FOREWORD

This special issue of REVSTAT — *Statistical Review* contains a selection of papers (invited and contributed) presented at the *Workshop on Statistics in Genomics and Proteomics* that took place in Monte Estoril, Portugal, from 5–8 October 2005.

The workshop, organized under the auspices of the *International Mathematical Center* (CIM, http://www.cim.pt) and the *Center of Statistics and its Applications* (CEAUL, http://www.ceaul.fc.ul.pt), brought together leading researchers in the areas of statistics in genomics and proteomics, who described the state of the art and presented several challenging problems for researchers in Biostatistics and Bioinformatics. Thanks are due to Wolfgang Urfer and Terry Speed who helped to organize the invited programme. We also express our gratitude to all the speakers for their contribution to the high scientific standards of the *Workshop on Statistics in Genomics and Proteomics.*

Due to the lack of space, it was not possible to condense all the outstanding contributions to the workshop into this single special issue. However, a further selection of invited and contributed papers will be published by CIM in their edition of Proceedings of Conferences.

The four papers in this volume illustrate some of the statistical problems currently of interest in bioinformatics. Dunning et al. describe methods for the low-level analysis of expression data coming from Illumina bead-based microarray platforms. Microarray data are often used to infer regulatory networks. Matias et al. discuss a probabilistic model for the occurrence of motifs in such networks, allowing investigators to identify significant motifs. Opgen-Rhein and Strimmer develop a graphical model for uncovering regulatory interactions using gene expression data observed over time. The longitudinal data theme continues into the last paper in the series, by Jung et al. They analyse protein expression data obtained from a cancer cell line using difference gel electrophoresis.

Finally we would like to express our thanks to Lisete Sousa and Luzia Gonçalves for all the work they put in the organization of this event.

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