

## Biology 403 Problem Set #1.

### Chapter 1 Questions :

1. Where did HIV-1 and HIV-2 come from? How do we know?
2. See Figure 1.17. Why does HIV continuously evolve during the the “latent” phase of infection, which can last for years. In what sense does HIV stop evolving when CD4 T-cell counts drop? In what important way does it continue to evolve under natural selection?
3. List three reasons why HIV is almost invariably deadly to the host (in the absence of anti-retroviral drug therapy). Why has HIV not evolved reduced virulence?
4. List two reasons why an HIV vaccine is not an immediate prospect, based on understanding of the evolutionary biology of the HIV virus.