture About Polynomial Time Computable Lattice-Lattice Functions*  
 MIKLÓS AJTAI (IBM Almaden)
- 9:10 - 9:30 AM      *Quantum and Classical Query Complexities of Local Search Are Polynomially Related*  
 MIKLÓS SANTHA (Orsay), MARIO SZEGEDY (Rutgers)
- 9:35 - 9:55 AM      *The Quantum Adiabatic Optimization Algorithm and Local Minima*  
 BEN REICHARDT (Berkeley)
- 8:20 - 9:55 AM      **Session 14B. Continental Ballroom C. Chair: Éva Tardos**  
 8:20 - 8:40 AM      *Auction Algorithms for Market Equilibrium*  
 RAHUL GARG (IBM, New Delhi), SANJIV KAPOOR (IIT, Chicago)
- 8:45 - 9:05 AM      *The Spending Constraint Model for Market Equilibrium: Algorithmic, Existence and Uniqueness Results*  
 NIKHIL R. DEVANUR (Georgia Tech), VIJAY V. VAZIRANI (Georgia Tech)
- 9:10 - 9:30 AM      *(Almost) Tight Bounds and Existence Theorems for Confluent Flows*  
 JIANGZHUO CHEN (Northeastern), ROBERT D. KLEINBERG (MIT), LÁSZLÓ LOVÁSZ (Microsoft), RAJMOHAN RAJARAMAN (Northeastern), RAVI SUNDARAM (Northeastern), ADRIAN VETTA (McGill)
- 9:35 - 9:55 AM      *Approximate Max-integral-flow/Min-multicut Theorems*  
 KENJI OBATA (Berkeley)
- 9:55 - 10:20 AM     **Coffee break. Continental Ballroom Lobby**

- 10:20 - 11:05 AM **Session 15A. Continental Ballroom A-B. Chair: Vladlen Koltun**  
 10:20 - 10:40 AM *Lower Bounds for Dynamic Connectivity*  
 MIHAI PĂTRAȘCU (MIT), ERIK D. DEMAINE (MIT)
- 10:45 - 11:05 AM *Lower Bounds for Linear Degeneracy Testing*  
 NIR AILON (Princeton), BERNARD CHAZELLE (Princeton)
- 10:20 - 11:05 AM **Session 15B. Continental Ballroom C. Chair: Alex Russell**  
 10:20 - 10:40 AM *A Decentralized Algorithm for Spectral Analysis*  
 DAVID KEMPE (U. Wash.), FRANK MCSHERRY (Microsoft)
- 10:45 - 11:05 AM *Using Mixture Models for Collaborative Filtering*  
 JON KLEINBERG (Cornell), MARK SANDLER (Cornell)
- 11:15 - 12:15 PM **Session 16 - Invited Talk. Continental Ballroom A-B. Chair: László Babai**  
*Depth Through Breadth, or Why Should We Attend Talks In Other Areas?*  
 AVI WIGDERSON (IAS)
- 12:15 - 1:45 PM **Lunch. International Ballroom South, 2nd floor**
- 1:45 - 3:20 PM **Session 17A. Continental Ballroom A-B. Chair: Eric Vigoda**  
 1:45 - 2:05 PM *Sharp Thresholds for Monotone Properties in Random Geometric Graphs*  
 ASHISH GOEL (Stanford), SANATAN RAI (Stanford), BHASKAR KRISHNAMACHARI (USC)
- 2:10 - 2:30 PM *The Two Possible Values of the Chromatic Number of a Random Graph*  
 DIMITRIS ACHLIOPTAS (Microsoft), ASSAF NAOR (Microsoft)
- 2:35 - 2:55 PM *On Sums of Independent Random Variables with Unbounded Variance, and Estimating the Average Degree in a Graph*  
 URIEL FEIGE (Weizmann)
- 1:45 - 3:20 PM **Session 17B. Continental Ballroom C. Chair: Éva Tardos**  
 1:45 - 2:05 PM *The Complexity of Pure Nash Equilibria*  
 ALEX FABRIKANT (Berkeley), CHRISTOS PAPADIMITRIOU (Berkeley), KUNAL TALWAR (Berkeley)
- 2:10 - 2:30 PM *Computing Nash Equilibria for Scheduling on Restricted Parallel Links*  
 MARTIN GAIRING (Paderborn), THOMAS LÜCKING (Paderborn), MARIOS MAVRONICOLAS (U. Cyprus), BURKHARD MONIEN (Paderborn)
- 2:35 - 2:55 PM *Rational Secret Sharing and Multiparty Computation*  
 JOSEPH HALPERN (Cornell), VANESSA TEAGUE (Stanford)
- 3:00 - 3:15 PM **Coffee break. Continental Ballroom Lobby**
- 3:15 - 3:55 PM **Session 18 - Best Paper. Continental Ballroom A-B. Chair: Boaz Barak**  
*Multi-Linear Formulas for Permanent and Determinant are of Super-Polynomial Size*  
 RAN RAZ (Weizmann)