

HiCOMB 2013

12th IEEE International Workshop
on High Performance Computational Biology
Monday, May 20, 2013
Boston, Massachusetts, USA

High-performance computing became an integral part of research and development in bioinformatics and computational biology. The large size of biological data sets, inherent complexity of biological problems and the ability to deal with error-prone data, all result in large run-time and memory requirements. The goal of this workshop is to provide a forum for discussion of latest research in developing high-performance computing solutions to data-intensive and compute-intensive problems arising from molecular biology and related life sciences areas. We are especially interested in parallel and distributed algorithms, memory-efficient algorithms, large scale data mining techniques, including approaches for Bigdata and cloud computing, algorithms on multicores and GPUs, and design of high-performance software for biological applications.

The workshop will feature contributed papers as well as invited talks from reputed researchers in the field.

Topics of interest include but are not limited to:

- Bioinformatic databases
- Computational genomics and metagenomics
- Computational proteomics and metaproteomics
- DNA assembly, clustering, and mapping
- Gene expression analysis with RNASeq and microarrays
- Gene identification and annotation
- Parallel algorithms for biological sequence analysis
- Parallel architectures for biological applications
- Molecular evolution and phylogenetic reconstruction algorithms
- Protein structure prediction and modeling
- Next Generation sequence data analysis
- Parallel algorithms in chemical genetics and chemical informatics
- High performance algorithms for systems biology
- Cloud-enabled solutions for computational biology

Important Dates:

- Workshop papers due: January 4, 2013
- Authors notification: February 15, 2013
- Camera-ready papers due: February 28, 2013

Workshop Co-chairs:

- David Bader, Georgia Institute of Technology
- Srinivas Aluru, Iowa State University

Program Chair:

- Jaroslaw Zola, Rutgers University

Program Committee:

- Pratul K. Agarwal – Oak Ridge National Laboratory
- Mario Cannataro – University Magna Graecia of Catanzaro, Italy
- Umit Catalyurek – Ohio State University
- Mark Clement – Brigham Young University
- Scott Emrich – University of Notre Dame
- Mathieu Giraud – University of Lille, France
- Ananth Kalyanaraman – Washington State University
- Marta Kasprzak – Poznan University of Technology, Poland
- Ben Langmead – Johns Hopkins University
- Alba Cristina M.A. de Melo – University of Brasilia, Brazil
- Folker Meyer – Argonne National Laboratory
- Olga Nikolova – Iowa State University
- Fahad Saeed – National Institutes of Health
- Bertil Schmidt – Johannes Gutenberg University Mainz, Germany
- Carlos P. Sosa – Cray, Inc. and University of Minnesota
- Alexandros Stamatakis – HITS gGmbH, Germany
- Michela Taufer – University of Delaware
- Tiffani L. Williams – Texas A&M University
- Xiao Yang – Broad Institute