Investigation #3

**Comparing DNA Sequences to Understand Evolutionary Relationships with BLAST**

Pre-Lab

*The following questions and prompts should be completed in the lab section of your notebook.*

**Background:**

1. What is the significance of the Human Genome Project?
2. Why do you think the information found in the Human Genome Project is important to scientists?
3. What are the benefits of using Bioinformatics as a tool?

**Cladistics:**

1. What is a cladogram?
2. What information can a cladogram provide?
3. Looking at Figure 2 from the lab manual, which organisms have Lungs? What three structures foo all lizards possess? According to the cladogram, which structure – dry skin or hair – evolved first?
4. Why do you think modern cladograms rely heavily on genetic/molecular evidence as opposed to physical/anatomical evidence as was used in the past?
5. Construct a cladogram that depicts the evolutionary relationship among humans, chimpanzees, fruit flies, and mosses.

**The Investigations:**

1. Complete question 1 and question 2 parts A and B found in the lab manual under getting started on page S43 – S44.

**Online Activities:**

1. Visit the online activity websites for further information on evolution and cladistics.