**STUDY GUIDE FOR FEEDBACK MECHANISMS, CELL SIGNALING, ENDOCRINE, NERVOUS, IMMUNE SYSTEMS**

* Know steps in cell signaling and amplification of signal
* Be able to recognize names of endocrine glands
* Be able to interpret experimental data in a graph or chart and explain the results in the context of the systems we studied
* Be able to recognize and explain at least one example of both positive and negative feedback
* Know differences between steroid (lipid soluble) and non-steroid (water soluble) hormones and how they work
* What does the Na+/K+ do in the neuron and how does it do it?
* Understand what resting potential is and how it is formed (see last item) and threshold potential
* Given a diagram of an action potential, be able to label resting and threshold potentials, as well as areas of deporlarization, repolarization, and hyperpolarization
* Compare and contrast conduction of an action potential between a myelinated (saltatory conduction) and unmyelinated axon
* Function of synaptic vesicles
* Function of neurotransmitters and how they facilitate communication between neurons
* How are the nervous and endocrine systems related?
* Know all components of the non-specific immune defense, including inflammatory response and macrophages
* Know all components of the specific immune defense, including T-cells and B-cells
* Compare and contrast the following:
  + Primary and secondary immune response
  + Active and passive immunity
  + Naturally acquired and passively acquired immunity
* Why do we not have a vaccine for the cold; why do we need a new flu vaccine every year
* How do we produce millions of different antibodies during our lifetimes?
* Contrast humoral and cell mediated immunity
* What is an autoimmune disorder, and describe an example
* Be able to describe how the body regulates blood glucose levels and explain what happens in diabetes
* Using data shown in a graph or chart, explain how the environment may affect hormone levels
* Explain what allergies are in the context of the immune system
* Know what “immune compromised” means and give examples of people who might be immune compromised
* Explain how vaccines work