

CONTENTS

1. ... and Counting: DNA-Microarrays	1
Jörg D. Hoheisel	
2. Obtaining and Evaluating Gene Expression Profiles with cDNA Microarrays	5
Michael Bittner, Yidong Chen, Sally A. Amundson, Javed Khan, Albert J. Fornace Jr., Edward R. Dougherty, Paul S. Meltzer, and Jeffrey M. Frent	
3. Large Scale Expression Screening Identifies Molecular Pathways and Predicts Gene Function	27
Nicolas Pollet, Volker Gawantka, Hajo Delius, and Christof Niehrs	
4. The Glean Machine: What Can We Learn from DNA Sequence Polymorphisms?	37
Daniel L. Hartl, E. Fidelma Boyd, Carlos D. Bustamante, and Stanley A. Sawyer	
5. Automatic Assembly and Editing of Genomic Data	51
B. Chevreux, T. Pfisterer, and S. Suhai	
6. QUEST: An Iterated Sequence Databank Search Method	67
William R. Taylor and Nigel P. Brown	
7. An Essay on Individual Sequence Variation in Expressed Sequence Tags (ESTs)	83
Jens Reich, David Brett, and Jens Hanke	
8. Sequence Similarity Based Gene Prediction	95
Roderic Guigó, Moisés Buset, Pankaj Agarwal, Josep E Abril, Randall F. Smith and James W. Fickett	
9. Functional Proteomics	107
Joachim Klose	

10. The Genome As a Flexible Polymer Chain: Recent Results from Simulations and Experiments	121
Jörg Langowski, Carsten Mehring, Markus Hammermann, Konstantin Klenin, Christian Münkkel, Katalin Tóth, and Gero Wedemann	
11. Analysis of Chromosome Territory Architecture in the Human Cell Nucleus: Overview of Data from a Collaborative Study	133
H. Bornfleth, C. Cremer, T. Cremer, S. Dietzel, P. Edelmann, R. Eils, W. Jäger, D. Kienle, G. Kreth, P. Lichter, G. Little, C. Münkkel, J. Langowski, I. Solovei, E. H. K. Stelzer, and D. Zink	
12. From Sequence to Structure and Function: Modelling and Simulation of Light-Activated Membrane Proteins	141
Jerome Baudry, Serge Crouzy, Benoit Roux, and Jeremy C. Smith	
13. SHOX Homeobox Gene and Turner Syndrome	149
E. Rao and G. A. Rappold	
14. A Feature-Based Approach to Discrimination and Prediction of Protein Folding	157
Boris Mirkin and Otto Ritter	
15. Linking Structural Biology with Genome Research: The Berlin “Protein Structure Factory” Initiative	179
Udo Heinemann, Juergen Frevert, Klaus-Peter Hofmann, Gerd Illing, Hartmut Oschkinat, Wolfram Saenger, and Rolf Zettl	
16. G Protein-coupled Receptors, or the Power of Data	191
Florence Horn, Mustapha Mokrane, Johnathon Weare, and Gerrit Vriend	
17. Distributed Application Management in Bioinformatics	215
M. Senger, P. Ernst, and K.-H. Glatting	
18. Is Human Genetics Becoming Dangerous to Society?	231
Charles J. Epstein	
Contributors	243
Index	249