Preface

Welcome to the 2009 IEEE International Conference on Bioinformatics and Biomedicine (BIBM 2009) being held in Washington, D.C., USA, on November 1–4, 2009. On behalf of the BIBM 2009 organizing team, we would like to thank you for your participation and hope you enjoy the conference.

Bioinformatics and biomedicine research is fundamental to our understanding of complex biological systems, impacting the science and technology of fields ranging from agricultural and environmental sciences to pharmaceutical and medical sciences. This type of research requires close collaboration among multidisciplinary teams of researchers in quantitative sciences, life sciences, and their interfaces. The IEEE International Conference on Bioinformatics and Biomedicine aims to provide an open and interactive forum to catalyze the cross-fertilization of ideas from these disciplines and to bridge our knowledge gaps.

BIBM 2009 promises to provide great scientific quality and to have a broad impact, with world-renowned scientists as keynote speakers and invited speakers, contributed talks at a highly competitive acceptance rate, special issue publications in well-known scientific journals, and the broad participation of the research community serving on the Program Committee and the organizing committees for workshops, tutorials, and posters. The scientific program highlights four themes to provide breadth, depth, and synergy for research collaboration: (1) genomics and molecular structure, function, and evolution; (2) computational systems biology; (3) medical informatics and translational bioinformatics; and (4) cross-cutting computational methods and bioinformatics infrastructures.

Since its inception in 2007, the BIBM conference has grown both in size and global reach, from 136 and 160 research paper submissions in 2007 and 2008, respectively, to 233 paper submissions from 33 countries in 2009. The Program Committee accepted 81 papers this year, of which 44 (18.9%) are regular research papers and 37 (15.9%) are short papers. In addition to four keynote speeches and eight invited talks from preeminent scientists and contributed talks from the accepted regular papers, the conference will feature seven workshops and two tutorials on special topics of interest, as well as poster sessions for accepted short papers and other submitted posters on topics relevant to bioinformatics and biomedicine. To broaden the reach of the scientific work presented at the conference, accepted research papers have been published in this IEEE Conference Proceedings, while workshop papers and poster abstracts have been published in the Workshop and Poster Proceedings. Special issues will be published in four scientific journals: *IEEE/ACM Transactions on Computational Biology and Bioinformatics* (TCBB), *Artificial Intelligence in Medicine* (AIIM), *International Journal of Data Mining and Bioinformatics* (IJDMB), and *BMC Bioinformatics*.

Two special panels, the Funding Agency Roundtable and the Bioinformatics Educational Workshop, will foster discussions on research and education opportunities and barriers. The Funding Agency Roundtable consists of panelists representing the major federal funding agencies, including the National Science Foundation (NSF), the Department of Energy, and nine institutes and centers of the
National Institutes of Health: NIGMS, NHGRI, NLM, NCI, NCRR, NIAID, NIBIB, NINDS, and CSR. The panel will present and discuss major initiatives and programs related to support for bioinformatics research, education, infrastructure, and interdisciplinary collaboration, as well as opportunities for young investigators and topics on peer reviews.

The Bioinformatics Educational Workshop consists of panelists representing different sectors (academia, industry, and government) at different stages of career development and will cover topics on career paths, lessons learned from current bioinformatics degree programs, and challenges and opportunities for women in bioinformatics.

We wish to thank all of the authors who submitted papers and participated in the conference. Our deepest appreciation goes to the 200+ researchers who served as program vice chairs, Organizing Committee members, and Program Committee members for their extraordinary dedication and distinguished reviewing efforts to serve our scientific community. Finally, we would like to acknowledge the funding support from the NSF. The Travel Awards support the participation of graduate students and early career researchers, especially those from underrepresented groups, while the Best Paper/Poster Awards promote the scientific excellence of young researchers in the field of bioinformatics and biomedicine. We would like to specially encourage the active participation of early career researchers and graduate students in future BIBM conferences as a training opportunity for our next generation of scientists and engineers!

Conference Chairs
Xue-wen Chen, University of Kansas
Sun Kim, Indiana University

Program Chairs
Cathy Wu, University of Delaware
Dong Xu, University of Missouri