

Book list and reading suggestions for the lecture course: Principles of Molecular Virology

Text books:

Coffeehouse notes on Virology. Tim Skern, Facultas verlag. This has the basics of virology as well as the material you need to pass the exam!

How pathogenic viruses work. Lauren Sompayrac. Jones and Bartlett publishers. This is an excellent book which looks at viruses another way.

Principles of Virology: Molecular biology, pathogenesis and control. Jane S. Flint, Lynn W. Enquist, Robert M. Krug, Vincent Racaniello, Anna Marie Shalka. ASM Press

Principles of Molecular Virology. A.J. Cann, (Academic Press)

Medical Virology. D. O. White and F. Fenner (Academic Press)

Introduction to Modern Virology. N. Dimmock, A. Easton and K. Leppard (Blackwell Publishing)

Retroviruses. J.M. Coffin, S. H. Huges, H.E. Varmus (CSHL Press)

Virology Methods Manual. Mahy and Hillar, (Academic Press)

Virology Labfax. Harper, editor. (Blackwell scientific publications)

Excellent website:

<http://www.med.sc.edu:85/book/virol-sta.htm>

General Reading:

Witness to AIDS (Tafelberg Press) by Edwin Cameron.

Read how a HIV positive person whose life has been extended by ARVs sees the social and economic impact of AIDS in South Africa. If you only read this book on virology, you will learn much and be challenged even more.

Catching Cold by Pete Davies (Penguin)

The background to the 1918 influenza outbreak. When will it happen again?

Guns, Germs and Steel by Jared Diamond (Vintage)

Why did influenza, measles and smallpox arise in Europe and Asia? Why didn't the Incas conquer Europe? Lots of stimulating ideas and answers to these questions and many more!

Rosalind Franklin: The dark lady of DNA by Brenda Maddox (HarperCollins: available in paperback in April 2003)

50 years after the discovery of the double helix, this is the book to read about the scientific background and the people involved. Never forget that scientists are still people!! And that Rosalind Franklin worked on TMV and poliovirus

The hunt for a killer virus: Hepatitis B by Baruch S. Blumberg (Princeton University Press)

Blumberg discovered Hepatitis B virus whilst looking for something else. Here is the background together with much background information on Hepatitis B transmission and origin.

Background for specific sessions:

Up-date 30th November 2005 All pdfs available from TS if you wish!

Session 8 HIV and AIDS

HIV: experiencing the pressures of modern life, Science (2005) 307, 1422-1424.

Prevention cocktails: combining tools to stop HIV's spread Science (2005) 309, 1002-1005.

Gut assumes sinister new role in HIV pathogenesis. Science (2005) 307, 1395

Randomized, controlled intervention trial of male circumcision for reduction of HIV infection risk: The ANRS trial PLOS medicine.(2005) e298: www.plosmedicine.org

Up-date 17. January

Session 14 Virus evolution and other agents

Prion dormancy and disease. Science (2004) 306, 1692-1693.

Scrapie control under new strain. Nature (2004) 432, 810-811.

HIV and AIDS in relation to other pandemics. EMBO reports (2003) 4, 510-514.

Session 12 Prevention and Control

Polio's last stand. (2001) Nature, 409, 278-280

Update 7th January

All papers available from TS if you wish!

Lecture 8, HIV

1. Science (2004) 306, 2168-2169: Allegations raise fears of backlash against AIDS prevention strategy

Lecture 11, host defence

1. Science (2003) 299, 1505-1508: HIV: escape artist par excellence.

2. Science (2004) 303, 1481-1482: After the Toll Rush.

3. Molecular Cell (2004) 16, 849-859: Retrovirus restriction factors

Chapter 12, prevention and control

1. Science (2004) 305, 24-25. Health workers scramble to contain African epidemics
2. Nature (2004) 432, 275-276. Immune to the facts
3. The Lancet (1998), 351, 637-641. Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Update 10th December

<http://www.ictvdb.rothamsted.ac.uk/ICTVdBintro.htm>

International committee on taxonomy of viruses page with listings of all viruses and their classification. Not exactly bed-time reading (though it may help you fall asleep, as I once did in an ICTV taxonomy meeting), but very useful for checking names and families of viruses.

Chapter 9

All papers available from TS if you wish!

1. The human polyomavirus, JCV, uses serotonin receptors to infect cells. Science, (2004). Ephick et al., 306, 1380-1383.

Chapter 10

2. Identification of virus-encoded microRNAs. (2004) Peffer et al, Science 304, 734-736.

End of up-date

Update Mon 29th Nov:

Session 8:

All papers available from TS if you wish!

1. Getting to the bottom of CD4+ T-cell loss. Nature reviews Microbiology (2004) 853.
2. Evaluating plague and smallpox as historical selective pressures for CCR5-Δ32 HIV-resistance allele. Galvani and Slatkin. (2003) PNAS 100, 15276-15279.
3. Genetic acceleration of AIDS progression by a promoter variant of CCR5. (1998) Science 282, 1907-1911.
4. DC-SIGN, a dendritic cell-specific HIV-1-binding protein that enhances trans-infection of T cells. Geijtenbeek et al (2000) Cell, 100, 575-585.
5. DC-SIGN: escape mechanism for pathogens. Van Kooyk and Geijtenbeek, (2003). Nat rev immunol. 3, 697-709.
6. AIDS vaccine: Can the scientific community outwit 10,000 nucleotides? (2004) American society of microbiology news, 70, 406-410.

End of up-date

Update Mon, 15. Nov:

Session 4:

Baranowski et al. Evolution of Cell Recognition by viruses. *Science* **292**, p1102-1105 (2001)

End of update

Session 4: Attachment and Entry

Smith, A.E and Helenius, A. How viruses enter cells. *Science* **303**, p237-241 (2004).

Session 8: HIV

Walker, P.A. et al.. Sexual transmission of HIV in Afrika. *Nature*, 422, p679 (2003)

Weiss, R. A. Gulliver's travels in HIVland. *Nature* 410, p963-967 (2001)

Session 9: DNA viruses

Saenz-Robles et al.. Transforming functions of SV40. *Oncogene*, 20, 7899-7907 (2001).

Session 11: host defence mechanisms

Parham, P. The unsung heroes - innate immunity. *Nature*, 423, p20 (2003).

"How the immune system works" by Lauren Sompayrac. Blackwell Publishing.

This is the companion book to **"How pathogenic viruses work"**. Obviously, the immunology book goes beyond the scope of the virology course, but if you are interested in or having trouble with immunology, this may be the book you have been waiting for.

"Even I can believe I can understand immunology now". Tim Skern, June 2004

Session 12: Prevention and control of viral disease

http://www.stanford.edu/group/virus/pox/2000/vaccinia_virus.html

Rough-and-tumble behind Bush's smallpox policy. *Science*, 298, 2312-2316 (2003)

Confronting the limits of success. *Science*, 296, 2320-2326 (2002)

Rappuloi et al. The intangible value of vaccination. *Science* 297, 937-939 (2002)

Poliovirus eradication programme

Two steps forward, one step back in polio fight. *Science* (21st May, 2004) 304, p1096

1. Poliovirus: The final assault. *Science* (26th March 2004), **303**, p1960-1968.
2. The Exit Strategy. *Science* (26th March 2004), **303**, p1969-1971.

Relationship of SIV to HIV-1, origin of AIDS

1. Contaminated polio vaccine theory refuted. *Nature* (22nd April 2004), **428**, 820.

Session 13: Viruses and Cancer

Saenz-Robles et al.. Transforming functions of SV40. *Oncogene*, 20, 7899-7907 (2001).

Session 14: Evolution and other agents

R.A. Weiss. Virulence and pathogenesis. *Trends in Microbiology* 10, 314-317 (2002).

Fanning et al. 1917 Avian Influenza Virus sequences suggest that the 1918 pandemic virus did not acquire its hemagglutinin directly from birds. *J. Virol.* 76, 7860-7862 (2002).

Influenza in 1918

Nature's biological weapon. *Nature* (27th May 2004) 429, p345-346

The holy grail of influenza virologists. Nature Medicine (May 1999) 5, p484-485

Pdfs for the above two articles are available on request per email to TS

The virus killing blackbirds in Vienna:

Weissenböck, H. et al., Emergence of Usutu virus, an African mosquito-borne flavivirus of the Japanese encephalitis virus group, central Europe. Emerg Infect Dis. 8:652-6 (2002).

All you ever wanted to know about SARS:

<http://www.sciencemag.org/feature/data/sars/>

<http://sarsreference.com/>

daily SARS updates on:

www.who.org

www.cdc.gov

BSE in UK: <http://www.defra.gov.uk/animalh/bse/>

CJD in UK: <http://www.doh.gov.uk/cjd/cjd1.htm>

latest news on prion research:

Science, 9. May 2003, vol 300 p917-918

Nature, 8. May 2003, vol 423 p127-129

Evolution in humans:

Mead et al. Balancing Selection at the Prion Protein Gene Consistent with Prehistoric Kurulike Epidemics. Science 300, 640-643 (2003)