**Introduction**

In this laboratory exercise, the anatomy of the rat will be examined in some detail. You may have dissected other things in your days of biology, and you may recognize and remember structures that you learned during that dissection. In this class, a much more detailed look at mammalian anatomy will be conducted. You will get to know and love your preserved rat over the course of this dissection.

**The classification of the Rat (*Rattus norvegicus*)**

Kingdom Animalia

..Phylum Chordata (having a spinal chord)

...Subphylum Vertebrata

....Class Mammalia

.....Order Rodentia

......Family Muridae

.......Genus Rattus

........Species norvegicus

The lab books and diagrams available to you are supplemental. You are expected to follow the directions in this lab. You will be held responsible for being able to locate all the structures. You are expected to have exhausted all possibilities in attempting to located structures before asking for assistance. Using the available material, instructions and diagrams, most students will be able to locate many structures for themselves. If after an earnest effort, you cannot find a structure, ask for assistance.

Remember, this is a learning experience; it is expected to discuss and observe other students' specimens. Compare you dissection with others, for animals often differ, be sure to look at animals of the opposite sex, you will be responsible for both sexes on the lab practical.

The specimen you will receive is a preserved double-injected specimen. Double injected refers to the arteries being filled with a red latex, and the veins being filled with blue latex. You will notice various incisions on the external surface of the rat where the latex was injected.

The rat is a vertebrate, which means that many aspects of its structural organization are common with all other vertebrates, including man. The similarity of structures among related organisms shows evidence of common ancestry. In a way, studying the rat is like studying a human. As the leading theme of this lab, ask yourself: for every structure observed in the rat, there is an equivalent structure in your own body - what is the structure and where is it located.

As the second leading theme, pay particular attention to the relationships among organs and groups of organs. Structural parts are not "just there" in random locations. Their specific layout within the body contributes to making certain functions possible. Therefore, for every structure seen, you should determine the following:

* What organ system it belongs to
* How it is connected with other components
* Its general function or Its specific function (if applicable)

**Dissection**

Dissecting tools will be used to open the body cavity of the rat and observe the structures. Keep in mind that dissecting does not mean "to cut up"; in fact, it means "to expose to view". Careful dissecting techniques will be needed to observe all the structures and their connections to other structures. You will not need to use a scalpel. Contrary to popular belief, a scalpel is not the best tool for dissection. Scissors serve better because the point of the scissors can be pointed upwards to prevent damaging organs underneath. Always raise structures to be cut with your forceps before cutting, so that you can see exactly what is underneath and where the incision should be made. Never cut more than is absolutely necessary to expose a part.

**Grading**

* Class Participation (serious approach, proper cleanup and lab safety)
* Quizzes and homework assignments
* Lab Practical Exam (at the end of lab)