Reed College Psychology Safety Manual

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1.0 Purpose and Scope

This manual serves as a resource document for the department of Psychology in compliance with Reed College Environmental Health and Safety and various state and federal organizations (Environmental, Occupational Health, and Safety).

Laboratories must develop written manuals which include specialized safety procedures, respective to discipline, for all facets of laboratory activity.

This manual provides general guidelines and basic rules within the Psychology Department to:

- Encourage awareness of the risks in doing laboratory procedures
- Promote safe and best practices in the laboratory, specifically wet laboratories. However, work conducted with human subjects may present risks not solely found in wet laboratory environments.
    - Wet laboratories are defined as spaces designated for work with hazardous chemicals, biological agents, and/or animals/tissues.
- Protect the wellness and health of students, instructors, and laboratory personnel

2.0 Instructor Compliance and Enforcement

- It is the responsibility of the instructor to ensure the safety of each person working or volunteering in the laboratory.
- Instructors must know the laboratory safety guidelines and procedures applicable to their work in the Psychology Department.
- Instructors must abide by all safety policies and procedures particular to their discipline.
- At the start of each semester, instructors must provide and review the safety policies associated with their particular laboratory.
    - Provide demonstration/ explanation about the location and use of safety equipment and proper use of laboratory items.
    - Review emergency procedures related to a fire emergency, earthquake, accidents/injuries, etc.
- Instructors will ensure compliance with the approved safety policies with all students, volunteers or other people who enter their laboratory.
- Instructors will document and report any lab-related incident to the laboratory personnel, EHS, or the department chair.
- The Psychology Department Chair will be responsible for addressing any situation involving non-compliant students, staff, or faculty.
- The Psychology Department Chair will be responsible for enforcing consequences in cases of non-compliance in relation to the approved safety policies.

3.0 Personal Protection Requirements

- To protect yourself from possible injury, wear safety goggles when instructed. Contact lenses may be worn in combination with eye protection (goggles).
- Tie back long hair when working with hazardous materials or other lab equipment.
- Remove or tie back any loose articles of clothing or jewelry including scarves & bulky shirts or jackets prior to working with any machinery or devices that pose a catch hazard.
- Gloves are required whenever there is the potential for contact with hazardous materials, and should never be reused. Do not attempt to wash disposable gloves. Change them when they are dirty, contaminated or ripped. Dispose of properly. Cut resistant gloves may be needed when handling live animal subjects. These can be worn under disposable gloves and may be reused.
- Shoes must have closed toes and closed backs when working in the colony wing or working in the presence of hazardous chemicals. Do not wear sandals or open toed shoes in the laboratory.

4.0 First Aid

- Report all accidents, spills or broken glassware & equipment, no matter how minor, to your instructor immediately.
- Know location of safety equipment & proper use. Complete and submit appropriate incident report form for each incident that occurs during lab time.
- If a student is injured and requires more medical attention than simple first aid, they should be examined at the Health and Counseling Center (HCC) during business hours (M-F 9-5). Injuries occurring after hours should be reported to Community Safety.
- More information on animal caused injuries is available in section 9.2.3.

5.0 General Rules and Standard Laboratory Practices

- Never enter the laboratory without the presence of the laboratory instructor, laboratory staff, or other laboratory personnel who have attended safety training.
- Conduct yourself in a responsible manner at all times in the laboratory. Never leave your lab activity unattended unless authorized by your instructor.
- Be sure you understand all procedures in any lab investigation and possible hazards associated with it.
- Read ALL directions for an investigation several times, and follow directions EXACTLY as they are written. Ask questions if you are not sure how to proceed.
- Never perform unauthorized experiments.
- Never handle equipment or animal subjects unless you have specific permission.
- If accidents/injuries/spills occur, notify your instructor immediately.
- No eating, drinking, smoking, applying make-up in labs containing hazardous chemicals, biological agents, and/or animals/tissues. Food and drink is to be left outside the lab. This includes capped bottled water and soft drinks.

- Notify your instructor of any medical conditions you may have, such as pregnancy, allergies, asthma, or epilepsy before working within a wet lab. It is recommended that you discuss your condition with your physician for guidance and monitoring.
- All operations in which noxious or poisonous gasses are used or produced must be carried out in a fume hood.
- Broken glassware should be swept up with a broom and dust pan and placed in the “Broken Glass Box”. Never place broken glass in the regular garbage can.
- Water should not be used or present near electrical sources such as computers and equipment. Use caution when working around electricity.
- Vivarium is for authorized personnel use only. Do not enter unless authorized to do so.
- Be sure to clean your area thoroughly 5-10 minutes before the end of the class and keep the lab space clean for the next class period. Wipe down the counters, put away all equipment in clean, cool & dry condition. Wash your hands before leaving the lab area.
- The location of exits, safety showers, eye wash, fire extinguishers and the nearest telephone (emergency) should be ascertained before beginning work.

6.0 Chemical and Biological Safety

- Chemicals must be mixed only following the experimental procedure and only when the instructor is present or has granted permission.
- Never touch, taste, or smell a chemical unless instructed to do so by your instructor.
- Keep your hands away from your face when working with chemicals or biological materials.
- If fumes are potentially dangerous, conduct the procedure in a well-ventilated fume hood.
- Notify your instructor IMMEDIATELY if chemicals are spilled.
- Dispose of all chemicals as directed by your instructor.
- Dispose of biological waste in the appropriate disposal container. Consult your instructor or EHS if unsure of how to proceed.
- Always use the pipettes provided with reagent bottles to avoid contamination of reagents.
- Use extra caution when working with acids or bases.
- When diluting acids, ALWAYS pour acid into water to dissipate the heat produced. NEVER pour water into a concentrated acid.
- Become familiar with safety precautions for each chemical to be used in an experiment. Review the SDS. Know where eye-wash stations and fire safety equipment are located, as well as proper use.
- Always label your container with full chemical name(s), hazard class, and contact information.
- Store waste properly with a closed lid and in a fully labeled container. Bring full containers to Chemistry 211 for disposal.

7.0 Using Glassware

- Never force glass tubing into a rubber stopper. Use a lubricant such as glycerin to make the glass slide in easier.
- Test glassware to be sure it is not hot before picking it up.
- Never use broken or chipped glassware. If glassware breaks, notify your instructor and dispose of the glassware in the proper broken glass container.
- Never eat or drink from laboratory glassware. Do not eat or drink in the laboratory.
- Clean glassware thoroughly before putting it away, and wet glassware should be put into the strainers to dry.

8.0 Using Sharp Instruments

- Never cut material toward you; cut away from you.
- Notify your instructor immediately if you cut yourself or receive a cut.
- Dispose of all chemically and/or biologically contaminated sharps in a red sharps container. If using a syringe, the entire apparatus (both needle and plunger) should be disposed of in the sharps container.

9.0 Working With Vertebrate Animals

The Psychology Department may conduct research with live vertebrate animal subjects or tissues. Working with animals poses unique safety risks that differ from other laboratories at Reed College. Animal subjects are to be treated with respect and handled in a professional manner, and care should be taken to protect both the subject and the researchers from unnecessary harm.

9.1 Responsibilities

9.1.1 IACUC

The Institution Animal Care and Use Committee (IACUC) oversees how live animal research subjects are utilized and housed at Reed College. Any research using live animal subjects must be approved by the IACUC.

9.1.2 Faculty and Academic Course Instructors

Instructors of any courses that involve contact with animals, or use animals in a research setting with student workers, must inform students of the risks associated with the animal contact, the need to follow safety protocols, and this written program. Instructors will review this policy annually or whenever they assign new or modified tasks or use new technologies. They will provide students with personal protective equipment, as needed. In the event of an incident involving a student, instructors must contact the Health and Counseling Center (HCC).

9.1.3 Affected Students

All students who are exposed to animals in any of their coursework or research settings will comply with procedures established by their instructors in accordance with safety protocols and this program to minimize the risk of exposure. They must fulfill all training requirements. They must use universal precautions at all times. They must inform their instructors immediately of any incident.

9.2 Procedures

9.2.1 Occupational Health Service Notification

Supervisors, faculty, and instructors must ensure that individuals who have contact with or are exposed to live vertebrate animals or tissues in research or teaching settings, receive information about the risks associated with animal research. Employees may be enrolled in the Reed College Occupational Health Program. For more information contact EHS.

9.2.2 Training

- Supervisors, faculty, and instructors of individuals who may be exposed to living animal subjects or tissues must provide training and information about zoonoses, allergies, physical injuries, sharps use, and experimental hazards associated with animal subjects.
- The training should also cover personal hygiene and other considerations, such as precautions to be taken by individuals in their child-bearing years.
- Hazards, including animal bites and allergies, and methods for preventing and treating them must be included in the training.

9.2.3 Treatment of Illness or Injury

- In the event of a life threatening emergency call Community Safety (503-788-6666) or seek immediate medical attention. Individuals who suffer illness or injury are responsible for reporting the incident to their immediate supervisor as soon as possible.
- Individuals must notify their supervisor of suspected zoonosis or any illness accompanied by diarrhea, numbness, dizziness, stiff neck or joints, cough, or fever. If the disease is thought to be work-related, it must be reported immediately to HR and EHS.
- Injured students should report to the HCC. Staff may recommend further medical intervention.
- Injured staff and faculty must report to Kaiser Permanente or other specified medical care facilities for treatment or referral of an occupational injury.
- Bites and scratches must be flushed immediately with water and then scrubbed with soap and water prior to reporting for treatment. Specific departmental protocols must be followed based on the animal species and source of the injury.
- Supervisors must report work-related illness or injury to HR and EHS within 24 hours.

9.3 Animal Specific Information

9.3.1 Rats

Potential Zoonotic Diseases
Colony-born rodents are generally docile, but may occasionally inflict injury such as a bite or scratch. Larger laboratory rodents such as rats and guinea pigs can inflict particularly painful bites. While rodents may carry organisms that may be potentially infectious to humans, the most common health risk to individuals working with rodents is the development of an allergy. If you have an immune-compromising medical condition or you are taking medications that impair your immune system (steroids, immunosuppressive drugs, or chemotherapy) you may be at higher risk for contracting a rodent-borne disease and should consult your physician. The following is a partial list of known and potential rat or mouse zoonoses.

Lymphocytic choriomeningitis
Lymphocytic choriomeningitis (LCM) is an arenavirus commonly associated with house mice. LCM is rare in laboratory animal facilities, more common in the wild. Transmission to humans is through contact with tissues including tumor, feces, urine, or aerosolization of any one of these. Disease in humans is generally flu-like symptoms that range from mild to severe. Pregnant individuals are at increased risk of spontaneous abortion, particularly in their first trimester.

Leptospirosis
A bacterium found in many animals, including laboratory rodents. *Leptospires* are shed in the urine of infected animals. Direct contact with urine or tissues via skin abrasions or contact with mucous membranes has been reported. Transmission can also occur through inhalation of infectious droplet aerosols and by ingestion, as well as with water contaminated by urine from infected animals contacting abraded skin. Disease in humans is flu-like symptoms generally mild to severe.

Rat Bite Fever
Rat Bite Fever is caused by the bite of a rat infected with *Streptobacillus moniliformis* or *Spirillum minus*. Rats may be asymptomatic carriers of these bacteria, which are considered normal flora in the pharynx of rats. Transmission is via the bite of an infected rat, or contact with urine or mucus secretions. Symptoms of disease in humans include fever, lymphadenopathy, swelling at the site of the wound, and may cause arthritis in untreated humans. Incubation period is generally 1-3 days but may be up to 6 weeks.

Hantavirus Infection
Hantaviruses occur among wild rodent and shrew populations in certain portions of the world. Rats and mice of numerous species have been implicated in outbreaks of the disease. Numerous Hantavirus infections from rats have occurred in laboratory animal facility workers. Rodents shed the virus in their respiratory secretions, saliva, urine, and feces. Transmission to

humans is via inhalation of infectious aerosols. Disease manifestations in humans from the most common *Hantavirus* documented from laboratory animal exposure, Seoul Virus—hosted by *Rattus noryegicus*--is characterized by fever, headache, myalgia and petechiae and other hemmorhagic symptoms including anemia and gastrointestinal bleeding.

Other Pathogenic Diseases

There are several other diseases that have been documented as occupationally acquired. These include bacterial pathogens *Salmonella spp*. from guinea pigs and *Shigella spp*. from mice, rats, and guinea pigs; and fungal agents *Microsporum* and *Trichophyton spp.* from mice and guinea pigs. Good hand washing technique and appropriate use of gloves are critical in reducing the risk of infection. In addition, because the clinical manifestations from the infections described above are so similar to flu, annual flu vaccinations are recommended for laboratory animal workers, such that flu may be discounted as a potential cause.

Allergic Reactions to Rats

By far the greatest occupational risk to working with rodents is allergic reaction or developing allergies. Those workers that have other allergies are at particular risk. Animal or animal products such as dander, hair, scales, fur, and saliva, and body wastes, urine in particular contain powerful allergens that can cause both respiratory and skin disorders. Allergy is most often manifested by nasal symptoms, itchy eyes, and rashes. Symptoms usually evolve over a period of exposure 1-2 years. It is estimated that 30% of individuals working with rodents will develop allergies. Occupation-related asthma, a more serious disorder, might develop in about 10% of persons with allergic disease who work with laboratory animals. The National Institute for Occupational Safety and Health (NIOSH) has developed a set of recommendations for “Preventing Asthma in Animal Handlers”. We encourage reviewing this document. The link is https://stacks.cdc.gov/view/cdc/111139 .

How to Protect Yourself

- Wash your hands. The single most effective preventative measure that can be taken is thorough, regular hand washing. Wash hands and arms after handling rats. Never smoke, drink or eat in the animal rooms or before washing your hands.
- Wear gloves. When working with rats, wear gloves appropriate for the task. The use of latex gloves can cause an allergic reaction over time. EHS recommends using nitrile or other suitable alternative glove material. Leather gloves or leather gloves with cuffs and Kevlar lining may be appropriate when working with *Rattus* or similar or large animals that may bite (*Cavia, Cricetomys*, etc.)
- Wear respiratory protection if needed. Respiratory protection can be worn when working with rodents, especially if there is a risk of aerosol transmission of a zoonotic agent or reduction of allergy symptoms. Contact EHS for additional information on recommendations on respirator type, training, and general information on respiratory protection.
- Wear other protective clothing. Lab coats should be available and worn when working with the rodents. Avoid wearing street clothes while working with animals. Since lab

coats are considered personal protective equipment they should not be taken home to launder. Departments are responsible for laundering soiled lab coats. Note that all lab coats worn in an animal room should stay in the animal room rather than being worn to and from labs, class, etc.

Seek Medical Attention Promptly
If you are injured on the job, promptly report the accident to your supervisor even if it seems relatively minor. If you are experiencing symptoms that you think may be related to animal handling, talk to your faculty supervisor for advice and additional guidance. Minor cuts and abrasions should be immediately cleaned with antibacterial soap and then protected from exposure to rats. For more serious injuries or if there is any question, seek medical attention. Tell your physician you work with laboratory animals. Any accident/incident should be reported to your supervisor who must notify HR as soon as possible and must submit an Accident Report to HR (hr@reed.edu) within 24 hours of the incident. Please direct any occupational health and safety questions to EHS (EHS@reed.edu).

Whenever you are ill, even if you are not certain that the illness is work-related, always mention to your physician that you work with laboratory animals. Many zoonotic diseases have flu-like symptoms and would not normally be suspected. Your physician needs this information for a more informed diagnosis.

10.0 Working with Human Subjects

10.1 Institutional Review Board

Research involving human subjects must first be approved by the Reed College Institutional Review Board (IRB). This includes senior thesis projects and research conducted outside of the classroom or laboratory space. A limited set of classroom assignments may be exempt from IRB review. Questions about human subject studies or the IRB approval process should be directed to your faculty advisor or to the IRB itself. Project proposals can be submitted through IRIS.

10.2 Safety Considerations when working with Human Subjects

Psychological research can present risks to subjects that must be addressed during IRB review. These risks fall into five broad categories: physical, psychological, social/economic, loss of confidentiality, and legal risks.

Researchers should also take care to protect themselves during the research process. This may include utilizing universal precautions if encountering biological materials (see *Bloodborne Pathogen Exposure Plan*). Stress from research can manifest in a variety of behaviors. It is important for researchers to safely position themselves in order to provide quick egress during an emergency. An example of this is maintaining a clear pathway to a doorway.

10.0 Evacuation and Emergency Situations*

- Familiarize yourself with the evacuation routes and the nearest exits.
- When the building alarm sounds, all must evacuate via the nearest designated emergency exit and proceed to the designated assembly areas.
- Follow directions given to you by your instructor, supervisor, manager, and/ or emergency officer.
- During emergency power shut down, the power sources should be shut off (heaters, agitation equipment, motor, vacuum pumps, UV lamps, and any electrical equipment). Do not work with chemicals or equipment under emergency lighting.
- In case of a fire, immediately evacuate the building through the nearest exit route. Do not use elevators. Assist mobility impaired persons in exiting the building.

*See Reed College Emergency Policies and Procedure at
https://www.reed.edu/ehs/emergency_procedures/index.html

11.0 Hazard Communication

11.1 GHS Pictograms and Hazard Classes

Flame Over Circle  • Oxidizers	**Flame**  • Flammables • Self Reactives • Pyrophorics • Self-Heating • Emits Flammable Gas • Organic Peroxides	**Exploding Bomb**  • Explosives • Self Reactives • Organic Peroxides
Skull and Crossbones  • Acute toxicity (severe)	**Corrosion**  • Corrosive to Metal • Skin Corrosion • Serious Eye Damage	**Gas Cylinder**  • Gases Under Pressure • Liquefied Gas
Health  • Carcinogen • Respiratory Sensitizer • Reproductive Toxicity • Target Organ Toxicity • Germ Cell Mutagen • Aspiration Toxicity	**Environment**  • Environmental Toxicity	**Exclamation Mark**  • Skin Irritant • Dermal Sensitizer • Acute Toxicity (harmful) • Narcotic Effects • Respiratory Irritation • Eye Irritation

11.2 Radioactive Material Symbol

All laboratory entryways and storage areas working with radioactive materials must be labeled with the radioactive material use sign below. Warning labels shall be affixed to containers of waste, refrigerators, freezers, incubators, and centrifuges containing radioactive materials.

11.3 Biohazard Symbol

All laboratory entryways working with RG2 materials or higher must be labeled with the universal biohazard symbol. Warning labels shall be affixed to containers of medical waste, refrigerators, freezers, incubators, and centrifuges containing BL2 or BL3 agents, human blood or "other potentially infectious material". Other equipment such as water baths, sonicators, and biological safety cabinets do not require a permanent biohazard label if decontaminated after each use. In these situations, a biohazard label should be temporarily posted on the equipment while in use with human blood, other potentially infectious materials, or an infectious agent.

Psychology Wet Laboratory Student Agreement

All students registered for a psychology lab section which may expose them to hazardous chemicals and/or biological agents/animal tissues are responsible for reading, reviewing and signing the safety policies each semester. The rules are designed to give you and fellow students a safe and educational lab experience. Most accidents or injuries can be prevented by using common sense and following the policies listed below. Violation of the agreement could result in removal from the lab.

General Policies:

1. Students will not access laboratories outside of designated classroom/research hours unless authorized by their instructor.
2. Please report any accidents/injuries/spills immediately to your instructor. The instructor will determine the best way to address the problem.
3. Students must familiarize themselves with the safety equipment in the laboratory. Fire extinguishers, eyewash, safety shower, spill kits, and fire exits.
4. Cell phones should not be used in the laboratory without the permission of your instructor or lab supervisor.
5. Deliberate misuse of instruments or disturbing behavior may result in disciplinary action.
6. Student's hands, the lab bench and any equipment should be washed or wiped down at the end of each lab period. This includes hot plates, balances, and any other equipment used. The lab space must be clean and ready for the next class period.
7. Follow any other safety rules given in the lab protocols or issued by your laboratory instructor.
8. When building alarm sounds all must evacuate via the nearest designated emergency exit and proceed to the designated assembly area.
9. In case of a fire, immediately evacuate the building through the nearest exit route. Do not use elevators. Assist disabled persons in exiting the building.

Additional Wet Laboratory Policies:

10. Proper apparel must be worn by all students in the laboratory. No open-toed shoes will be tolerated in laboratories containing hazardous materials. If students come to lab wearing inappropriate apparel, they will be asked to cover the exposed area or leave.
11. Splash resistant, indirect vent goggles will be supplied to laboratories and worn when instructed.
12. Food, drinks, candy, and gum must not enter a laboratory which contains hazardous chemicals. Food and drink is to be left outside or in a backpack while in the lab. This includes capped bottled water and soft drinks.
13. Broken glassware should be swept up with a broom and dust pan and placed in the "Broken Glass Box". Never place broken glass in the regular garbage can.
14. Chemicals must be mixed only following the experimental procedure and not arbitrarily.
15. Do not remove chemicals or supplies from the laboratory.
16. Never leave lab experiments unattended.
17. Avoid contamination of reagents. Always use the pipettes provided with reagent bottles.

18. When using strong acids, bases, or organic solvents gloves must be worn. If asked to note an odor, gently waft the vapors to observe the smell.
19. When using biological agents/microorganisms in the lab, perform proper handwashing (soap and water) before and after each laboratory exercise, observe aseptic techniques, and disinfect the bench before and after the laboratory session with 70% alcohol solution.
20. Gloves are required whenever there is potential for contact with hazardous chemicals and should never be reused.
21. Chemicals must be disposed of in the appropriate waste container and must never be put down the drain without the approval of the instructor. The instructor will direct students concerning proper waste disposal.
22. All containers must be labeled with contents and contact information.
23. All heating sources must be turned off and unplugged at the end of each lab period. (i. e. hotplates, Bunsen burners, and bead baths).

Student Agreement:

I have read and agree to follow the Psychology Lab Student Agreement. I am aware that the instructor and /or laboratory staff has the right to report on or remove me from the laboratory if I fail to adhere to these policies. Furthermore, I understand that my instructor may deduct points for failure to obey these laboratory policies.

Print Name:_____

Signature:_____Date:_____

Lab course and room number: _____

_____I wear contact lenses