

Preface

In August 1999, at the Joint Statistical Meetings in Baltimore, two of us [DA & JC] were invited to present a paper on "The Analysis of DNA Microchip Data." This was the first presentation in any Joint Statistical Meetings on the topic of DNA microarrays, as they are now called. In just a few years, the field has exploded and, in each of the recent Joint Statistical Meetings, there have been over a hundred presentations related to DNA microarrays!

The Baltimore paper outlined many of the issues that are still being discussed today, including intensity-dependent normalization, the use of methods that are robust to outliers, improving the sensitivity of the analysis by borrowing strength across genes, and interpretation of results in a way that is germane to the overall objectives of a study. However, there have been many developments since then, and this book represents our effort at organizing this material into a semicoherent whole.

ACKNOWLEDGMENTS

We would like to thank several bioinformaticians, scientists, and statisticians at Johnson and Johnson and elsewhere who patiently helped to educate us about genomics and microarrays and in writing this book. We would particularly like to acknowledge Jim Colaianne, Luc Bijmans, Hinrich Gohlmann, Peter Ghazal, Michael McMillian, Nandini Raghavan, Zhenya Cherkas, Albert Lo, Kwok Tsui, David Tyler, Birol Emir, Alicia Nieto Reyes, Chin-Ray Yu, Yung-Seop Lee, Volha Tryputsen, Willem Talloen, An de Bondt, Hugo Ceulemans, Tomasz Burzykowski, Tim Davison, Jackson Wan, Xuejun Liu, Harindra Abeysinghe, Gordon Pledger, Sepp Hochreiter, Adetayo Kasim, Martin Otava, Willem Talloen, Suzy Van Sanden, Dan Lin, Nolen Joy Perualila, Tatsiana Khamikova, Pushpika Thilakarathne, and Dani Yekutieli. We would also like to note that numerous graduate students at Rutgers University and Universiteit Hasselt assisted us in our research.

Ziv Shkedy gratefully acknowledge support from the Belgian IUAP/PAI network "Statistical techniques and modeling for complex-substantive questions with complex data." And last, but not least, we would like to thank Gayatri Amaratunga and Maria Drelich, who helped in various ways.

DHAMMIKA AMARATUNGA
JAVIER CABRER
ZIV SHKEDY