CHEMISTRY DEPARTMENT STUDENT RESEARCH GUIDELINES

1. ATTIRE
   a. Approved safety goggles must be worn at all times.
   b. No open-toed shoes, sandals, or clogs. Feet must be completely covered, including heels. Socks are recommended.
   c. Arms should be covered up to the elbow. No tank tops or muscle shirts.
   d. Torso area should be completely covered.
   e. Long hair should be tied back.
   f. Long pants that come down to the ankles must be worn. No shorts, skirts, or kilts.

2. CHEMICAL INVENTORY
   a. New chemicals – All chemicals received by the department should be opened and inventoried by the Laboratory Manager. An inventory bar code and either a green or yellow label tape containing the room #, storage category, and date received is affixed to the container.
   b. Empty chemical bottles – Please mark the label "empty" and return to the chemistry stockroom. Place the empty bottle in the designated bin by the sink.
   c. Movement of chemicals from one room to another - Always use a secondary container when moving a chemical from one room to another. Do not carry chemicals through the study areas located between the research labs. When finished using the chemical, please return it to the original lab. NOTE: If the chemical will remain in the laboratory for more than a week, please notify the Laboratory Manager with the name of the chemical, original room location, the new room location, and the size container.
   d. Peroxide forming chemicals (i.e. ether, THF) - react with oxygen to form shock-sensitive explosive peroxide crystals. ANY NEW BOTTLES must be dated with the open date - "Opened 1/21/09" for example.

3. EYEWEAR: Safety goggles must be worn at all times in ALL laboratories in the Chemistry Department. No exceptions!!! You only have one pair of eyes.

4. EMERGENCY PROCEDURES: Each student should be aware of the location of the safety shower, eyewashes, fire extinguisher in the laboratory, and nearest phone. In addition, each student should be familiar with the Emergency Action Plan in the event of an incident in the laboratory. A copy of the plan is located in the laboratory or on the EH&S webpage.

5. FUME HOODS: In order for the fume hoods to work efficiently, please keep all doors and windows closed to the lab at all times. **The doors between the interaction areas and the laboratory must remain closed at all times.** Do not change any settings on the fume hood monitor alarms. If your alarm is sounding, there is a problem with the hood. Please contact your Research Advisor or Laboratory Manager immediately for assistance.

6. HAZARDOUS WASTE MANAGEMENT:
   a. Hazardous Waste labels are located in each research laboratory, on the EH&S webpage, or the chemistry stockroom.
   b. **Full name of the chemicals** (no chemical formulas please) in the waste bottle must be listed on the label along with the approximate amount of each chemical.
   c. Date the bottle upon the first addition of waste to the bottle.
   d. Room number and your name must be on the label (in case there are questions about the labeling).
   e. Waste bottles must be placed in the blue/gray "satellite accumulation" dishpans located in each laboratory's hood and labeled as "Hazardous waste". PLEASE DO NOT USE THESE DISHPANS FOR ANYTHING ELSE!
   f. Leave a 2" space between the waste level and the top of the container. Do not overfill.
   g. Always keep the lid on the waste container unless adding waste to the container.
   h. On the "Inventory of Hazardous Waste" sheet located on the EHS webpage, enter the appropriate information. Please note that "amount" is the size bottle, not the amount that is actually in the bottle. Try to use an appropriate-sized container for the amount of waste generated. The college pays for the size of the bottle.

7. HAZARDS: Hazard information of all reagents should be available in the laboratory. Always read the safety data sheets and the labels of the chemicals that you will be using prior to the start of the experiment. Know how to respond should you spill the chemical or get it on your skin. Check the manufacturer's webpage or the college chemical inventory system, Chimera, for safety data sheets. If unsure of the hazards, ask your advisor/mentor.

8. HOUSEKEEPING: Keep your lab space neat and clean in order to minimize the potential for injury and/or accident.
   a. Always put chemicals, glassware and other equipment away when finished using them.
   b. Avoid leaving syringes/needles lying on the bench top or in the hood. You or another student could be stuck by it.

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c. Avoid leaving mercury thermometers lying freely on the bench top or in the hood. Mercury is a hazardous chemical that should not go down the drain and is challenging to clean up from the gray floors.
d. Beakers/Erlenmeyer flasks covered with parafilm is not an acceptable container for storage of chemical solutions or hazardous wastes. These containers tip over easy in the refrigerators and make a mess. Use containers with tight fighting, screw-capped lids for both chemical solutions and hazardous waste collection.

9. LABELING: Label all reagents with chemical NAMES (in words), not formulas only, and the hazards. Pictograms are available from the Chemistry Lab Manager.

10. LABORATORY HOURS: The Chemistry Department does not permit any student to work in the laboratory "after hours" – before 8am and after 5pm. Your professor must be in the building or arrangements must be made to be under the supervision of another Chemistry Department professor. Campus Safety will not allow anyone into the laboratory. This is for your safety and the security of the chemicals and instruments located in the laboratories.

11. LABORATORY DOOR SAFETY INFORMATION LABEL: Each research laboratory must post an information card containing the room number, the names, campus addresses, and phone numbers of all the student researchers, the faculty advisor name, and the hazards of the chemicals used in the room. Emergency phone numbers must also be included on the card. These labels must be placed on the door of each laboratory and can be downloaded from the EH&S webpage or obtained from the Chemistry Laboratory Manager.

12. MERCURY THERMOMETER BREAKAGE/SPILLS:
    a. Close off the area of the spill – do not let anyone walk in the area of the spill.
    b. Obtain a mercury spill clean-up kit from the stockroom.
    c. Receive instructions from your professor or laboratory manager to properly clean up the spill.
        a. Wear safety goggles and gloves.
        b. Broken thermometer glass not containing mercury may be placed in the broken glass boxes located in the lab.
        c. Broken thermometers containing mercury may be placed in a container and taken to the stockroom for proper disposal.
        d. Sprinkle the special absorbent from the outside of the spill into the center.
        e. Placed the spilled material into the waste container in the kit.
        f. Return the kit to the stockroom.

13. MINOR INCIDENTS:
    a. CUTS – flush the cut with running water. Bandages are available in the Chemistry Stockroom – see the Laboratory Manager for assistance.
    b. BURNS – soak burn, if possible, in cool water for 5 minutes. If the burn requires further treatment, go to the Wellness and Counseling Center.

14. SMALL CHEMICAL SPILLS: NOTIFY YOUR PROFESSOR.
    a. Determine if the chemical is an acid or base.
    b. Always wear appropriate PPE (Personal Protective Equipment) including safety goggles and gloves.
    c. For acids, neutralize with sodium bicarbonate available in the stockroom.
    d. For bases, use absorbent located with the spill kits in the lab.
    e. After neutralization, use a dustpan and brush to clean up. Place in the red trashcan in the lab for disposal.

15. LARGER CHEMICAL SPILLS: NOTIFY THE PROFESSOR.
    a. Block off the area of the spill.
    b. Evacuate the lab if deemed necessary.
    c. Notify your professor immediately.

16. OVERNIGHT REACTIONS LABEL: All reactions left to run overnight or for an extended period of time unattended must be labeled with a balanced chemical reaction, COMPLETE CHEMICAL NAMES, a contact name, and phone number. "Reaction in Progress" label should be completed and taped to the hood. Forms are available on the EH&S webpage, from your advisor, or in your research lab.

I have read and understand the Safety Guidelines for Research Students stated in this document, and will adhere to these guidelines.

Signed: _____ Date: _____

Printed Name: _____

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