**Discovery and the Scientific Method - Assignment Handout**

**Pre-Lab:** Follow the guidelines and steps for the activities as listed on the Lab Website and insert your work below for the appropriate sections.Read the lab unit first.

**Scientific Method:**

* View the, *How Science Works* and *Experimental Design* interactives.
* View the *Experimental Design Interactive*. Use the arrow buttons in the upper left to review the Steps of the Scientific Method and see how this relates to the Keystone Species Example.

Questions relating to the Keystone Species example –

1. What did Robert Paine observe about biodiversity in intertidal habitats?
2. What did Paine’s observations lead him to hypothesize?
3. How did he test his hypothesis?
4. 4. At the end of a year, was he able to support or refute his hypothesis?

**Identifying Experimental Variables Lab Manual (Appendix D p. 222 may be helpful-see Lab website Resources page)**

Now let’s look more in depth at the Experimental Design of a published research experiment studying color preference in Bed Bugs.

Read the Abstract & Materials and Methods sections of the linked Journal of Medical Entomology Bed Bug Study.

**Identify the following variables found in the Materials and Methods section:**

Control Group –

Experimental/Treatment Group –

Controlled variables (list at least 2) –

Independent variable *–*

Dependent variable –

Use of replication for the Two-Choice Assays –

(i.e., repetition of experimental/treatment measurements for the purpose of making comparisons)

**Experimental Design Project:**

This is a semester-long project that you will be conducting. The first step is to identify a topic and some ideas for your experiment. See the guidelines for the project.

*Include your initial topic ideas below:*