

# Biology 47 - LABORATORY PROCEDURES AND SAFETY

It is important to develop safe laboratory habits when working with reagents (chemicals), fluids, preserved specimens, and equipment which can be potentially hazardous. In most instances the general practice of using common sense can prevent any possible problems. Listed below are some simple procedures which should be followed in *any laboratory setting*. Becoming familiar with them now and making them habits will protect you and others in the lab from potential injury and prepare you for the future.

## Safe Laboratory Procedures :

1. Always read the laboratory exercises completely BEFORE beginning. Familiarize yourself as to the activities you will be asked to perform. This will enable you to dress appropriately for the lab as well as coordinate the laboratory activities.
2. Familiarize yourself with your surroundings : Location of safety equipment, waste containers, sharps containers, laboratory instruments, and reagents.
3. Chemical Hazards : Assume that ALL reagents and specimens are a potential hazard. Animal and cadaver specimens are preserved in a chemical mixture which can be hazardous if it comes in contact with your body tissue.
  - ⇒ When working with preserved specimens ALWAYS use gloves. The use of safety glasses and lab coats are HIGHLY recommended.
  - ⇒ You may choose to purchase a “dust” mask from a hardware store to reduce the smell and exposure to the preservatives used on animal or cadaver material
  - ⇒ If your skin comes in contact with preservative, wash the area with soap and water.
  - ⇒ If preservative comes in contact with your eyes, nose or mouth, rinse the affected area with copious amounts of water (There is an eye wash at the back sink).
  - ★ Contact lens wearers : Contact lenses tend to absorb the chemicals in the tissue preservative. If you use contact lenses it is recommended that you either : 1. Wear glasses instead, 2. Use safety glasses, or 3. Use disposable contact lenses.
4. DO NOT EAT, DRINK OR SMOKE IN LAB. You may step out of lab at any appropriate time to eat or drink.
5. Dress appropriately. When doing dissections or working with preserved materials you should wear closed toed shoes, clothing which can be soiled, and hair accessories to keep hair out of your working field. Lab coats and safety glasses are not required but are highly recommended. Lab coats can be purchased in the bookstore (either \$27 or \$8) or may be borrowed during the class on a first come basis.
6. Maintain a clean working environment. Clean & disinfect all working areas at the beginning and end of ALL labs with the Pinesol table wash supplied. Clean & put away all specimens and equipment in its appropriate place.

Every student is responsible for maintaining a clean work space. The tables are to be disinfected at the conclusion of each lab. All dissecting materials are to be washed and DRIED following use. All materials and specimens are to be returned in their original condition.
7. Waste Disposal : Always dispose of waste correctly.
  - a. Biohazardous materials (preserved *animal* tissue) : Dispose of all preserved animal tissue in the labeled biohazard cans. Soiled paper and gloves are to be disposed of in the waste containers – NOT the Biohazardous containers.

- b. Human Cadaver Material : Human material is not to be disposed of in the biohazard containers, but will be collected in individual cadaver specific collection containers.
  - c. Scalpels: Return sharp scalpels to the glass scalpel container labeled “Sharp Scalpels”. Dull scalpels are to be disposed of in the glass container labeled “dull Scalpels”. Broken scalpels are to be disposed of in the red plastic “sharps container”.
  - d. All paper products are to be disposed of in lab trash cans.
  - e. Large amounts of cat preservative should be disposed of in labeled disposal container in the lab fume hood. Small amounts of fluid can be flushed with water down the sink.
8. Report all spills and accidents to your instructor (no matter how minor).
  9. Horseplay, pranks, and other acts of mischief are dangerous and ABSOLUTELY prohibited.
  10. IF YOU DON'T KNOW ASK!
  11. CLEAN & disinfect your work area BEFORE leaving lab.
  12. WASH YOUR HANDS BEFORE LEAVING LAB

### **Cadavers :**

The cadavers which will be used during this course were originally acquired through the Northern California State Willed Body Program. Each cadaver is donated by the deceased individual of his or her own will. The cadavers are given as gifts for the furthering of student preparation in the field of anatomy; none of the bodies are sold. The UCSF Department of Anatomy administers the procurement and preparation of the cadavers. The costs incurred by UCSF for the procurement, preparation, and administrative handling are passed on to the institutions which will be using them for instructional purposes. The final disposition of the cadavers and ALL human anatomical material is the sole responsibility of the institution using the individual. All final arrangements are made through licensed mortuaries or crematories, regulated by the Health and Safety Code of the State of California).

The very special individuals which have given their bodies so that students could have the opportunity to study anatomy using human bodies deserve our utmost respect and gratitude. Their gift goes beyond the simple act of serving the student's educational needs, but hopefully through their selflessness, each student will be able to help many others with their knowledge. For respect of these individual and their families when referring to the cadavers, ONLY their given names will be used (first name only). The copies of the death certificates can be made available to the students upon request, departing important, relevant information of cause of death, age, & previous medical history. No unauthorized viewing or photography will not be allowed.

### **Cadaver Dissection, Use & Handling :**

All human material to be viewed during the semester has been dissected and prepared for student examination. Biology 47 students will not dissect any human materials during this semester, but may be eligible for the Human Cadaver Dissection course – Biology 50. Each cadaver has been fixed with embalming solution for at least 6 months. The cadavers are therefore very heavy (with fluid) and may have strong embalming fluid odor. The embalming fluid does contain formalin, but only a small percent (< 0.65%) becomes aromatic). If you feel that the formalin is irritating your eyes, nasal passageways or throat move yourself into a well ventilated environment (preferably outside) and please notify me immediately. Appropriate accommodations can them be made.

Cadaver tissue recently exposed and dissected has a greater degree of embalming fluid saturating the tissue. Recently exposed tissue will therefore have a stronger odor and a greater potential to irritate your mucosal membranes and eyes. Since the cadavers you will be using have recently been dissected, use the exhaust fans over both doors when ever tissue is exposed. In order to

minimize the permeation of the building with the embalming fluid odor the inside doors will remain locked.

The greatest damage to cadaver material is the irreversible desiccation (drying out) of the tissue. In order to minimize this desiccation, *any time* the tissue is exposed, it must be continually saturated with a “wetting solution. Wetting solution is a Phenol / water / glycerol mixture designed to minimize the desiccation of the tissue. The wetting solution will be available in squeeze bottles and should be used to saturate the tissue during any viewing period, as well as immediately before the tissue is put away. When putting the tissue away following viewing, the tissue must be saturated with wetting solution and wrapped in cloth. The cadaver bags should be sealed as best as possible and the cadaver should be returned to the locked SM22C preparatory room.

### **CAMPUS SAFETY / EMERGENCY PROCEDURES**

**Earthquake** : “Duck, Cover and Hold” : Protect yourselves by taking cover under the laboratory tables. Do not exit the building until the tremors have ceased. Following an earthquake, students will meet in PARKING LOT #2 : BEFORE leaving campus. (This will enable the instructor to know if anyone is missing).

**Fire** : “Evacuate, alert, & call” : Evacuate the immediate area, notify the instructor, and sound alarm. When fire alarm sounds, students are to meet in outside parking lot #2.

**Evacuation**\_: From the Science and Math Building, assemble in parking lot #2. Remain until the instructor has a “head count”. Do not leave campus until instructed, doing so may interfere with safety procedures or emergency vehicles.

Nearest emergency phone :	Any faculty office phone (dial 9- 911)
Fire Extinguisher :	Under the instructor’s front desk
Fire Alarm :	In the inside hallway adjacent to classroom
Public Phone :	Top of the driveway, nearest to parking lot 2

### **WVC PHONE NUMBERS**

<b>Life Threatening Emergency :</b>	9-911
<b>District Police</b>	9-299-2311
<b>Student Health Services</b>	x2027
Mon. Wed Thurs. : 8:30am - 4:30pm	x2222
Tues. 8:30-7:00 & Friday 8:30-4:00	
<b>Extended Opportunity Program &amp; Services (EOP&amp;S)</b>	x2023
Mon. - Thurs. 3:00pm - 10:00pm	
<b>Counseling Department</b>	x2009
Mon. - Thurs. : 8:30am - 7:00pm	
Fri. : 9:00am - 4:00pm	
<b>Disability &amp; Educational Support Services (DESP)</b>	x2010
Mon. Wed, Thurs. : 8:30am - 4:30pm	
Tues. 8:30-6:00 & Friday 8:30-12:00	
<b>Tutorial Services</b>	x2038
Mon. - Thurs. : 9:00am - 7:00pm	
Fri. : 9:00am - 1:00pm (Drop in only)	