

Additional reading and useful resources

(1) Microscopy books and publications

Most basic:

Abramowitz, M. 1993. Fluorescence Microscopy—The Essentials. Produced for Olympus America. Microscopy from the very beginning. A booklet produced by Carl Zeiss, Inc.

More advanced:

Slayter, E. M and H.S. Slayter. 1992. Light and Electron Microscopy. Cambridge University Press, Cambridge, UK. 332 pp.

Murphy, D.B. 2001. Fundamentals of Light Microscopy and Electronic Imaging. Wiley-Liss, Inc., New York. 368 pp.

Cell Biology. A Laboratory Handbook. 2nd edition. 1997. J.E. Celis, editor. Academic Press Inc., Orlando, FL. 2400 pp.

Green Fluorescent Proteins. 1999. Methods in Cell Biology. Vol. 58. K.F. Sullivan and S.A. Kay, editors. Academic Press Inc., Orlando, FL. 386 pp.

Hibbs, A.R. 2004. Confocal Microscopy for Biologists. Springer, New York. 474 pp.

Handbook of Biological Confocal Microscopy. 2nd edition. 1995. J.B. Pawley, editor. Plenum Press, New York. 632 pp.

Methods in Cellular Imaging. 2001. A. Periasamy, editor. Oxford University Press, Oxford, UK. 448 pp.

Live Cell Imaging—A Laboratory Manual. 2005. R.D. Goldman and D.L. Spector, editors. Cold Spring Harbor Laboratory Press, Cold Spring Harbor, NY. 631 pp.

(2) Web-based resources

(i) Four great sites for everybody from beginners to specialists—find out about different types of microscopy and work through interactive java tutorials:

The Molecular Expressions Microscopy Primer. Introduction to Microscopy:

<http://microscopy.fsu.edu/primer/index.html>

The Nikon Microscopy U site: <http://www.microscopyu.com/>

The Olympus Microscopy Resource Center. <http://www.olympusmicro.com/>

The Olympus FluoView Resource Center. <http://www.olympusconfocal.com/theory/index.html>

(ii) Other general microscopy sites, with a variety of information including meetings, short courses, useful sources of microscopy information, educational resources and vendors' information:

<http://www.mwrn.com>

<http://www.mme-microscopy.com/education/>

<http://www.ihcworld.com/>

<http://swehsc.pharmacy.arizona.edu/exppath/micro/edu/education.html>

(iii) FRET information:

<http://www.fretimaging.org/>

(iv) The confocal listserver:

listserv@ubvm.cc.buffalo.edu

(v) The multiphoton listserver:

<http://groups.yahoo.com/group/mpism-users/>

(vi) Databases of fluorochromes, dyes, their spectra and appropriate filter combinations (both for single and multi-photon excitation):

<http://probes.invitrogen.com/resources/education/>

<http://www.cyto.purdue.edu/flowcyt/software/Spectra.htm>
<http://www.chroma.com/resources/index.php>
<http://home.earthlink.net/~mpmicro/>
<http://cellscience.bio-rad.com/fluorescence/fluorophoreDatab.htm>
<http://www.mcb.arizona.edu/ipc/fret/indexA.html>
http://www.mcb.arizona.edu/IPC/spectra_page.htm

(3) Vendors and companies

Never underestimate the knowledge of the sales and technical support representatives of the companies you deal with. They are an invaluable source of advice and support and are always ready to answer the most basic of questions. Note that several of the books and web pages linked here were produced by these companies for our benefit.

(4) Microscopy courses

Take an intensive short course to improve your practical microscopy skills and gain a thorough grasp of basic optical principles. Among the many on offer I particularly recommend:

In the USA:

(i) Annual Optical Microscopy and AQLM courses at the Marine Biological Laboratory, Woods Hole:
<http://www.mbl.edu/education/>

(ii) Annual Fluorescence Microscopy course at the Mount Desert Island Biological Laboratory, Bar Harbor:
<http://www.mdibl.org/>

(iii) Annual International 3D Microscopy of Living Cells course:
<http://www.3dcourse.ubc.ca/index.htm>

(iv) Annual Cold Spring Harbor Laboratory course on “Immunocytochemistry, In situ hybridization and Live Cell Imaging”:
<http://meetings.cshl.edu/courses/c-situ05.shtml>

In Europe:

(i) ELMI meetings:
http://www.embl.de/eamnet/body_index.html

(ii) FEBS advanced courses:
http://www.febs.org/Activities/Advanced_Courses/ADVCGEN.HTM

(iii) EMBO practical courses:
http://www.embo.org/projects/courses_workshops/index.html