Personal Protective Equipment (PPE) Policy

A. Purpose

To protect University employees who work in areas where chemical or biological hazards or the potential for chemical or biological hazards exist.

B. Background Information

The Occupational & Safety Health Administration (OSHA) and American National Standards Institute (ANSI) standards require protection for the head, eyes, ears, skin, feet, hands, respiratory system, and/or body under certain hazardous working conditions.

C. Policy

A general rule to follow is "use of personal protective equipment is required when there is a reasonable probability that injury or illness can be prevented by such equipment."

Reasonable engineering controls, such as increased ventilation, are preferable to personal protective equipment. When employees are required to wear personal protective equipment, the cost of the equipment should be considered a departmental expense.

D. Supervisor and Employee Responsibility

Supervisors or Instructors should consult with the Laboratory Safety Manager (jyu@kgi.edu) and complete the PPE Hazard Assessment Form to assess hazards in areas where their employees work. A determination will be made as to which areas require the use of personal protective equipment and the type and quality of the necessary equipment. Supervisors and Instructors are responsible for ensuring that workers, students, and visitors review the PPE Hazard Assessment Form and wear the protective equipment as specified.

Employees are required to review the PPE Hazard Assessment Form completed by their PIs, to understand the specific PPE required for their tasks. They must wear personal protective equipment when it is deemed necessary.

E. Personal Protective Equipment Cost

KGI provides its employees with lab coats, safety goggles, and other necessary PPE. For PPE orders, please reach out to the Laboratory Safety Manager at jyu@kgi.edu.

Additionally, Supervisors can acquire their personal protective equipment from any approved commercial safety equipment supplier.

F. Types of PPE's

Apparel

Protective apparel includes lab coats, chemical resistant aprons, and disposable protective apparel. Protective apparel should be worn in labs whenever there is a potential risk of exposure to hazardous materials or conditions. The specific type of protective apparel may vary depending on the nature of the work being conducted in the laboratory, but some common instances where protective apparel is necessary include:

- **Chemical Handling:** When working with chemicals that can cause skin irritation, burns, or other adverse reactions, appropriate protective apparel such as lab coats, gloves, and goggles should be worn.

- **Biological Hazards:** In laboratories dealing with biological materials, such as bacteria, viruses, or other microorganisms, protective apparel like gloves, lab coats, and sometimes masks or face shields may be required.

- **Radiation Exposure:** In labs where there is a risk of exposure to radiation, appropriate protective clothing, such as lead aprons or other specialized gear, should be worn.

- **Physical Hazards:** When working with equipment that poses a physical risk, such as glassware that could break, gloves and other protective clothing may be necessary to prevent injuries.

- **Fire Hazard:** In labs where there is a risk of fire, flame-resistant or fire-retardant clothing may be required. Uncontaminated apparel can be worn outside laboratories or buildings when employees are transferring chemical or biological samples or waste between different laboratories or buildings. When handling hazardous or heavy materials, it is advisable to have someone accompany you if needed.

Shoes

Appropriate footwear that is effective in preventing or limiting injury shall be worn by employees who are exposed to conditions that cause foot injuries. As a general rule, low-heeled, closed-toe shoes shall be worn in all laboratories at KGI.

Safety Glasses & Goggles

Appropriate eye protection shall be provided for and worn by employees whose jobs expose them to eye hazards. According to CDC, protective eyewear shall be worn by personnel when conducting procedures that have the potential to create splashes and sprays of microorganisms or other hazardous materials. KGI's policy requires eye protection anytime there is a potential to create splashes, sprays, or spills, regardless of the hazardous nature of the material being handled.

Some activities that have the potential to create splashes, sprays, or spills include:

- Pipetting
- Mixing
- Centrifugation
- Blending
- Vertexing
- Loading Syringes
- Pouring Liquids
- Opening Containers
- Streaking Plates

If these activities are being performed, eye protection is required. Protective eyewear must also be worn in all laboratory spaces where physical, biological and chemical hazards are present or whenever there is a chance of an eye injury. Over the glass (OTG) safety glasses are available to be worn over prescription glasses. Standard prescription glasses are not impact resistant and are not suitable alternatives to safety glasses. The minimum acceptable form of eye protection is safety glasses that meet the requirements specified in ANSI Z87.1. Impact and/or chemical resistant goggles or face shields provide additional protection and should be worn over normal corrective lenses, unless prescription safety glasses are worn.

Gloves

Gloves protect the hands and arms from chemicals, temperature extremes, abrasion and to prevent contamination. Here are common situations when individuals working in labs should wear gloves:

- **Chemical Handling:** When working with chemicals that can be harmful to the skin, corrosive, or toxic, gloves should be worn to prevent skin contact and absorption.

- **Biological Work:** When handling biological materials, such as bacteria, viruses, or other microorganisms, wearing gloves is essential to prevent contamination and protect against potential infections.

- **Handling Hazardous Materials:** For any materials known to be hazardous, whether chemical, biological, or radioactive, gloves provide a barrier to protect the skin.

- **Laboratory Equipment Use:** When operating laboratory equipment that may pose a risk of injury or contamination, such as glassware or sharp objects, gloves can provide an additional layer of protection.

- **Infectious Agents:** In laboratories dealing with infectious agents, wearing gloves is a standard practice to minimize the risk of transmission.

- **Sample Collection:** When collecting samples, especially from potentially contaminated sources, gloves are essential to prevent contamination of the sample and protect the person collecting it.

- **Cleaning and Decontamination:** When cleaning laboratory equipment or surfaces that may be contaminated, wearing gloves is necessary to avoid direct contact with cleaning agents or potentially contaminated surfaces.

Proper selection and use are vital to a glove's ability to protect an employee's hand. This is especially true when dealing with potential exposure to chemicals. An important aspect to remember is that a glove's thickness and material type affects its ability to serve as a barrier against a specific chemical. Specifications regarding the compatibility of glove materials with chemicals are available from the Laboratory Safety Manager.

Another factor to consider when properly selecting gloves, is the wearer's need for dexterity. Please ensure that the size and thickness of the glove allows the user to safely perform all manipulations. Caution is also required when using gloves around moving equipment. Gloves should not be worn by anyone whose hands are exposed to moving parts in which the gloves could get caught. Gloves can be worn outside of the laboratories but must be removed when touching door knobs or typing on shared computers.

Ear Plugs & Muffs

There are two forms of hearing protectors: ear plugs and ear muffs. Each has specific advantages based on wearer comfort, work environment, and cost. Both are designed to reduce noise to an acceptable level based on the level and type of noise and the type of hearing protector. Therefore, proper selection is important.

According to Cal-OSHA regulations, all employees who are exposed to noise in excess of an eight-hour time-weighted average sound level of 85 dBA (decibels, A- weighted) shall wear hearing protectors. Hearing protectors worn where noise is above this permissible level must reduce the noise to a time-weighted average of 85 dBA or less.

Supervisors are responsible for determining whether an employee's work environment exposes the employee to an unacceptable level of noise. Nothing prevents an employee from wearing hearing protectors to reduce annoyance noise or high-level noise of short duration. Hearing protectors should always be considered "personal" equipment and should not be used by other individuals, except for muffs that are adequately cleaned and sanitized.