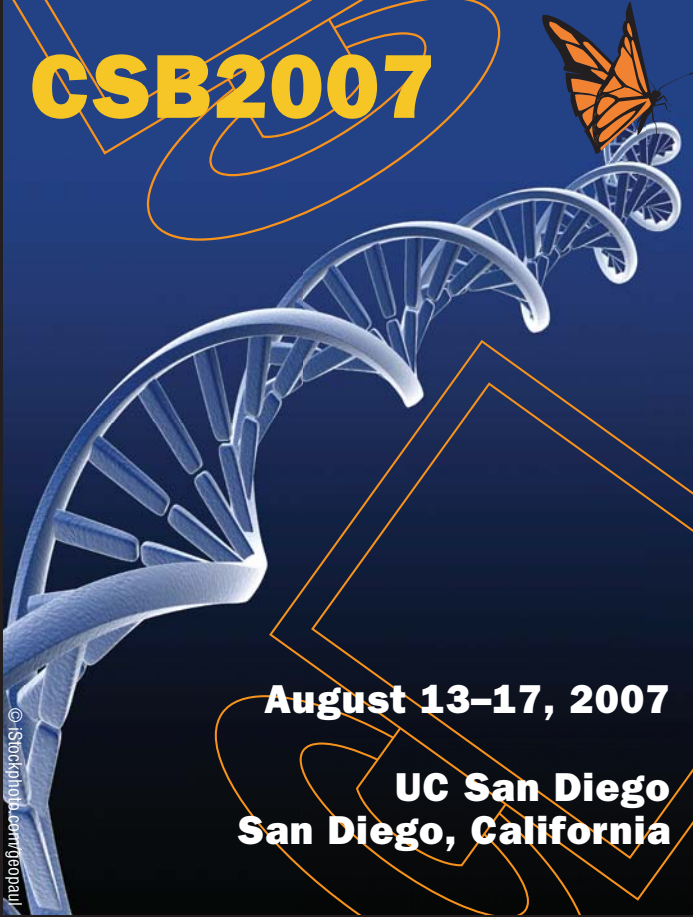




**Life Sciences Society**

**6TH ANNUAL  
INTERNATIONAL CONFERENCE  
ON COMPUTATIONAL SYSTEMS  
BIOINFORMATICS**

**CSB2007**



**August 13–17, 2007**

**UC San Diego  
San Diego, California**

**CONFERENCE PROGRAM**

**[www.CSB2007.org](http://www.CSB2007.org)**

# CONFERENCE OVERVIEW

**Monday, August 13, 2007**

On-site registration  
Tutorial sessions  
Opening ceremony, wine and cheese party  
(open to all attendees)

**Tuesday, August 14, 2007**

On-site registration  
Opening remarks  
Keynote speaker – Terry Hwa  
Podium and poster presentations  
Special event - Regional Computational  
Systems Bioinformatics Opportunities

**Wednesday, August 15, 2007**

On-site registration  
Keynote speaker – Mike Levine  
Podium and poster presentations  
LSS/CSB Banquet

**Thursday, August 16, 2007**

On-site registration  
Keynote speaker – Chris Somerville  
Podium and poster presentations  
Panel discussion  
Award ceremony and closing remarks

**Friday, August 17, 2007**

On-site registration  
LSS Workshops

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# TUTORIALS and WORKSHOPS

**MONDAY, August 13, 2007**

**7:00–8:30 AM** Breakfast and On-site Registration

**10:15–10:30 AM** Snacks

**8:30 AM–12:00 PM** MORNING SESSIONS

**AM1** Learning Combinatorial Regulation of Transcription Factors  
*Li Shen*

**AM2** Molecular Visualization  
*Conrad Huang and Scooter Morris*

**AM3** Introduction to Molecular Biology for Computer Scientists  
*Suzanne Gollery and Martin Gollery*

**12:00–1:30 PM** Lunch

**3:15–3:30 PM** Snacks

**1:30–5:00 PM** AFTERNOON SESSIONS

**PM1** Probabilistic Modeling  
*Alexander Churbanov*

**PM2** Applications of Quantum Computing in Bioinformatics  
*Hongwei Huo and Vojislav Stojkovic*

**PM3** Computational Problems in Maize Genomics  
*Scott Emrich*

**PM4** Stem Cell Engineering  
*Sasha Bakhru and Stefan Zappe*

**5:30 PM** Opening Ceremony, Wine and Cheese Party - Open to all attendees

**FRIDAY, August 17, 2007**

**7:00–8:30 AM** Breakfast and On-site Registration

**10:15–10:30 AM** Snacks

**12:00–1:30 PM** Lunch

**3:15–3:30 PM** Snacks

**8:30 AM–5:00 PM** WORKSHOP SESSIONS

**WS1** Alternative Splicing

**WS2** Metagenomics

**WS3** Systems Biology for Microbial Genomes  
Understanding microbes through multifaceted functional genomics

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# THE PROGRAM

**TUESDAY, August 14, 2007**

<b>7:00 AM</b>	<b>Breakfast and On-site Registration</b>
<b>8:15 AM</b>	<b>Opening Remarks</b>
<b>8:30 AM</b>	<b>Session I: Pathways, Networks and Systems Biology I</b>
<b>8:30 AM</b>	<b>Bayesian Integration of Biological Prior Knowledge into the Reconstruction of Gene Networks with Bayesian Network</b> <i>Dirk Husmeier, Adriano Werhli</i>
<b>8:55 AM</b>	<b>Using Indirect Protein-Protein Interactions for Protein Complex Prediction</b> <i>Hon Nian Chua, Kang Ning, Wing-Kin Sung, Hon Wai Leong, Limsoon Wong</i>
<b>9:20 AM</b>	<b>Finding Linear Motif Pair from Protein Interaction Networks: A Probabilistic Approach</b> <i>Henry C.M. Leung, M.H. Siu, S.M. Yiu, Francis Y.L. Chin, Ken W.K. Sung</i>
<b>Additional paper presented as poster</b>	<b>A Markov Model-based Analysis of Stochastic Biochemical Systems</b> <i>Preetam Ghosh, Samik Ghosh, Kalyan Basu, Sajal K. Das</i>
<b>9:45 AM</b>	<b>Break</b>
<b>10:15 AM</b>	<b>Session II: Genomics I</b>
<b>10:15 AM</b>	<b>INVITED TALK: AJ Marian Walhout</b> <b>Gene-centered Protein-DNA Interactome Mapping</b>
<b>10:45 AM</b>	<b>Clustering of Main Orthologs for Multiple Genomes</b> <i>Zheng Fu, Tao Jiang</i>
<b>11:10 AM</b>	<b>Deconvoluting the Bac-gene Relationships Using a Physical Map</b> <i>Yonghui Wu, Stefano Lonardi, Lan Liu, Timothy J. Close</i>
<b>11:35 AM</b>	<b>IEM: An Algorithm for Iterative Enhancement of Motifs Using Comparative Genomics Data</b> <i>Erliang Zeng, Kalai Mathee, Giri Narasimhan</i>
<b>Additional papers presented as posters</b>	<b>Prediction of Transcription Start Sites Based on Feature Selection Using AMOSA</b> <i>Xi Wang, Sanghamitra Bandyopadhyay, Zhenyu Xuan, Xiaoyue Zhao, Michael Q. Zhang, Xuegong Zhang</i>
	<b>A Grammar-based Methodology for Structured Motif Finding in ncRNA Database Search</b> <i>Daniel Quest, William Tapprich, Hesham Ali</i>
<b>12:00 PM</b>	<b>Lunch</b>
<b>1:30 PM</b>	<b>Poster Session A</b>
<b>2:15 PM</b>	<b>Session III</b>
<b>2:15 PM</b>	<b>KEYNOTE ADDRESS: Terry Hwa</b> <b>Quantitative Aspects of Gene Regulation in Bacteria: Amplification, Threshold, and Combinatorial Control</b>
<b>3:15 PM</b>	<b>Break</b>
<b>3:45 PM</b>	<b>Session IV: Genomics II</b>
<b>3:45 PM</b>	<b>INVITED TALK: Christina Leslie</b> <b>Learning Predictive Models of Gene Regulation</b>
<b>4:15 PM</b>	<b>MANGO: A New Approach to Multiple Sequence Alignment</b> <i>Zefeng Zhang, Hao Lin, Ming Li</i>
<b>4:40 PM</b>	<b>Learning Position Weight Matrices from Sequence and Expression Data</b> <i>Xin Chen, Lingqiong Guo, Zhaocheng Fan, Tao Jiang</i>
<b>5:05 PM</b>	<b>Session V: Biocomputing</b>
<b>5:05 PM</b>	<b>Exact and Heuristic Algorithms for Weighted Cluster Editing</b> <i>Sven Rahmann, Tobias Wittkop, Jan Baumbach, Marcel Martin, Anke Truss, Sebastian Boecker</i>
<b>5:30 PM</b>	<b>Methods for Effective Virtual Screening and Scaffold-hopping in Chemical Compounds</b> <i>Nikil Wale, George Karypis, Ian A. Watson</i>
<b>Additional paper presented as poster</b>	<b>Supercomputing with Toys: Harnessing the Power of NVIDIA 8800GTX and Play Station 3 for Bioinformatics Problems</b> <i>Justin Wilson, Manhong Dai, Elvis Jakupovic, Stanley Watson, Fan Meng</i>
<b>6:00 PM</b>	<b>Dinner</b>
<b>7:00 PM</b>	<b>Regional Computational Systems Bioinformatics Opportunities</b>

# WEDNESDAY, August 15, 2007

<b>7:00 AM</b>	<b>Breakfast and On-site Registration</b>
<b>8:30 AM</b>	<b>Session VI: Structural Bioinformatics I</b>
8:30 AM	<b>Extraction, Visualization and Quantification of Protein Pockets</b> <i>Xiaoyu Zhang, Chandrajit Bajaj</i>
8:55 AM	<b>Uncovering the Structural Basis of Protein Interactions with Efficient Clustering of 3-D Interaction Interfaces</b> <i>Zeyar Aung, Soon-Heng Tan, See-Kiong Ng, Kian-Lee Tan</i>
9:20 AM	<b>Consensus Contact Prediction by Linear Programming</b> <i>Xin Gao, Dongbo Bu, Shuai Cheng Li, Ming Li, Jinbo Xu</i>
Additional papers presented as posters	<b>Enhanced Partial Order Curve Comparison over Multiple Protein Folding</b> <i>Hong Sun, Yusu Wang, Hakan Ferhatosmanoglu</i>
	<b>iRMSDPred: Predicting Local RMSD between Structural Fragments Using Sequence Information</b> <i>Huzefa Rangwala, George Karypis</i>
	<b>Effective Labeling of Molecular Surface Points for Cavity Detection and Location of Putative Binding Sites</b> <i>Mary Ellen Bock, Claudio Garutti, Concettina Guerra</i>
	<b>Composite Motifs Integrating Multiple Protein Structures Increase Sensitivity for Function Prediction</b> <i>Brian Y. Chen, Drew H. Bryant, Amanda E. Cruess, Joseph H. Bylund, Viacheslav Y. Fofanov, David M. Kristensen, Marek Kimmel, Olivier Lichtarge, Lydia E. Kavraki</i>
<b>9:45 AM</b>	<b>Break</b>
<b>10:15 AM</b>	<b>Session VII: Transcriptomics and Phylogeny</b>
10:15 AM	<b>Improving the Design of GeneChip Arrays by Combining Placement and Embedding</b> <i>Sergio Anibal de Carvalho Junior, Sven Rahmann</i>
10:40 AM	<b>Modeling Species-Genes Data for Efficient Phylogenetic Inference</b> <i>Wenyuan Li, Ying Liu</i>
11:05 AM	<b>Reconciliation with Non-Binary Species Trees</b> <i>Benjamin Vernot, Maureen Stolzer, Aiton Goldman, Dannie Durand</i>
11:30 AM	<b>INVITED TALK: Kimmen Sjölander</b> <b>The Phylofacts Phylogenomic Encyclopedia: Structural Phylogenomic Analysis Across the Tree of Life</b>
<b>12:15 PM</b>	<b>Lunch</b>
<b>1:45 PM</b>	<b>Poster Session B</b>
<b>2:30 PM</b>	<b>Session VIII: Structural Bioinformatics II</b>
2:30 PM	<b>KEYNOTE ADDRESS: Mike Levine</b> <b>Whole-Genome Analysis of Dorsal Gradient Thresholds in the Drosophila Embryo</b>
3:30 PM	<b>Improvement in Protein Sequence-Structure Alignment Using Insertion/Deletion Frequency Arrays</b> <i>Kyle Ellrott, Jun-tao Guo, Victor Olman, Ying Xu</i>
<b>3:55 PM</b>	<b>Break</b>
<b>4:25 PM</b>	<b>Session IX: Ontology, Data Bases and Text Mining</b>
4:25 PM	<b>An Active Visual Search Interface for Medline</b> <i>Weijian Xuan, Manhong Dai, Barbara Mirel, Justin Wilson, Brian Athey, Stanley J. Watson, Fan Meng</i>
4:50 PM	<b>Rule-based Human Gene Normalization in Biomedical Text with Confidence Estimation</b> <i>William Lau, Kevin Becker, Calvin Johnson</i>
5:15 PM	<b>CBioC: Beyond a Prototype for Collaborative Annotation of Molecular Interactions from the Literature</b> <i>Chitta Baral, Graciela Gonzalez, Anthony Gitter, Craig Teegarden, Amanda Zeigler, G. Joshi-Topé</i>
<b>5:30 PM</b>	<b>Session X: Pathways, Networks and Systems Biology II</b>
5:30 PM	<b>An Information Theoretic Method for Reconstructing Local Regulatory Network Modules from Polymorphic Samples</b> <i>Manjunatha Jagalur, David Kulp</i>
5:55 PM	<b>Using Directed Information to Build Biologically Relevant Influence Networks</b> <i>Arvind Rao, Alfred O. Hero III, David J. States, James Douglas Engel</i>
<b>7:00 PM</b>	<b>LSS/CSB Banquet</b>

## THURSDAY, August 16, 2007

<b>7:00 AM</b>	<b>Breakfast and On-site Registration</b>
<b>8:30 AM</b>	<b>Session XI: Proteomics</b>
8:30 AM	<b>Algorithm for Peptide Sequencing by Tandem Mass Spectrometry Based on Better Preprocess and Anti-symmetric Computational Model</b> <i>Kang Ning, Hon Wai Leong</i>
8:55 AM	<b>Algorithms for Selecting Breakpoint Locations to Optimize Diversity in Protein Engineering by Site-directed Protein Recombination</b> <i>Wei Zheng, Xiaoduan Ye, Alan M. Friedman, Chris Bailey-Kellogg</i>
Additional paper presented as poster	<b>An Algorithmic Approach to Automated High-Throughput Identification of Disulfide Connectivity in Proteins Using Tandem Mass Spectrometry</b> <i>Timothy Lee, Rahul Singh, Ten-Yang Yen, Bruce Macher</i>
9:20 AM	<b>INVITED TALK: Kavitha Venkatesan</b> <i>Mapping and Analysis of the Human Interactome Network</i>
<b>9:50 AM</b>	<b>Break</b>
<b>10:20 AM</b>	<b>Session XII: Biomedical Applications</b>
10:20 AM	<b>Cancer Molecular Pattern Discovery by Subspace Consensus Kernel Classification</b> <i>Xiaoxu Han</i>
10:45 AM	<b>Efficient Algorithms for Genome-wide TagSNP Selection across Populations via the Linkage Disequilibrium Criterion</b> <i>Lan Liu, Yonghui Wu, Stefano Lonardi, Tao Jiang</i>
Additional paper presented as poster	<b>Transcriptional Profiling of Definitive Endoderm Derived from Human Embryonic Stem Cells</b> <i>Huiqing Liu, Stephen Dalton, Ying Xu</i>
11:10 AM	<b>INVITED TALK: Adam Godzik</b> <b>Bioinformatics Challenges of High Throughput Biology</b>
<b>11:40 AM</b>	<b>Lunch</b>
<b>1:10 PM</b>	<b>Session XIII</b>
1:10 PM	<b>KEYNOTE ADDRESS: Chris Somerville</b> <b>Scientific Issues Associated with the Development of Biofuels</b>
2:10 PM	<b>INVITED TALK: Pavel Pevzner</b> <b>De Novo Shotgun Protein Sequencing via Spectral Networks Analysis</b>
<b>2:40 PM</b>	<b>Break</b>
<b>3:10 PM</b>	<b>Session XIV: Bioinformatics Education</b>
3:10 PM	<b>INVITED TALKS AND PANEL DISCUSSION</b> <b>John Dehlin</b> <i>The OpenCourseWare Movement and Cross-institutional Development of Open Course Materials</i> <b>Philip Bourne</b>
<b>4:40 PM</b>	<b>Session XV: Pathways, Networks and Systems Biology III</b>
4:40 PM	<b>Discovering Protein Complexes in Dense Reliable Neighborhoods of Protein Interaction Networks</b> <i>Xiao-Li Li, Chuan-Sheng Foo, See-Kiong Ng</i>
5:05 PM	<b>Mining Molecular Contexts of Cancer via In Silico Conditioning</b> <i>Seungchan Kim, Ina Sen, Michael Bittner</i>
<b>5:30 PM</b>	<b>Award Ceremony and Closing Remarks</b>

The printed program is our intended schedule as of August 6, 2007. The CSB2007 Conference reserves the right to make scheduling changes.