

RECOMB 2006 Preliminary Program

Sunday, April 2, 2006

8:00am-4:00pm Registration open

8:30am-8:45am Welcome

SESSION 1

8:45am-9:10am *Integrated Protein Interaction Networks for 11 Microbes.*

Balaji Srinivasan, Antal Novak, Jason Flannick, Serafim Batzoglou and Harley McAdams.

9:10am-9:35am *Hypergraph Model of Multi-residue Interactions in Proteins: Sequentially-constrained Partitioning Algorithms for Optimization of Site-directed Protein Recombination.*

Xiaoduan Ye, Chris Bailey-Kellogg and Alan Friedman.

9:35am-10:00am *Biological Networks: Comparison, Conservation, and Evolutionary Trees.*

Benny Chor and Tamir Tuller.

10:00am-10:25am *Assessing Significance of Connectivity and Conservation in Protein Interaction Networks.*

Mehmet Koyuturk, Ananth Grama and Wojciech Szpankowski.

10:25am-10:50am Coffee

SESSION 2

10:50am-11:15am *Clustering Short Gene Expression Profiles.*

Ling Wang, Marco Ramoni and Paola Sebastiani.

11:15am-11:40pm *A Patient-Gene Model for Temporal Expression Profiles in Clinical Studies.*

Naftali Kaminski and Ziv Bar-Joseph.

11:40pm-12:35pm **Keynote:** Anne-Claude Gavin, EMBL Heidelberg - Germany

12:35pm-2:00pm Lunch

SESSION 3

2:00pm-2:55pm **Keynote:** David Sankoff, University of Ottawa - Canada

2:55pm-3:20pm *An Improved Statistic for Detecting Over-represented Gene Ontology Annotations in Gene Sets.*

Steffen Grossmann, Sebastian Bauer, Peter N. Robinson and Martin Vingron.

3:20pm-3:45pm *Protein Function Annotation Based on Ortholog Clusters Extracted from Incomplete Genomes Using Combinatorial Optimization.*

Akshaya Vashist, Casimir Kulikowski and Ilya Muchnik.

3:45pm-4:10pm Coffee

SESSION 4

4:10pm-4:35pm

Detecting MicroRNA Targets by Linking Sequence, MicroRNA and Gene Expression Data.

Jim Huang, Quaid Morris and Brendan Frey.

4:35pm-5:00pm

RNA Secondary Structure Prediction via Energy Density Minimization.

Can Alkan, Emre Karakoc, Süleyman Cenk Sahinalp, Peter Unrau, Holger Alex Ebhardt, Kaizhong Zhang and Jeremy Buhler.

5:00pm-5:25pm

Structural Alignment of Pseudoknotted RNA.

Banu Dost, Buhm Han, Shaojie Zhang and Vineet Bafna.

SESSION 5

5:30pm-7:30pm

Poster Session A

Monday, April 3, 2006

SESSION 6

8:30am-9:25am

Keynote: Michael S. Waterman, University of Southern California - USA

9:25am-9:50am

CONTRAlign: Discriminative Training for Protein Sequence Alignment.

Chuong Do, Samuel Gross and Serafim Batzoglou.

9:50am-10:15am

Clustering Near-Identical Sequences for Fast Homology Search.

Michael Cameron, Yaniv Bernstein and Hugh E. Williams.

10:15am-10:40am

Coffee

SESSION 7

10:40am-11:05am

New Methods for Detecting Lineage-specific Selection.

Adam Siepel, Katherine Pollard and David Haussler.

11:05am-11:30am

A Probabilistic Model for Gene Content Evolution with Duplication, Loss, and Horizontal Transfer.

Miklos Csuros and Istvan Miklos.

11:30am-11:55am

A Sublinear-Time Randomized Approximation Scheme for the Robinson-Foulds Metric.

Nicholas Pattengale and Bernard Moret.

11:55am-12:20pm

Algorithms to Distinguish the Role of Gene-Conversion from Single-Crossover Recombination in the Derivation of SNP Sequences in Populations.

Zhihong Ding, Dan Gusfield, Charles Langley, Yun Song and Yufeng Wu.

12:20pm-2:00pm

Lunch

SESSION 8

2:00pm-2:55pm

Keynote: Ajay K Royyuru, IBM T.J. Watson Research Center - USA

2:55pm-3:20pm

Efficient Enumeration of Phylogenetically Informative Substrings.

Stanislav Angelov, Boulos Harb, Sampath Kannan, Sanjeev Khanna and Junhyong Kim.

- 3:20pm-3:45pm *Phylogenetic Profiling of Insertions and Deletions in Vertebrate Genomes.*
Sagi Snir and Lior Pachter.
- 3:45pm-4:10pm *Maximal Accurate Forest from Distance Matrices.*
Satish Rao, Cameron Hill, Alexander Jaffe, Dan Adkins, Costantinos Daskalakis and Radu Mihaescu.
- 4:10pm-4:35pm Coffee

SESSION 9

- 4:35pm-5:00pm *Leveraging Information Across MHC Alleles/Supertypes Improves MHC-Specific Epitope Prediction.*
David Heckerman, Carl Kadie and Jennifer Listgarten.
- 5:00pm-5:25pm *Improving Prediction of Zinc Binding Sites by Modeling the Linkage between Residues Close in Sequence.*
Sauro Menchetti, Andrea Passerini, Paolo Frasconi, Claudia Andreini and Antonio Rosato.
- 5:25pm-5:50pm *An Important Connection Between Network Motifs and Parsimony Models.*
Teresa Przytycka.

RECOMB Business Meeting

- 6:00pm-6:10pm *RECOMB06 Report*
Alberto Apostolico
- 6:10pm-6:20pm RECOMB 10th Anniversary Presentation
Sarah J. Aerni and Eleazar Eskin
- 6:20pm-6:25pm *RECOMB 07 Announcement*
Terry Speed
- 6:25pm-6:35pm Short Break
- 6:35pm-7:25pm Panel: "Computational Biology: Past Glories / Past Failures / Future Directions"
Alberto Apostolico, David Haussler, Sorin Istrail, Thomas Lengauer, Michal Linial, Pavel Pevzner, David Sankoff, Ron Shamir, Terry Speed, Michael Waterman
- 7:25pm-7:40pm Questions from the Audience

Tuesday, April 4, 2006

SESSION 10

- 8:30am-9:25am **Keynote:** David Haussler, University of California, Santa Cruz - USA
- 9:25am-9:50am *Permutation Filtering: A Novel Concept for Significance Analysis of Large-scale Genomic Data.*
Stefanie Scheid and Rainer Spang.
- 9:50am-10:15am *Genome-wide Discovery of Modulators of Transcriptional Interactions in Human B Lymphocytes.*
Kai Wang, Ilya Nemenman, Nilanjana Banerjee and Andrea Califano.
- 10:15am-10:40am Coffee

SESSION 11

- 10:40am-11:05am *A New Approach to Protein Identification.*
Nuno Bandeira, Dekel Tsur, Ari Frank and Pavel Pevzner.
- 11:05am-11:30am *Markov Methods for Hierarchical Coarse-Graining of Large Protein Dynamics.*
Chakra Chennubhotla and Ivet Bahar.
- 11:30am-11:55am *Simulating Protein Motions with Rigidity Analysis.*
Shawna Thomas, Xinyu Tang, Lidia Tapia, Nancy M. Amato.
- 11:55am-12:20pm *Predicting Experimental Quantities in Protein Folding Kinetics Using Stochastic Roadmap Simulation.*
Tsung-Han Chiang, David Hsu, Mehmet Serkan Apaydin, Douglas L. Brutlag, Jean-Claude Latombe.
- 12:20pm-2:00pm Lunch

SESSION 12

- 2:00pm-2:55pm **Keynote:** Carl Zimmer, Science Writer - USA
- 2:55pm-3:20pm *Alignment Statistics for Long-Range Correlated Genomic Sequences.*
Philipp W. Messer, Ralf Bundschuh, Martin Vingron and Peter F. Arndt.
- 3:20pm-3:45pm *Fast and Simple Inverse Alignment.*
John Kececioglu and Eagu Kim.

SESSION 13

- 4:00pm-6:00pm Poster Session B
- 6:30pm-9:30pm Social Dinner

Wednesday, April 5, 2006

SESSION 14

- 8:30am-9:25pm **Keynote:** Roman Zubarev, Uppsala University - Sweden
- 9:25am-9:50am *Motif Yggdrasil: Sampling from a Tree Mixture Model.*
Samuel A. Andersson and Jens Lagergren.
- 9:50am-10:15am *A Study of Accessible Motifs and RNA Folding Complexity.*
Ydo Wexler, Chaya Zilberstein and Michal Ziv-Ukelson.
- 10:15am-10:40am Coffee

SESSION 15

- 10:40am-11:05am *A Parameterized Algorithm for Protein Structure Alignment.*
Jinbo Xu, Feng Jiao and Bonnie Berger.
- 11:05am-11:30am *Geometric Sieving: Automated Distributed Optimization of 3D Motifs for Protein Function Prediction.*
Brian Y. Chen, Viacheslav Y. Fofanov, Drew H. Bryant, Bradley D. Dodson, David M. Kristensen, Andreas M. Lisewski, Marek Kimmel, Olivier Lichtarge, Lydia E. Kavraki.
- 11:30am-11:55am *A Branch-and-reduce Algorithm for the Contact Map Overlap Problem.*
Wei Xie and Nikolaos Sahinidis.
- 11:55am-12:20pm *A Novel Minimized Dead-End Elimination Criterion and Its Application to Protein Redesign in a Hybrid Scoring and Search Algorithm for Computing Partition Functions over Molecular Ensembles.*
Ivelin Georgiev, Ryan Lilien and Bruce Donald.
- 12:20pm-1:45pm Lunch

SESSION 16

- 1:45pm-2:25pm RECOMB Satellite Panel
Genome Technologies, Serafim Batzoglou
Computational Proteomics, Vineet Bafna
Regulatory Genomics, Eleazar Eskin
Genetic Variations, Sorin Istrail
Comparative Genomics, David Sankoff and Jens Lagergren
System Biology, Ron Shamir
- 2:25pm-2:50pm *Sorting by Weighted Reversals, Transpositions, and Inverted Transpositions.*
Martin Bader and Enno Ohlebusch.
- 2:50pm-3:15pm *A Parsimony Approach to Genome-Wide Ortholog Assignment.*
Zheng Fu, Xin Chen, Vladimir Vacic, Peng Nan, Yang Zhong and Tao Jiang.
- 3:15pm-3:40pm *Detecting the Dependent Evolution of Biosequences.*
Chen-Hsiang Yeang, Jeremy Darot and David Haussler.
- 3:40pm-3:45pm Best Poster Award
- 3:45pm-4:00pm Sponsor Presentation
- 4:00pm Adjourn