

# PREFACE

The papers in this volume were presented at one of the 1997 Summer Research Conferences in the Mathematical Sciences jointly sponsored by the Institute of Mathematical Statistics, the American Mathematical Society and the Society for Industrial and Applied Mathematics. The theme of the meeting was “Statistics in Molecular Biology and Genetics”. That this volume is published jointly by the Institute of Mathematical Statistics and the American Mathematical Society reflects the emerging importance of Statistics in these fields.

These papers fall into broad categories: population genetics, evolutionary genetics, protein structure, genetic mechanisms, quantitative genetics, human genetics and sequence motifs. While some of these areas have a long history of statistical input (and have motivated some mainstream statistical developments), others are new statistical applications. The talks by Professors D. Botstein, M.-C. King and M. Olson underlined the great need for statistical expertise in cutting-edge biological technology. Their stimulating presentations treated us with wonderfully clear overviews of current directions in important areas of genetic research (namely, physical mapping, genetic mapping and functional genetics).

The manuscripts underwent a rigorous review process: each was scrutinized by two anonymous referees. For their critical reviews, my gratitude goes to: D. Balding, L. Edler, W. Ewens, J. Felsenstein, J. Hein, P. Joyce, A. Kong, M. Kuhner, K. Lange, A. Lapedes, M. Man, P. Marjoram, K. Mengersen, M.-S. McPeck, M. Moehle, D. Nelson, M. Nordborg, I. Painter, A. Pluzhnikov, A. Ramaswami, G. Reinert, S. Sawyer, M. Stephens, E. Thompson and M. Trosset.

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