

Contents

Preface	ix
1 Light Microscopy <i>Ernst Keller and Robert D. Goldman</i>	1
2 Confocal Microscopy, Deconvolution, and Structured Illumination Methods <i>John M. Murray</i>	43
3 Multiphoton and Multispectral Laser-scanning Microscopy <i>Mary E. Dickinson</i>	83
4 Preparation of Cells and Tissues for Fluorescence Microscopy <i>Andrew H. Fischer, Kenneth A. Jacobson, Jack Rose, and Rolf Zeller</i>	105
5 Nonimmunological Fluorescent Labeling of Cellular Structures <i>Brad Chazotte</i>	125
6 Introduction to Immunofluorescence Microscopy <i>George McNamara</i>	145
7 Immunostaining of Microtubules, Microtubule-associated Proteins, and Intermediate Filaments <i>Satya Khoun and Joanna Olmsted</i>	155
8 Immunofluorescence Localization of Actin <i>Anna Spudich</i>	165
9 Immunofluorescence Localization of Nuclear Proteins <i>David L. Spector</i>	171
10 Immunofluorescence Methods for <i>Saccharomyces cerevisiae</i> <i>Pamela Silver</i>	175
11 Immunofluorescence Methods for <i>Drosophila</i> Tissues <i>Jason Swedlow</i>	183
12 Immunofluorescence Methods for <i>Caenorhabditis elegans</i> <i>Sarah Crittenden and Judith Kimble</i>	194

13	Analyzing DNA Replication: Nonisotopic Labeling <i>Dean Jackson and Peter R. Cook</i>	201
14	Analyzing RNA Synthesis: Nonisotopic Labeling <i>Dean Jackson and Peter R. Cook</i>	213
15	Fluorescence In Situ Hybridization to DNA <i>Peter Lichter, Stefan Lampen, and Johanna Bridger</i>	223
16	Whole-Mount Fluorescence In Situ Hybridization to <i>Drosophila</i> Chromosomal DNA <i>Abby Dernburg</i>	261
17	In Situ Hybridization to RNA <i>Sui Huang and Robert Singer</i>	277
18	Whole-Mount In Situ Detection of RNAs in Vertebrate Embryos and Isolated Organs <i>Anna Haramis and Rolf Zeller</i>	291
19	Image Production Using Transmission Electron Microscopy <i>Mark H. Ellisman</i>	303
20	Preparative Methods for Transmission Electron Microscopy <i>Thomas J. Deerinck, Maryann Martone, and Mark H. Ellisman</i>	307
21	Immunoelectron Microscopy <i>Robert Ochs</i>	343
APPENDIX 1 Microscopy: Lenses, Filters, and Emission/Excitation Spectra		359
APPENDIX 2 Cautions		369
Index		379