Biol 1413: General Zoology
Extra Credit Projects

Ziser, 2008

Any or all of the following projects can be completed to earn up to a **maximum of 25 extra credit points**. The points that you earn will be added to your final point total for the course. The number of extra credit points earned (up to 25) depends on the amount of work that you put into the project, as well as your creativity and neatness and organization. You are not likely to get much extra credit if you just repeat the information given in lecture or in your text book. Try to dig up some new stuff; look around, there's plenty of information out there. When citing references for your information be sure to give a *complete* reference including: author, year of publication, name of book or article, journal, volume, page numbers, or the complete web address.

Typically, a project will earn you up to **4 or 5 points** extra credit (that's equivalent to 1% added to your final % Grade for each project; 5% if you get 25 points worth). But you could earn a little more if it is *outstanding* compared to similar projects turned in by other students, or you could earn fewer points if you did not put too much effort into the project.

1. How Many Species. Select **ten** phyla or classes OTHER THAN VERTEBRATE CLASSES and find out the total number of living species for that group in the world; the United States; Texas; and the number of fossil forms, cite complete references for your data.

2. Invertebrate Hormones. Make a table of 15 invertebrate hormones and include the information listed below for each hormone and your reference for each:

- name of hormone
- invertebrate group (phylum or class, etc) that use it
- organ that produces the hormone
- chemical structure or kind (eg is it a steroid, a protein, etc)
- function(s) of the hormone
- other comments or interesting points

cite complete references for your information.

3. Sense Organs. Make a table or a catalogue of 1invertebrate sense organs. For each kind of sense organ include:

- a drawing or xerox of the organ showing its structure
- animal group(s) (eg phylum, class, order, etc) in which it is common
- what kind of information it processes (eg visual, chemical, temperature, etc)
- range (if applicable, eg. if light, what wavelengths; if sound, what frequencies

cite complete references for your information

4. Comparative Physiology. Select one of the systems that we are describing in lecture and lab (integumentary, support, muscular, circulatory, digestive, respiratory, reproductive, nervous, endocrine, immune, or excretory system) and describe its structure and function in

5 different phyla of organisms. At least one of the phyla has to be one that is not discussed in detail in your textbook (ie, one of the minor phyla). Discuss the advantages and disadvantages of how each phylum solves the same phyiological problem.

5. Adaptations to Parasitism. Describe at least ten major adaptations to parasitism seen in various animals. Describe the adaptation, tell how it helps the animal to survive as a parasite and the disadvantages such an adaptations brings with it. Provide references for your information.

6. Relics of Human Evolution. Several anatomical features of humans are fairly useless to us now but were once useful to our evolutionary ancestors. Describe as many of these features as you can find, describe how they were once useful to our ancestors and why they are no longer useful to us any longer. Provide references for your information

7. Bioluminescence. Give several examples of bioluminescence in the animal kingdom (**Not** in bacteria or protists or plants) and describe each example and how it is used by the animal. Provide references for the information

8. Locomotion. Select a major type of locomotion (flight, swimming, burrowing, climbing, gliding, or jumping) and describe how animals in the major phyla (those with more than 5000 living species; the list I will give you) achieve this type of locomotion. Compare and contrast the efficiencies of each groups method of movement. Provide references for your information.

9. Animal Behaviors. Select a major animal behavior such as courtship, territoriality, navigation/migration, parental behavior, or communication and describe how animals in 10 different phyla carry out this behavior. Provide references for your information.

10. Extinct Animals. Select a class of animals that is now completely extinct. Describe the structure and function of the animal, and its ecology and position in the fossil record. Provide references for your information.