# Chapter 6- Metabolism

#### Learning Objectives:

* Energy and Metabolism *(BIO I: IV-1. Explain how chemical processes impact the cellular processes of life. V-5. Describe the process of energy transfer from its source (the sun) through biological systems. BIO II: IV-1. Explain how energy moves through an ecosystem. V-2. Describe the relationship between life forms and their environment and ecosystems.)*
* Enzymes *(BIO I: IV-2. Describe the enzymatic basis of the mechanisms that living organisms use to harvest energy.*
* ATP: Adenosine Triphosphate *(BIO I: IV-1. Explain how chemical processes impact the cellular processes of life.)*

**Project 1:**

Review figure 6.2 in Chapter 6 of the textbook as well as concepts in energy and metabolism (section 6.1) and potential and kinetic energy (section 6.2).

To complete this assignment, create your own detailed diagram/flow chart showing energy flow through a living system.

Part I: Be sure to include the following biotic/abiotic components and processes in your diagram to receive full credit: (a) the sun, (b) a producer (grass), a primary consumer-herbivore (rabbit), (c) a secondary consumer-carnivore (fox), (d) a decomposer (fungi), (e) photosynthesis, (f) cellular respiration and (g) decomposition.

Part II: On your completed diagram identify/incorporate two examples of kinetic energy and two examples of potential energy.

**Project 2:**

Review the “everyday CONNECTION- Drug discovery by looking for Inhibitors of Key Enzymes in Specific pathways” in Chapter 6 to gain an understanding of the role of enzyme inhibitors in development of pharmaceuticals. Using credible website-based sources research ACE (angiotensin-converting enzyme) inhibitors and answer the following questions. *Be sure to cite all sources of information.*

1. What is the primary function of angiotensin II in the body?
2. How do ACE inhibitors work? Be sure to focus on enzyme function and enzyme inhibition.
3. List several uses for these medications.

**Project 3:**

The function of ATP is often related to a rechargeable battery or currency. Develop an analogy that effectively helps to explain the role of ATP in energy transfer within the body. Share your analogy with a classmate. Identify the strengths and limitations of each analogy.