## Contents

Preface to the Second Edition, ix Preface to the First Edition, xi

CHAPTER 1
Historical Introduction and Overview, 1

Chapter 2
Collecting and Storing Sequences in the Laboratory, 29

CHAPTER 3
Alignment of Pairs of Sequences, 65

CHAPTER 4 Introduction to Probability and Statistical Analysis of Sequence Alignments, 121

CHAPTER 5
Multiple Sequence Alignment, 163

CHAPTER 6
Sequence Database Searching for Similar Sequences, 227

CHAPTER 7
Phylogenetic Prediction, 281

CHAPTER 8
Prediction of RNA Secondary Structure, 327

CHAPTER 9
Gene Prediction and Regulation, 361

CHAPTER 10
Protein Classification and Structure Prediction, 409

CHAPTER 11 Genome Analysis, 495

CHAPTER 12 Bioinformatics Programming Using Perl and Perl Modules, 549

CHAPTER 13 Analysis of Microarrays, 611

Index, 667