

# PROTIST TOOLS

## **A Shameless Advertisement**

I have decided to shamelessly advertise a web-based project I have worked on for the last year or so. Recently, together with David Campbell and Patricia Johnson, I have been teaching an upper division undergraduate course at UCLA on Molecular Parasitology (actually on selected parasitic protists). This course actually rekindled a submerged love of teaching and opened my eyes to the beauty and power of modern and classical parasitology. Last summer I decided to create an open source “Online Course” on Molecular Parasitology using this course material and in addition a number of chapters written by a very knowledgeable parasitologist and friend at UC Riverside, Irwin Sherman. This has been a labor of love and has provided a real outlet for my didactic IT (Information Technology) tendencies. The course can be viewed after first registering and obtaining a user name and password at [http://164.67.60.203/parasite\\_course-old/default.htm](http://164.67.60.203/parasite_course-old/default.htm) (remember your cookies!). You can view an updated list of course users from 52 countries since June, 2003 from this page, which either means that the price is right or that it may actually be of some interest. The course is divided into 18 chapters covering both parasites for which much molecular research is available such as African and South American trypanosomes, *Leishmania*, *Trichomonas*, *Giardia*, *Toxoplasma* and *Plasmodium*, and, but also the more enigmatic (from a molecular point of view) parasites, *Entamoeba*, *Isospora*, *Babesia* and *Cryptosporidium*. With the ultimate license of an author, I also added chapters on subjects dear to my scientific heart such as the mystery

and beauty of the kinetoplast DNA and U-insertion/deletion RNA editing, and the fascinating recent discoveries of a World of Small RNAs including RNA interference and snoRNA-guided nucleotide modifications. A chapter on parasite genomics was also included due to the importance and growing relevance of this topic to researchers as the genomes become available. And the beauty of an online course is that it can be upgraded piecemeal or modified at will with little effort (well not really with little effort!).

There is an introductory chapter describing this author's view of the historical development of modern parasitology, together with several luminaries and several not so luminous but nevertheless interesting and important researchers. These were selected to provide the human side of science and to convince students that research is done by people with all their faults and blemishes and occasional flashes of genius. I also try, albeit with not complete success, to demonstrate that scientific "facts" are not meaningful until they fit into a conceptual framework or paradigm, even if it is a mini-paradigm.

Each organism is treated from both the biomedical aspect – the disease and its epidemiology, pathogenesis and treatment – and as a model system to study basic problems in cell and molecular biology. The treatment of each topic is by necessity not all-inclusive and is somewhat subjective, but that is what teaching is all about. We try to have many hyperlinks to relevant sites so that students can delve more deeply into any topic and to use original figures from research articles instead of the normal well digested pabulum in so many textbooks. Controversies are not avoided but are presented as an unavoidable and natural occurrence in the development of science.

And finally, again with the ultimate license of an online author, I included in the *T. cruzi* chapter a section on "The Case of Charles Darwin", describing his mysterious

illness, the etiology of which has become one of my favorite hobbies. I went to the trouble of obtaining Darwin's Death Certificate and a copy of the London Times coverage of his funeral. I just hope that none of my students actually take up my (partly) facetious offer to get me a piece of Charles for PCR diagnosis of Chagas Disease!

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