

# Contents

1. Pathology laboratory management <b>Beth Cox and Emma Colgan</b>	1
2. Chemical safety in the laboratory <b>Ada T. Feldman</b>	12
3. Light microscopy <b>John D. Bancroft</b>	25
4. Fixation of tissues <b>Christopher Layton, John D. Bancroft and S. Kim Suvarna</b>	40
5. The gross room/surgical cut-up including sample handling <b>S. Kim Suvarna</b>	64
6. Tissue processing <b>Dee Wolfe</b>	73
7. Microtomy for paraffin and frozen sections <b>Lena T. Spencer</b>	84
8. Resin (plastic) embedding for microscopy and tissue analysis <b>John W. Stirling and Anthony E. Woods</b>	96
9. Theory of histological staining <b>Richard W. Horobin</b>	114
10. The hematoxylin and eosin <b>John D. Bancroft and Christopher Layton</b>	126
11. Automation in the histology department <b>Greg Zardin and Lynne Braithwaite</b>	139
12. Connective and other mesenchymal tissues with their stains <b>John D. Bancroft and Christopher Layton</b>	153
13. Carbohydrates <b>Christopher Layton and John D. Bancroft</b>	176
14. Pigments and minerals <b>Guy E. Orchard</b>	198
15. Amyloid <b>Janet A. Gilbertson</b>	231
16. Traditional stains and modern techniques for demonstrating microorganisms in histology <b>Gayti B. Morris, Elisabeth J. Ridgway and S. Kim Suvarna</b>	254
17. Bone <b>Diane L. Sterchi</b>	280



18. Neuropathology and muscle biopsy techniques	306
<b>J. Robin Highley and Nicky Sullivan</b>	
19. Immunohistochemical and immunofluorescent techniques	337
<b>Tracy Sanderson, Graeme Wild, Ann Michelle Cull, Jennifer Marston and Greg Zardin</b>	
20. Molecular pathology	395
<b>Philippe Taniere, Brendan O'Sullivan, Matthew Evans and Frances Hughes</b>	
21. Transmission electron microscopy	434
<b>Anthony E. Woods and John W. Stirling</b>	
22. Digital pathology	476
<b>Jonathan Bury and Jonathan Griffin</b>	
Appendices	
Diagnostic Appendices	493
Appendix I Traditional methods	495
<b>John D. Bancroft and Jennifer H. Stonard</b>	
Appendix II Tissue microarray	505
<b>John D. Bancroft</b>	
Appendix III Applications of immunohistochemistry	509
<b>Sophie R. Stenton and Eu-Wing Toh</b>	
Technical Appendices	517
Appendix IV Measurement units	519
<b>Jennifer H. Stonard</b>	
Appendix V Preparation of solutions	521
<b>Danielle McCluskey</b>	
Appendix VI Buffer solutions	525
<b>Paul Samuel</b>	
Appendix VII Solubility of some common reagents and dyes	529
<b>Stuart Inglut</b>	
Appendix VIII Mounting media and slide coatings	535
<b>Ann Michelle Cull</b>	
Index	537