Introduction to the Laboratory

The study of gross anatomy is the foundation for much, if not all, of the medical studies to follow. The science and practice of medicine rely on understanding the individual as an integrated whole.

Gross anatomy is the study of structures, their relationships, and their functions. A useful knowledge of the structure of the body cannot be obtained from lectures, books and software alone, although these are essential guides. The student must obtain first-hand information from seeing and handling actual structures of the body and appreciating their interrelations. This is done by dissection, the art of removing surface coverings exposing body parts and separating them from one another. Dissection requires careful, accurate and painstaking work, but it is the best method of learning. Once structures are exposed in the body, their identity must be verified by the aid of textbook or atlas figures. Textbooks and atlases must be used in the dissection laboratory constantly as an aid, but not as a substitute for the examination of the actual specimen. Observation of the structures in their proper relationships is more important than mere memorization of their names.

Students should bear in mind that although all bodies have the same gross architectural plan, no two bodies are identical. Minor variations, as well as greater anomalies, should always be anticipated and the instructor notified when they are found. The student should concentrate on normal anatomy in this course.

The term "structure", as used in gross anatomy, has a loose definition and means any named entity -- a whole bone -- or any of its parts, depressions, holes, ridges, etc.; a muscle; a vessel; a nerve; a sheet of tissue; a triangle formed by muscles; a potential space or hollow; a band of fibers; etc. As you encounter and identify structures in the course of dissection, you are expected to know certain facts about these structures.

Common structures and the information that you are expected to know about them are listed below.

- **Bones:**
  - Borders, surfaces, angles, processes, fossae, foramina
  - Articular surface contacts
  - Areas of specific muscle attachments
- **Muscles:**
  - Location (position)
  - Attachments (origin and insertion in general)
  - Function
  - Innervation (nerve supply)
Blood supply (chief supply and possible collateral supply)
- Relations -- to other muscles, triangles, vessels and nerves

**Arteries:**
- Origin
- Named branches
- Major anatomoses (collateral circulation)
- Relations to other structures
- Major structures they supply

**Veins:**
- Tributary to what vein?
- Named tributaries
- Relations to other structures
- Major structures and regions they drain

**Nerves:**
- Immediate origin -- from another named nerve, nerve trunk, spinal nerve
- Named branches
- Course -- contacts and relations to other structures
- Nerve components -- i.e., the functional types of nerve
- Structures they innervate

**Regional Triangles:**
- Margins (orient as to lateral, medial, inferior, superior)
- Roofs and floors
- Contents
- Relations to other structures
- Possible significance in surgery or physical diagnosis

**Joints:**
- Bones forming joint
- Capsule, associated ligaments
- Synovial membrane, extent and associated bursae
- Articular discs and internal ligaments
- Muscles strengthening joint
- Types of joints

**Viscera:**
- Location, shape, size
- Relationships and contacts
- Blood and nerve supply, lymph drainage
- Parts, ducts, coats, etc.
- Function, secretions if any
- Surface projections for internal localization

It should be stressed that the information about structures is cumulative. Complete information about a particular structure may not always be gleaned from the first encounter with the structure during dissection. For instance, the subclavian artery is encountered early in the dissection, but some of its branches are not dissected until later. The student should learn what information about a structure is pertinent to the dissection at the particular time, add to this information as the dissection proceeds, and integrate and synthesize the new information with the old.