**Immunology**

**Exam 4 Study Guide**

* Review all chapters and Powerpoints
* Why is there not sustained immunity against some pathogens in the population (such as the cold or influenza)?
* What are the 4 steps to bacterial infection?
* What is the difference between primary pathogens and opportunistic pathogens?
* Who is most at risk for fungal infections?
* What antibody is involved in parasitic infections?
* What is the difference between passive and active immunity?
* Review vaccines and different methods for vaccinations. What does attenuated mean? What is a DNA vaccine? Why is developing a vaccine a difficult process?
* Why do some people choose not to vaccinate? What could this possibly lead to? What is herd immunity?
* What is immunodeficiency? What is the difference between primary and acquired immunodeficiency? Be familiar with the immunodeficencies we discussed. What are 3 treatment options?
* Cancer – be familiar with classification of cancers (where they originated from); what does malignant mean? Benign? Metastasis? What can cause malignant transformation? What are oncofetal genes?
* What are some immunotherapy techniques now used for cancer treatment?
* What is difference between in vivo and in vitro?
* Be familiar with techniques describe in experimental systems chapter (be familiar with figures)
* What is adoptive transfer?
* When would you use monoclonal versus polyclonal antibodies?
* Be able to describe an autoimmune disease. Understand the figures in the powerpoint dealing with Graves’ disease and myasthenia gravis.
* What is central tolerance?
* What is difference between organ specific autoimmune disease and a systemic autoimmune disease?
* What are the proposed mechanisms for induction of autoimmunity?
* Review the microtoxicity assay for HLA matching with organ donation.
* What is xenotransplantation?