

Preface

I am often asked, “Do you have a good text I can read on analysis of DNA array data?” This is an attempt at providing such a text for students and scientists alike who venture into the field of DNA array data analysis for the first time. The book is written for biologists without special training in data analysis and statistics. Mathematical stringency is sacrificed for intuitive and visual introduction of concepts. Simple solutions are emphasized where more complicated solutions may be more correct. Methods are introduced by simple examples and citations of relevant literature. Practical computer solutions to common analysis problems are suggested, with an emphasis on software developed at and made freely available by my own lab. The text emphasizes gene expression analysis.

This text takes over where the image analysis software that usually comes with DNA array equipment leaves you: with a file of signal intensities and fold change compared to a control. The information in that file will prompt questions such as: How is it scaled? What is the error in the data? When can I say that a certain gene is up-regulated? What do I do with the thousands of genes that show some regulation? How much information can I get out of my data? This text will attempt to answer those questions and others that will come into mind as you delve further into the data.

Each chapter has a section on Further Reading that categorizes relevant literature by topic. In addition, all literature is categorized by author in the Bibliography section.

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