

12th IEEE International Workshop on High Performance Computational Biology

HiCOMB 2013

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In conjunction with the 27th IEEE International Parallel and Distributed Processing Symposium

Message from the Workshop Chairs

Welcome to the 12th IEEE International Workshop on High Performance Computational Biology (HiCOMB). The interdisciplinary field of computational biology and bioinformatics is at the verge of several exciting possibilities owing to a rapid introduction of many disruptive experimental technologies to procure data. The resulting preponderance of data and the inherent complexity of processing have collectively placed an enormous demand on the computational methods that seek to model and analyze biological data — a demand that can be met only through a comprehensive embrace of high performance computing. The goal of this workshop is to provide a forum for discussion of the latest research in the design and development of high performance computing solutions to data- and compute-intensive problems arising from molecular biology and related life sciences.

The technical program was organized by Program Chair Jaroslaw Zola from Rutgers University along with nineteen members of a distinguished program committee. This year we received a total of seventeen regular submissions. Each paper was thoroughly reviewed by at least three members of the program committee. Based on the reviews, eight papers were selected for presentation at the workshop and inclusion in the workshop proceedings. These papers cover a wide range of topics including next-generation sequence analysis, phylogenetics, structure prediction and systems biology. The program also included two invited presentations from Srinivas Aluru (Iowa State University) and Ananth Kalyanaraman (Washington State University). The HiCOMB keynote presentation was delivered by George Karniadakis from Brown University.

We are grateful to the program committee members for submitting timely and thorough reviews. We wish to thank all the authors who submitted manuscripts to this workshop, without which this high quality technical program would not have been possible. We plan to continue this workshop in the forthcoming years and look forward to your continuing support in this endeavor.

Jaroslaw Zola, David A. Bader, Srinivas Aluru

Workshop Organizers

Workshop Co-Chairs:

David A. Bader (Georgia Institute of Technology, USA)
Srinivas Aluru (Iowa State University, USA)

Program Chair:

Jaroslav Zola (Rutgers University, USA)

Program Committee:

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