

Friday, September 7th

Reading Room

Registration	4:00 - 8:00 pm
Reception	6:00 - 8:00 pm

Saturday, September 8th

Hall of Flags

Continental breakfast	8:00 - 8:50 am
Opening Remarks	8:50 - 9:00 am
Keynote Pavel Pevzner	9:00 - 10:00 am
Short Break	10:00 - 10:10 am
Session 1-A Protein Structure / Classification	10:10 - 11:50 am
Lunch	11:50 - 1:30 pm
Session 2-A Evolution	1:30 - 2:45 pm
Coffee Break	2:45 - 3:15 pm
Session 3-A Protein Folding / Alignment	3:15 - 4:55 pm
Reception	5:00 - 7:00 pm

Bodek Lounge

Short Break	10:00 - 10:10 am
Session 1-B SNPs and Haplotypes	10:10 - 11:50 am
Lunch	11:50 - 1:30 pm
Session 2-B Motifs	1:30 - 2:45 pm
Coffee Break	2:45 - 3:15 pm
Session 3-B Sequence Analysis	3:15 - 4:55 pm

Sunday, September 9th

Hall of Flags

Continental breakfast	8:00 - 9:00 am
Announcements	9:00 - 9:10 am
Session 4-A Protein Folding	9:10 - 10:00 am
Short Break	10:00 - 10:10 am
Session 5-A RNA World	10:10 - 11:25 am
Lunch	11:25 - 1:00 pm
Keynote Maja Bucan	1:00 - 2:00 pm
Coffee Break	2:00 - 2:10 pm
Session 6-A Mapping / Tiling	2:10 - 3:25 pm
Business meeting	3:25 - 5:00 pm

Bodek Lounge

Session 4-B Similarity Search	9:10 - 10:00 am
Short Break	10:00 - 10:10 am
Session 5-B Sequence Assembly / Alignment	10:10 - 11:25 am
Lunch	11:25 - 1:00 pm
Coffee Break	2:00 - 2:10 pm
Session 6-B Pathways	2:10 - 3:25 pm

Saturday, September 8th

Keynote 9:00 - 10:00 am Hall of Flags

Pavel Pevzner
Shotgun PROTEIN Sequencing.

Session 1-A 10:10 - 11:50 am Hall of Flags Protein Structure / Classification Chair: Gabriel Valiente

**Predicting Protein Folding Kinetics via Temporal Logic Model Checking:
Extended Abstract.** 10:10 - 10:35 am
Christopher Langmead (Carnegie Mellon Univ, USA)
Sumit Jha (Carnegie Mellon Univ, USA)

Efficient Algorithms to Explore Conformation Spaces of Flexible Protein Loops. 10:35 - 11:00 am
Ankur Dhanik (Stanford Univ, USA)
Peggy Yao (Stanford Univ, USA)
Nathan Marz (Stanford Univ, USA)
Ryan Propper (Stanford Univ, USA)
Charles Kou (Stanford Univ, USA)
Guanfeng Liu (Stanford Univ, USA)
Henry, van den Bedem (JCSG, SLAC, USA)
Jean-Claude Latombe (Stanford Univ, USA)

Fault Tolerance for Large Scale Protein 3D Reconstruction from Contact Maps. 11:00 - 11:25 am
Marco Vassura (Dept of Comp Sci, Univ of Bologna, Italy)
Luciano Margara (Dept of Comp Sci, Univ of Bologna, Italy)
Pietro Di Lena (Dept of Comp Sci, Univ of Bologna, Italy)
Medri Filippo (Dept of Comp Sci, Univ of Bologna, Italy)
Piero Fariselli (Dept of Biology, Univ of Bologna, Italy, Italy)
Rita Casadio (Dept of Biology UNIBO, Italy)

Bringing folding pathways into strand pairing prediction. 11:25 - 11:50 am
Jieun Jeong (Penn State Univ, USA)
Piotr Berman (Penn State Univ, USA)
Teresa Przytycka (National Center for Biotechnology Information, USA)

Session 1-B 10:10 - 11:50 am Bodek Lounge SNPs and Haplotypes Chair: Sridhar Hannenhalli

**A Fast and Accurate Heuristic for the Single Individual SNP Haplotyping Problem
with Many Gaps, High Reading Error Rate and Low Coverage.** 10:10 - 10:35 am
Loredana Genovese (Institute for Informatics and Telematics of CNR, Italy)
Filippo Geraci (Institute for Informatics and Telematics of CNR, Italy)
Marco Pellegrini (Institute for Informatics and Telematics of CNR, Italy)

**Two Birds, One Stone: Selecting Functionally Informative Tag SNPs for Disease
Association Studies.** 10:35 - 11:00 am
Phil Hyoun Lee (Queen's Univ, Canada)
Hagit Shatkay (Comp Bio and Machine Learning Lab, School of Computing, Queen's Univ, Kingston, Ontario, Canada)

Genotype Error Detection using Hidden Markov Models of Haplotype Diversity. 11:00 - 11:25 am
Justin Kennedy (Univ of Connecticut, USA)
Bogdan Pasaniuc (Univ of Connecticut, USA)
Ion Mandoiu (Univ of Connecticut, USA)

Haplotype inference via genotype parsing. 11:25 - 11:50 am
Pasi Rastas (Univ of Helsinki, Dept of Comp Sci and Helsinki Institute for Info Tech HIIT, Finland)
Esko Ukkonen (Univ of Helsinki, Dept of Comp Sci and Helsinki Institute for Info Tech HIIT, Finland)

Saturday, September 8th

Session 2-A Evolution Chair: Bernard Moret

1:30 - 2:45 pm
Hall of Flags

Seeded Tree Alignment and Planar Tanglegram Layout. 1:30 - 1:55 pm

Antoni Lozano (Technical Univ of Catalonia, Spain)
Ron Pinter (Technion - Israel Institute of Technology, Israel)
Oleg Rokhlenko (Technion - Israel Institute of Technology, Israel)
Gabriel Valiente (Technical Univ of Catalonia, Spain)
Michal Ziv-Ukelson (Technion -- Israel Institute of Technology, Israel)

Inferring Models of Rearrangements, Recombinations and Horizontal Transfers by the Minimum Evolution Criterion. 1:55 - 2:20 pm

Hadas Birin (Tel Aviv Univ, Israel)
Zohar Gal-or (Tel Aviv Univ, Israel)
Isaac Elias (KTH, Sweden)
Tamir Tuller (Tel Aviv Univ, Israel)

An $\Omega(n^2/\log n)$ Speed-Up of TBR Heuristics for the Gene-Duplication Problem. 2:20 - 2:45 pm

Mukul Bansal (Dept of Comp Sci, Iowa State Univ, Ames, IA, USA)
Oliver Eulenstein (Dept of Comp Sci, Iowa State Univ, Ames, IA, USA)

Session 2-B Motifs Chair: Stefano Lonardi

1:30 - 2:45 pm
Bodek Lounge

Incremental Discovery of the Irredundant Motif Bases for all Suffixes of a String in $O(|\Sigma|n^2 \log n)$ Time. 1:30 - 1:55 pm

Alberto Apostolico (Univ of Padova and Georgia Tech, Italy)
Claudia Tagliacollo (Univ of Padova & Georgia Tech, Italy)

A Graph Clustering Approach to Weak Motif Recognition. 1:55 - 2:20 pm

Christina Boucher (Univ of Waterloo, Canada)
Daniel Brown (Cheriton School of Comp Sci, Univ of Waterloo, Canada)
Paul Church (Univ of Waterloo, Canada)

Informative Motifs in Protein Family Alignments. 2:20 - 2:45 pm

Hatice Gulcin Ozer (Ohio State Univ, USA)
William C Ray (The Ohio State Univ, USA)

Saturday, September 8th

Session 3-A **3:15 - 4:55 pm** **Protein Folding / Alignment** **Hall of Flags** **Chair: Mona Singh**

Topology Independent Protein Structural Alignment. 3:15 - 3:40 pm

Joe Dundas (Dept of Bioengineering, Univ of Illinois at Chicago, USA)
Andrew Binkowski (Dept of Bioengineering, Univ of Illinois at Chicago, USA)
Bhaskar DasGupta (Dept of Comp Sci, Univ of Illinois at Chicago, USA)
Jie Liang (Dept of Bioengineering, Univ of Illinois at Chicago, USA)

Generalized Pattern Search and Mesh Adaptive Direct Search Algorithms for Protein Structure Prediction. 3:40 - 4:05 pm

Vincenzo Cutello (Dept of Mathematics and Comp Sci, Univ of Catania, Italy)
Giuseppe Nicosia (Univ of Catania, Italy)
Giovanni Stracquadanio (Univ of Catania, Italy)

Alignment-Free Local Structural Search by Writhe Decomposition. 4:05 - 4:30 pm

Degui Zhi (Univ of California, Berkeley, USA)
Maxim Shatsky (Univ of California, Berkeley, USA)
Steven Brenner (Univ of California, Berkeley, USA)

Defining and Computing Optimum RMSD for Gapped Multiple Structure Alignment. 4:30 - 4:55 pm

Xueyi Wang (UNC Chapel Hill, USA)
Jack Snoeyink (Dept of Comp Sci, UNC Chapel Hill, USA)

Session 3-B **3:15 - 4:55 pm** **Sequence Analysis** **Bodek Lounge** **Chair: Jens Stoye**

Using protein domains to improve the accuracy of ab initio gene finding. 3:15 - 3:40 pm

Mihaela Pertea (UMD, USA)
Steven Salzberg (UMD, USA)

Genomic signatures in de Bruijn chains. 3:40 - 4:05 pm

Lenwood Heath (Virginia Tech, USA)
Amrita Pati (Virginia Tech, USA)

Fast kernel methods for SVM sequence classifiers. 4:05 - 4:30 pm

Pavel Kuksa (Rutgers Univ, Piscataway, NJ 08854, USA)
Vladimir Pavlovic (Rutgers Univ, Piscataway, NJ 08854, USA)

On-line Viterbi Algorithm for Analysis of Long Biological Sequences. 4:30 - 4:55 pm

Rastislav Sramek (Comenius Univ Bratislava, Slovakia)
Brona Brejova (Cornell Univ, USA)
Tomas Vinar (Cornell Univ, USA)

Sunday, September 9th

Session 4-A Protein Folding Chair: Gabriel Valiente	9:10 - 10:00 am Hall of Flags
--	--

Locality Kernels for Protein Classification. 9:10 - 9:35 am

Evgeni Tsivtsivadze (Turku Centre for Comp Sci, Finland)
Jorma Boberg (Dept of IT, Univ of Turku, Finland)
Tapio Salakoski (Dept of IT, Univ of Turku, Finland)

When Less is More: Improving Classification of Protein Families with a Minimal Set of Global Features. 9:35 - 10:00 am

Roy Varshavsky (Hebrew Univ, Jerusalem, Israel)
Menachem Fromer (Hebrew Univ, Jerusalem, Israel)
Amit Man (Hebrew Univ, Jerusalem, Israel)
Michal Linial (The Hebrew Univ of Jerusalem, Israel)

Session 4-B Similarity Search Chair: Jens Stoye	9:10 - 10:00 am Bodek Lounge
--	---

Homology Search with Fragmented Nucleic Acid Sequence Patterns. 9:10 - 9:35 am

Axel Mosig (PICB Shanghai, China)
Jiunn-Linag (Julian) Chen (School of Life Sci and Dept of Chem, Arizona State Univ, Tempe, AZ, USA)
Peter F Stadler (Haertelstr 16-18, 04107 Leipzig, Germany)

Fast computation of good multiple spaced seeds. 9:35 - 10:00 am

Lucian Ilie (Univ of Western Ontario, Canada)
Silvana Ilie (Ontario Research Centre for Computer Algebra, Canada)

Sunday, September 9th

Session 5-A RNA World Chair: Li-San Wang

10:10 - 11:25 am
Hall of Flags

Fast Algorithms for Selecting Specific siRNA in Complete mRNA Data. 10:10 - 10:35 am

Jaime Davila (CSE Dept at Univ of Connecticut, USA)
Sudha Balla (Dept of Comp Sci, Univ of Connecticut, USA)
Sanguthevar Rajasekaran (Univ of Connecticut, USA)

RNA Folding Including Pseudoknots: A New Parameterized Algorithm and Improved Upper Bound. 10:35 - 11:00 am

Chunmei Liu (Howard Univ, USA)
Yinglei Song (Univ of Maryland, Eastern Shore, USA)
Louis Shapiro (Dept of Math, Howard Univ, USA)

HFold: RNA Pseudoknotted Secondary Structure Prediction Using Hierarchical Folding. 11:00 - 11:25 am

Hosna Jabbari (Univ of British Columbia, Canada)
Anne Condon (Univ of British Columbia, Canada)
Ana Pop (Univ of British Columbia, Canada)
Cristina Pop (Univ of British Columbia, Canada)
Yinglei Zhao (Univ of British Columbia, Canada)

Session 5-B Sequence Assembly / Alignment Chair: Sridhar Hannenhalli

10:10 - 11:25 am
Bodek Lounge

Algorithms for the extraction of synteny blocks from comparative maps. 10:10 - 10:35 am

Vicky Choi (Virginia Tech, USA)
Chunfang Zheng (Univ of Ottawa, Canada)
Qian Zhu (Univ of Ottawa, Canada)
David Sankoff (Univ of Ottawa, Canada)

Inverse sequence alignment from partial examples. 10:35 - 11:00 am

Eagu Kim (Univ of Arizona, USA)
John Kececiogu (Univ of Arizona, USA)

Computability and Equivalence of Models for Sequence Assembly. 11:00 - 11:25 am

Paul Medvedev (Univ of Toronto, Canada)
Konstantinos Georgiou (Univ of Toronto, Canada)
Eugene Myers (HHMI Janelia Farm Research Campus, USA)
Michael Brudno (Univ of Toronto, Canada)

Sunday, September 9th

Keynote **1:00 - 2:00 pm**
Hall of Flags

Maja Bucan
Novel approaches in psychiatric genomics.

Session 6-A **2:10 - 3:25 pm**
Hall of Flags
Mapping / Tiling
Chair: Li-San Wang

The Point Placement Problem on a Line – Improved Bounds for Pairwise Distance Queries. 2:10 - 2:35 pm

Francis Chin (The Univ of Hong Kong, Hong Kong)
Chi Ming Leung (Univ of Hong Kong, Hong Kong)
Wing-Kin Sung (National Univ of Singapore, Singapore)
SM Yiu (The Univ of Hong Kong, Hong Kong)

Efficient computational design of tiling arrays using a shortest path approach. 2:35 - 3:00 pm
Alexander Schliep (Max Planck Institute for Molecular Genetics, Germany)
Roland Krause (Max Planck Institute for Molecular Genetics, Germany)

Efficient and accurate construction of genetic linkage maps from noisy and missing genotyping data. 3:00 - 3:25 pm
Yonghui Wu (UC Riverside, USA)
Stefano Lonardi (UC Riverside, USA)
Prasanna Bhat (UC Riverside, USA)
Timothy Close (UC Riverside, USA)

Session 6-B **2:10 - 3:00 pm**
Bodek Lounge
Pathways
Chair: Mona Singh

A Novel Method for Signal Transduction Network Inference from Indirect Experimental Evidence. 2:10 - 2:35 pm
Reka Albert (Penn State Univ, USA)
Bhaskar DasGupta (Dept of Comp Sci, Univ of Illinois at Chicago, USA)
Riccardo Dondi (Dipartimento di Scienze dei Linguaggi, Università degli Studi di Bergamo, Italy)
Semen Kachalo (Dept of Bioengineering, Univ of Illinois at Chicago, USA)
Eduardo Sontag (Dept of Mathematics, Rutgers Univ, USA)
Alexander Zelikovsky (Dept of Comp Sci, Georgia State Univ, USA)
Kelly Westbrook (Dept of Comp Sci, Georgia State Univ, USA)

Composing Globally Consistent Pathway Parameter Estimates through Belief Propagation. 2:35 - 3:00 pm
Geoffrey Koh (NUS Graduate School for Integrative Sciences and Engineering, Singapore)
Lisa Tucker-Kellogg (Dept of Comp Sci, National Univ of Singapore, Singapore)
David Hsu (Dept of Comp Sci, National Univ of Singapore, Singapore)
P S Thiagarajan (National Univ of Singapore, Singapore)