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Biological and Medical Data Analysis

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Proceedings

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Preface

This year, the 5th International Symposium on Medical Data Analysis has experimented an apparently slight modification. The word "biological" has been added to the title of the conferences. The motivation for this shift goes beyond the wish to attract a different kind of professional. It is linked to recent trends to produce a shift within various biomedical areas towards genomics-based research and practice. For instance, medical informatics and bioinformatics are being linked in a synergic area denominated biomedical informatics. Similarly, patient care is being improved, leading to concepts and areas such as molecular medicine, genomic medicine or personalized healthcare.

The results from different genome projects, the advances in systems biology and the integrative approaches to physiology would not be possible without new approaches in data and information processing. Within this scenario, novel methodologies and tools will be needed to link clinical and genomic information, for instance, for genetic clinical trials, integrated data mining of genetic clinical records and clinical databases, or gene expression studies, among others.

Genomic medicine presents a series of challenges that need to be addressed by researchers and practitioners. In this sense, this ISBMDA conference aimed to become a place where researchers involved in biomedical research could meet and discuss. For this conference, the classical contents of former ISMDA conferences were updated to incorporate various issues from the biological fields. Similarly to the incorporation of these new topics of the conference, data analysts will face, in this world of genomic medicine and related areas, significant challenges in research, education and practice.

For this conference, after a peer-review process, we selected the scientific papers that are now published in this issue. The editors would like to thank all the participants for their outstanding contributions and Springer for publishing the proceedings of this conference. Finally, we would like to acknowledge the collaboration of Prof. Rüdiger Brause, who was the first chair of the ISMDA conferences. Without his inspiration and support, this idea would not have been possible.

November 2004

Jose M. Barreiro
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