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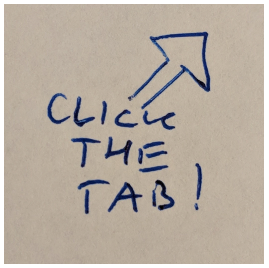
Online microscopy and histology resources V.4



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Abstract

There is a wealth of microscopy-related information online. This document lists the ones we know and like. Click on the document tab to see the list!

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Microscopy theory and practice:

iBiology Microscopy Course
https://www.ibiology.org/ibioeducation/taking-courses/ibiology-microscopy-course.html

Fourier transformation explained by 3Blue1Brown
https://www.youtube.com/watch?v=spUNpyF58BY

Vendor websites with lots of information about microscopy
https://www.microscopyu.com/
http://zeiss-campus.magnet.fsu.edu/
https://www.leica-microsystems.com/science-lab/

Spectra viewers
http://www.nightsea.com/sfa-sharing/fluorescence-spectra-viewers/

Porweful spectra database of fluorescent proteins and probes by Talley Lambert
https://www.fpbase.org/

Image analysis:

Quantifying microscopy images: top 10 tips for image acquisition by Anne Carpenter
https://blog.cellprofiler.org/2017/06/15/quantifying-microscopy-images-top-10-tips-for-image-acquisition/

Analyzing fluorescence microscopy images with ImageJ by Pete Bankhead
https://petebankhead.gitbooks.io/imagej-intro/content/

Image analysis forum for ImageJ, Fiji, CellProfiler, KNIME, Icy, Ilastik, scikit-image, and friends
https://forum.image.sc

Image analysis forum for QuPath
https://groups.google.com/forum/#!forum/qupath-users

QuPath tutorials
https://www.youtube.com/channel/UCqepVnS1QsB7B8nBA9T91EQ/playlists

Fiji manual with tutorials by Cameron J. Nowell
https://cloudstor.aarnet.edu.au/plus/index.php/s/bxRU7kkoj2rIjCh#pdfviewer - manual
https://cloudstor.aarnet.edu.au/plus/index.php/s/xdwcNFp0kafaNNN - tutorial data

Immunolabeling:

Search for well-referenced antibodies
https://www.citeab.com/

Open access, online antibody tool
https://www.antibodypedia.com

Machine learning-based antibody search
https://www.benchsci.com/

Constantly improving panel of validated human antibodies used in clinical trials
http://www.nordiqc.org/

Antibody performance following fixation
https://www.thermofisher.com/us/en/home/life-science/cell-analysis/cell-analysis-learning-center/cell-analysis-resource-library/ebioscience-resources/antibody-fixation-considerations.html

Learn more about tissue markers with Protein Atlas
https://www.proteinatlas.org/humanproteome/tissue+specific

Cell-type speciifc markers
http://www.antibodybeyond.com/reviews/cell-marker-reviews.htm

General cell and tissue staining protocols
https://www.cellsignal.com/contents/resources/protocols/resources-protocols

Histology:

Excellent guide on proper murine tissue trimming
https://reni.item.fraunhofer.de/reni/trimming/

Great explanation of HE stain optimization
https://www.youtube.com/watch?v=n8VeoXDBDyA

Histology of a normal human lymph node (+IHC)
https://www.youtube.com/watch?v=RHFzxY4ZeYk

Normal skin histology
https://www.youtube.com/watch?v=yQQ2Dmz42Vs

Immunohistochemistry in normal skin

https://www.youtube.com/watch?v=rNbWCTNUqug
https://www.youtube.com/watch?v=4EmIkhO10uw

Medical School Pathology by John R. Minarcik, MD
https://www.youtube.com/watch?v=SK89_DNoA5Q&list=PL3oAYNQ024sijkTwImK4MIiyV1Nmv2xZX&index=1

Online course - Histology: Using Microscopy to Study Anatomy and Identify Disease
Start dates 7 January 2019 and 15 July 2019
https://www.futurelearn.com/courses/histology

A practical guide to the histology of the mouse
http://www.wiley.com/WileyCDA/WileyTitle/productCd-1119941202.html

Data analysis and visualization:

Statistics for biologists
https://www.nature.com/collections/qghhqm

Make a difference: the alternative for p-values
http://thenode.biologists.com/quantification-of-differences-as-alternative-for-p-values/research/

Plots of data by Marten Postma and Joachim Goedhart
https://huygens.science.uva.nl/PlotsOfData/

Getting Started in R by Saghir Basjir and Dirk Eddelbuettel
https://github.com/eddelbuettel/gsir-te

Colour schemes and templates, color-blind friendly - excellent resource by Paul Tol
https://personal.sron.nl/~pault/

Tools:
Handbrake - open source video transcoder
https://handbrake.fr/downloads.php

XnView - free photo viewer, image resizer, batch converter
https://www.xnview.com

VLC media player - open source video player
https://www.videolan.org/vlc/index.html