UNIT SPECIFIC PLAN FORM

INVESTIGATOR INFORMATION

Principal Investigator: _____

E-Mail: _____

Department: _____

Office Address: _____

Office Phone: _____

Office Fax: _____

Studio/Work Area Address + Phone: _____

Note: *List the addresses for all locations in which your personnel work.

Table of Contents:

Please answer all questions and do not leave any blanks. If a question has no connection to the work in your area(s), please write "NA" or "not applicable" next to the answer. If you wish to add additional information, attach separate sheets for elaboration.

I. ACTIVITY OVERVIEW

A. Description of Activities. Please supply a narrative explaining the goals of your work and briefly describe the activities typically performed in your work area. This information is requested to help EHS review your Unit Specific Plan Form with more insight.

II. CHEMICAL SAFETY

A. Inventory of Chemical Agents. Please list, using the CHIMS software, all the chemicals used in your research and/or maintained in stock. University safety policy SY20 requires a current inventory of chemicals for each work area. Make note of any compounds with carcinogenic potential. The list shall be thorough and comprehensive. Information regarding classification of chemicals as cancer hazards can be found OSHA-Specified Cancer-Causing Agents in Appendix A, the Chemical Safety Fact Sheet, of the Visual Arts Safety Plan.

Consider whether you can justify maintaining a stock of rarely-needed chemicals that may remain on storage shelves for many years. The EPA requires the University to institute a chemical waste minimization program. A basic foundation of this program is to order only the amounts of stock necessary to support the work. Excess should not be purchased because it increases hazardous waste volume and raises the risk of significant spills.

Minimal stock is also beneficial in protecting the safety of EHS and fire department emergency responders. The greater the volume of chemicals on hand, the greater the risk that breakage of containers could lead to mixing of incompatible agents or release of reactive compounds.

I agree that I have reviewed my inventory and have eliminated as many surplus chemicals as possible.	**YES** ☐	**NO** ☐
I have provided easy access to Safety Data Sheets (SDSs) for each of the chemicals included on the inventory.	**YES** ☐	**NO** ☐

If **NO**, why not?

Note: The EHS webpage, www.ehs.psu.edu can provide you access to an electronic SDS database.

B. Use of OSHA-Specified Carcinogens. Please refer to the list of those compounds specifically regulated by OSHA as cancer-causing agents in Appendix A, the Chemical Safety Fact Sheet, of the Visual Arts Safety Manual . Individual occupational standards have been promulgated for these materials. For example, 29 CFR 1910.1048 is the standard that mandates engineering controls and work practices in workplaces where formaldehyde is used.

If one of these chemicals is used or stored in your work areas, a" Standard Operating Procedure" (SOP), Appendix A of the Unit Specific Plan, is required. Again using formaldehyde as an example, the PI supervising a work area where formaldehyde is in use must determine, "using objective data, that the presence of formaldehyde or formaldehyde-releasing products in the workplace cannot result in airborne concentrations of formaldehyde that would cause any employee to be exposed above the action level or the short-

term exposure limit (STEL) under foreseeable conditions of use." The SOP provides the appropriate handling procedures to ensure exposure levels are not exceeded. As part of this SOP and hazard assessment, where exposure determinations are unclear, the P.I. will consult EHS for assistance in making the determination or clarification of other regulatory requirements of the individual, if applicable, carcinogen standards.

To address this requirement for documentation, please check **YES** if the following generic statement applies to your practices.

YES ☐ **NO** ☐

- I have evaluated the use of the OSHA-classified carcinogens included on my chemical inventory. Based on the minimal quantities present and the limited frequency of use, I do not expect OSHA permissible exposure limits (PELs) or action levels (usually assumed to be one-half the PEL) to be exceeded.

  These chemicals are handled with appropriate ventilation controls to minimize possible airborne exposures. They are stored in a labeled, designated area.

  I have reviewed:
  - all operations which could generate inhalation hazards from these agents and the assignment of workers performing these operations
  - all information, observations, or calculations which would indicate employee exposure
  - any employee complaints of symptoms which may be attributable to exposure to these chemicals.

  I do not believe that exposure monitoring is necessary to confirm my conclusion that exposures are below regulated thresholds; however, I am aware that I may request EHS to consult or to collect air sampling data. If I am in doubt about my decision that exposure is controlled, I will seek outside advice from EHS. My workers have been informed that they may request air monitoring if concerned about their health and safety. I will honor any employee request for additional evaluation.

If the above description does not reflect your situation and you replied **NO** to the question above, please explain your protocol for OSHA carcinogens in the box below.

C. Hazardous Chemicals. Please refer to the attached *Chemical Safety Fact Sheet* (CSFS) in Appendix A of the Visual Arts Safety Manual. Note: Hazardous chemicals may be in the form of liquid, solid, gases, aerosols, or dusts.

In accordance with the training I have provided, all workers in the work areas under my supervision will adhere to the practices described in the CSFS. We will comply with the University safety policies.	**YES** ☐	**NO** ☐
All students and employees working with chemicals or supervising someone who works with chemicals have completed Hazard Communication training found on the EHS website, https://apps.opp.psu.edu/ehs_training/	**YES** ☐	**NO** ☐
Each person is aware of the health and physical hazards involved with the chemicals they are using.	**YES** ☐	**NO** ☐

If **NO**, explain how your practices deviate from the standard and why you have chosen to alter approved procedures.

D. Compressed Gas Cylinders. Please refer to the attached *Compressed Gas Cylinders Fact Sheet* (CGCFS) in Appendix A of theVisual Arts Safety Manual, for the handling of compressed gas cylinders noted in the chemical inventory.

Does your research work involve the use of compressed gas cylinders? If **NO**, please skip to the next section.	**YES** ☐	**NO** ☐
If **YES**, all workers in the work areas under my supervision will adhere to the practices described in the CGCFS, in accordance with the training I have provided. We will comply with University safety policies.	**YES** ☐	**NO** ☐
Each person is aware of the proper practices required for handling pressurized cylinders.	**YES** ☐	**NO** ☐

If **NO**, explain why not.

III. RADIATION SAFETY

Radiation Protection Programs are targeted at the protection of people and the environment from all forms of electromagnetic and ionizing radiation. The EHS protection programs are grouped around the sources of that radiation and how their safe use is controlled at PSU.

A. Non-ionizing Radiation Program

Does research involve the use of UV light? If No, skip to B.	**YES** ☐	**NO** ☐
If **YES**, all workers in my areas will be made aware of the hazards and be trained on proper procedures and provided with appropriate PPE.	**YES** ☐	**NO** ☐
Each person is aware of the health hazards involved with the UV light they are handling.	**YES** ☐	**NO** ☐

B. **Laser Program**

Does research involve the use of lasers? If No, skip to C.	**YES** ☐	**NO** ☐
If **YES**, all workers in my areas will be made aware of the hazards and be trained in accordance with SY-17 and provided with appropriate PPE. Lasers will be registered with EHS, and laser specific procedures will be developed and complied with. I will ensure that the annual self audits are properly performed and documented with the laser procedures.	**YES** ☐	**NO** ☐

C. **Radiation Producing Equipment Program**

Does research involve the use of Radiation Producing Equipment (Either ionizing or non-ionizing)? (Non-ionizing includes microwave, infrared, and ultraviolet radiation) If No, skip to D.	**YES** ☐	**NO** ☐
If **YES**, all workers in my area will be made aware of the hazards and be trained in accordance with SY-15. The devices in my area(s) will be registered with EHS, and I will develop and follow specific procedures for the use of the equipment.	**YES** ☐	**NO** ☐

D. **Radioactive Material Program**

Does research involve the use of radioactive material? If No, skip to next section.	**YES** ☐	**NO** ☐
If **YES**, I will request authorization to use radioactive material and comply with the requirements in SY-15. I will ensure that I and my staff are trained in accordance with University Isotope Committee requirements and comply with the Rules and Procedures for Users of Radioactive Material at The Pennsylvania State University.	**YES** ☐	**NO** ☐

IV. PHYSICAL HAZARDS

Please indicate the physical hazards present in your work area.

- ☐ 1. Electrical hazards (potential electroshock, burns) from un-insulated wires, and equipment with high voltage
- ☐ 2. High- and low-temperature equipment such as kilns, furnaces, heated elements, steam, or cryogenic materials, radiofrequency thermal sealers or thermal-reactive processes.
- ☐ 3. Compressed gas cylinders which could become projectile missiles
- ☐ 4. Broken glassware, scalpels, or ceramic objects.
- ☐ 5. Needles
- ☐ 6. UV light that could result in dermatitis and eye injury
- ☐ 7. Lasers
- ☐ 8. Noise at levels which cause discomfort or stress
- ☐ 9. Heavy objects, heavy materials (metal or brick blocks, weights) that could fall, and wheels of moving carts or full waste containers that could crush feet.
- ☐ 10. Grinding, sanding, filing operations that could generate flying particles
- ☐ 11. Machine points of operation (cutting, boring, shaping, forming, pressing, shearing, abrasion, drilling), e.g., rotating belts on vacuum pumps and saws and blades must be covered that could cause injury.
- ☐ 12. High-pressure systems
- ☐ 13. Computer aided machining stations or other automated stations.
- ☐ 14. Microwave or infrared producing equipment operations, radiofrequency sealers.
- ☐ 15. Vibration producing equipment (requiring physical handling).
- ☐ 16. Other (*please elaborate in the box below*):

Have you provided appropriate training for your workers on the physical hazards? This training shall include an explanation of the hazards and the possibilities for injury. **YES** ☐ **NO** ☐

If **NO**, why not?

V. SAFETY PRECAUTIONS IN PLACE

A. Engineering Controls for Physical Hazards. What controls have you provided to minimize exposure to physical hazards in your work area?

Please indicate which engineering controls are provided:

☐ 1. **Machine guarding**, e.g., covers over vacuum pump belts, metal or acrylic plastic enclosures over wheels and blades, barriers or shields on drills, chuck shields on lathes, etc. (*please describe*):

☐ 2. **Control of hazardous energy**

a) Lockout/Tagout mechanical systems and procedures, e.g., any device over the disconnect switch, circuit breaker, valve or other energy-isolating mechanism that locks it in the "safe" or "off" position; written warnings at the mechanism.

b) Other protective engineering measures that automatically cease power supply, e.g., remote shutoff buttons; emergency panic buttons at the tool; mechanical stops such as pins and valves.

☐ 3. **Containment measures,** e.g., spill trays underneath vessels, tape or wire mesh on glassware, berms around apparatus, curtains around lasers or welding areas (*please describe*):

☐ 4. **Shielding,** e.g., shatterproof shields around reaction or equipment (*please describe*):

☐ 5. **Other,** e.g., ventilation for heat dissipation or other atypical hazards (*please elaborate*):

Have you trained your workers to adequately apply the engineering controls at all times? **YES** ☐ **NO** ☐

If **NO**, why not?

B. Ventilation Controls for Inhalation Hazards. Please indicate which of the following ventilation controls are present in your work area. Inhalation hazards may pertain to dusts, particles, vapors, or gases.

☐ 1. **Chemical fume hoods**

How many? _____

Where are they located? _____

_____

_____

(EHS maintains a database used to track hoods and record annual performance testing results.)

☐ 2. **Walk-in hood**

☐ 3. **Flexible local exhaust ducts** (a.k.a. snorkels, sucker hoses, elephant trunks)
(Portable systems may include filters which must be changed according to manufacturer recommendations)

☐ 6. **Portable "smoke hog" or ductless fume hood** (charcoal and HEPA/other filters must be changed at least every 6 months)

☐ 7. **Other** (*please elaborate*):

C. Personal Protective Equipment (PPE). The employer is responsible for assessing the workplace to determine if PPE (supplementary to engineering controls) should be used to protect against the hazards in given operations. The employer certifies the workplace hazards assessment, chooses the proper equipment, issues it to workers who need it, and trains these employees to understand the requirements for their involvement. Employer insures that pesticide label required PPE is present for all pesticides at the facility. Employees must be taught:

- when PPE is necessary
- what PPE is necessary
- how to properly don, doff, adjust, and wear PPE
- the limitations of the PPE
- proper care, maintenance, useful life, and disposal of PPE
- to follow labeling instructions when working with pesticides.

	YES	NO
Do the operations in your work area or under your supervision require PPE?	☐	☐
Do you supply an adequate stock of the PPE necessary to protect your workers (at no cost to the employee/student)?	☐	☐

Note: Be aware that EHS surveys the PPE supplies during annual visits. If you have questions as to appropriate PPE, EHS can help you with your assessments.

Please indicate which of the following PPE is provided to your workers.

1. **Eye and face protection** are required when the worker is "exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, infectious materials, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation,". In addition, eye and face protection are required for workers handling biological agents.

   ☐ **safety glasses with side-shields**

   If safety glasses are used, consider the following requirements:

   a) if there is a UV light exposure, the safety glasses shall be approved by the American National Standards Institute (ANSI) for protection against UV light
   b) if lasers are in use, the safety glasses shall be approved by ANSI for protection against the specific type of laser present
   c) prescription safety glasses shall be provided for those requiring vision correction (See PPE Policy)
   d) contact lens wear may be regulated by the principal investigator/supervisor (The policy for contact lens wear is decided by each individual investigator/supervisor.)
   e) contacts and vision-corrective glasses are no substitute for safety eyewear; they are acceptable in conjunction with safety glasses.

   ☐ **splash goggles**

☐ **face shields**

2. **Hand protection** is required when employees' hands are "exposed to hazards such as those from skin absorption of harmful substances, severe cuts or lacerations, severe abrasions, punctures, chemical burns, thermal burns, excessive vibration, and harmful temperature extremes." In addition, hand protection is required for workers handling biological agents.

   Note: Barrier creams are not considered acceptable hand protection.

   ☐ **latex gloves or equivalent** (latex should be excepted where latex allergy is known or suspected)

   ☐ **other chemical-resistant gloves** (materials: Viton, Silvershield, PVC, nitrile, neoprene, butyl rubber)

   ☐ **thermal gloves** (materials: pigskin and other leather, Kevlar, Nomex, aluminized backs)

   ☐ **cut-resistant gloves** (materials: mesh layer, steel filament yarn, Spectra/Kevlar/Vectran)

   Glove Selection Procedures – Gloves shall be chosen based on appropriateness for a specific hazard. There are three primary performance factors used to evaluate the chemical compatibility of a glove material with the agents to be handled.

   a) *Degradation rating*: the change in one or more of the physical properties of a glove caused by contact with a chemical. Degradation typically appears as hardening, stiffening, swelling, shrinking, or cracking of a glove.
   b) *Breakthrough time*: the elapsed time between the initial contact of the test chemical on the surface of the glove and the analytical detection of the chemical on the inside of the glove.
   c) *Permeation rate*: the rate at which the test chemical passes through the glove material once breakthrough has occurred and equilibrium is reached (based on absorption of the chemical on the surface of the glove, diffusion through the glove, and desorption of the chemical on the inside surface of the glove).

   These characteristics change with each glove manufacturer's product. A neoprene glove from Ansell Edmont will show different performance results than a Baxter neoprene glove, despite the apparent similarity in composition. Glove efficiency may even vary within a manufacturer's product line, depending on thickness and coating. For instance, Ansell Edmont neoprene unsupported gloves are suitable for wear with muriatic acid under careful control conditions. The supported neoprene gloves are rated as "good" for muriatic acid. A glove selection chart with information regarding the effectiveness of a specific glove material and brand for a given chemical is available from the EHS website at glove selection chart.

   To arrive at the best glove for your specific operations, consider the points below in the selection process:

   - the performance characteristics of the glove relative to the task being performed
   - glove thickness vs. needs for dexterity
   - conditions present
   - duration of use
   - the potential hazards identified for the operation.

   Offer proper hand sizes and length options (wrist/forearm, elbow, shoulder). Cuffs are discouraged since they may inadvertently capture chemicals in the folds.

   Please do not underestimate the importance of careful glove selection. Inadequate prior inquiry may have serious repercussions, as illustrated by the death of a researcher who suffered from mercury poisoning after contaminating her latex glove with dimethylmercury. Latex was not the correct type of glove to use with this highly toxic agent.

If you provide nitrile gloves as the basic staple for the glove supply, you must communicate the

following comprehensive requirements to your staff.

Nitrile is generally an adequate material for use with a wide variety of chemicals. It shall not be used with chemicals/chemical mixtures for which it is not recommended by the manufacturer (or for which no rating is available). Despite its selection as the main glove type for common everyday usage, other, possibly superior, options will be considered in preparing for new experiments and hazardous procedures.

Staff will change gloves frequently throughout the day and whenever gloves have become contaminated. Workers wash their hands each time gloves are changed and prior to eating, drinking, applying cosmetics, or smoking.

Please confirm that you will investigate the correct glove(s) to be purchased for your work area.	**YES** ☐	**NO** ☐
If latex is the foundation of your glove supply, you will ensure that latex is sufficient for the operations conducted by those workers under your supervision.	**YES** ☐	**NO** ☐
If latex is not an appropriate choice, the glove of optimum performance will be provided.	**YES** ☐	**NO** ☐
Workers are trained to understand the particulars of the glove selection process and the weaknesses of latex.	**YES** ☐	**NO** ☐
Non-powdered gloves or latex alternatives will be offered to workers who experience dermal sensitivity problems. Workers are trained to recognize the symptoms of latex allergy.	**YES** ☐	**NO** ☐

3. **Head protection** is required when employees work in areas where there is a potential for injury to the head from falling objects and low ceilings.
   ☐ **safety helmet/hard hat that meets ANSI criteria**

4. **Foot protection** is provided when there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, and where employees' feet may be exposed to electrical hazards. Safety shoes must comply with ANSI criteria.

   ☐ **steel-toed shoes for impact and compression hazards**
   ☐ **shoes with metatarsal guards**
   ☐ **shoes with steel midsoles for puncture-resistance**
   ☐ **chemical-resistant boots or overshoes**
   ☐ **other:**

5. **Respiratory protection** is employed only when effective engineering controls are not feasible to prevent atmospheric contamination or as required by a pesticide label. EHS must do a risk assessment to evaluate hazards where respirators may be needed.

   ☐ **respirators are supplied**
   - Check **YES** if you meet the following requirements of the Respiratory Protection Program. **YES** ☐ **NO** ☐

     a) EHS has been contacted to register the respirator users (EHS maintains a database of all employees who wear respirators. If respirators are dispensed to your workers, their names must be in the database.)
     b) documented the respirator selection procedures
     c) annual medical questionnaire has been reviewed by a licensed health care provider (LHCP); examination conducted as recommended by the LHCP
     d) wearer has been fit tested
     e) wearer has been trained.

6. **Clothing** is necessary to protect the skin and personal clothing against contamination.

☐ **lab coat, cotton**
☐ **disposable chemical-resistant lab coat**
☐ **chemical-resistant coverall suit** (e.g., Tyvek or Saranex)
☐ **lab apron, rubber**

7. **Hearing protection** must be provided when sound levels exceed OSHA permissible noise exposures (noise exposure table available from EHS) when measured on the A scale of a standard sound level meter at slow response.

☐ **earplugs**
☐ **hearing band**
☐ **Earmuffs**

- Do you provide an audiometric testing program? **YES** ☐ **NO** ☐
- Do you understand the Noise Reduction Rating (NRR) and have you explained its significance to wearers of hearing protection? **YES** ☐ **NO** ☐

General questions regarding PPE :

a) Lab coats are worn at all times when workers are working with chemicals. **YES** ☐ **NO** ☐

b) Lab coats are worn only inside the work area and are removed before workers leave the work area (to prevent the spread of contamination outside the workplace). **YES** ☐ **NO** ☐

c) Short pants and open-toed shoes/non substantial shoes (e.g., sandals, ballet flats) are not worn inside the work area. **YES** ☐ **NO** ☐

d) Eye protection, gloves, and lab coats are worn by any worker who handles chemical or biological agents. **YES** ☐ **NO** ☐

e) Gloves are not worn when opening doors or touching objects that may spread contamination to others. **YES** ☐ **NO** ☐

The PPE checked above adequately protects workers against hazards inside the work area. **YES** ☐ **NO** ☐

If **NO** to **ANY** of the questions in this PPE section, explain why your practice deviates from safety policy.

D. Emergencies and Spill Decontamination. Please refer to the *Emergency Response Training Fact Sheet* in Appendix A of the Visual Arts Safety Plan. OSHA regulations require employers to train workers how to respond to emergency situations, including fires and releases of, or substantial threats of releases, hazardous substances.

1. **Emergency response –**

Have you made your building's emergency evacuation plan available to your workers?	**YES** ☐	**NO** ☐
Have you discussed the procedures to follow in the event of fire?	**YES** ☐	**NO** ☐
Do your workers know where to gather outside during a building evacuation?	**YES** ☐	**NO** ☐
Have you posted the required safety information on the area door?	**YES** ☐	**NO** ☐
Have you attached the University emergency phone numbers next to your telephones?	**YES** ☐	**NO** ☐

If **NO** to any, explain.

Chemical Spill Response

Have you trained your workers to understand the difference between minor and major chemical spills?	**YES** ☐	**NO** ☐
Do they know how to evacuate work area and building?	**YES** ☐	**NO** ☐
Do they understand that they must call EHS for major spills, after 911 has been notified if appropriate?	**YES** ☐	**NO** ☐
Do they know when evacuation of a work area is required?	**YES** ☐	**NO** ☐

2. **Eyewashes –** An ANSI-approved, continuous flow eyewash should be located in every work area where chemical agents that are injurious to the eye are in use or storage. Eyewashes shall be located within 10 seconds travel time of a hazard. For use of strong acids or caustics, the eyewash shall be immediately adjacent to the hazard. Eyewashes must be tested weekly, i.e., they must be activated to allow flushing of accumulated sediments in the line.

Is there a properly functioning eyewash provided in every appropriate work area?	**YES** ☐	**NO** ☐
Is it easily accessible from any part of the work area?	**YES** ☐	**NO** ☐
Does the water flow without use of the operator's hands to hold the eyewash open?	**YES** ☐	**NO** ☐

If **NO** to any of these statements, explain.

Do you follow weekly eyewash inspection and testing and document testing using the form found on the EHS website http://www.ehs.psu.edu/occhealth/eyewashinspectionform.pdf, ?	**YES** ☐	**NO** ☐
Is area around eyewash unobstructed?	**YES** ☐	**NO** ☐

If **NO**, explain.

3. **Safety shower –A** safety shower should be located in accessible areas that require no more than 10 seconds to reach from work areas where chemical or biological agents are in use or storage. EHS is available to help determine where showers are necessary. The shower shall be located on the same level as the hazard and the path of travel shall be free of obstructions that may inhibit the immediate use of equipment. Showers are tested by EHS on an annual basis. Check the inspection tags to ensure that your nearest shower has been tested within the last 12 months. Report any testing lapses to EHS.

   Please confirm that a shower, when needed, is available in adequate proximity to your work areas. **YES** ☐ **NO** ☐

   Are the showers to be used by your workers in emergencies free of obstructions? There should be no obstructions to easy shower access. **YES** ☐ **NO** ☐
   If **NO**, explain.

4. **First aid kit –** Please refer to University Safety policy SY-21 *First Aid Kits*.
   Have you supplied a first aid kit? http://guru.psu.edu/policies/SY21.html **YES** ☐ **NO** ☐

   Do your workers know where to find the kit and is it always accessible during their hours of work? **YES** ☐ **NO** ☐

   For those areas that work with hydrofluoric acid, EHS recommends supplying a stock of 17% Calcium Gluconate. The purchase of this material is warranted by the severe corrosive effects caused to skin and bone by HF acid.

   Does your research work involve the use of HF acid? **YES** ☐ **NO** ☐

   If **YES**, do you provide Calcium Gluconate? **YES** ☐ **NO** ☐

   If **NO**, why not?

E. Fire Protection Measures.

1. **Fire extinguishers –** University safety policy requires a fire extinguisher in every work area. Missing fire extinguishers should be reported to Office of Physical Plant. Please ensure that the fire extinguishers present in your work areas are appropriate for the hazards found there.

   Class A: ordinary combustible materials, such as wood, cloth, paper, rubber, and many plastics
   Class B: flammable liquids/gases
   Class C: energized electrical equipment where the electrical non-conductivity of the extinguishing

media is of importance

Class D: combustible metals, such as magnesium, titanium, zirconium, sodium, and potassium (A bucket of sand may be substituted for a dry powder extinguisher in the case of organometallic fires)

Have you provided the appropriate class(es) of extinguishers? **YES** ☐ **NO** ☐

Have you trained your workers to know which class to use for a particular fire? **YES** ☐ **NO** ☐

If **NO** to any of the preceding questions, explain:

Notes: EHS will gladly conduct fire extinguisher training. OPP will inspect and maintain all fire extinguishers, both inside and outside work areas. Check the inspection tag to ensure timely recertification and call OPP for follow-up if the tag is not current.

Note: Fire blankets are discouraged as first aid materials due to their tendency to hold heat close to the body. They can be responsible for amplifying the severity of a burn.

2. Do you provide any specially-designed fire suppression system? (This does not include building sprinklers) **YES** ☐ **NO** ☐

If **YES**, please describe type and purpose.

3. Do you enforce an 18-inch line of clearance between items in storage and the sprinkler heads? Fire code requires sufficient clearance for proper sprinkler head operation. Obstructions to clearance will disrupt the pattern of water flow. This includes inappropriate storage of cardboard boxes above wall cabinets. Excessive storage also affects the air flow and safe ventilation rates. **YES** ☐ **NO** ☐

Storage of flammable materials – Refrigerators used to store flammable liquids must be "explosion-safe" or "explosion-proof". Explosion-safe refrigerators are free of ignition sources within the storage compartment. Explosion-proof refrigerators have been designed to protect against ignition of flammable vapors both inside and outside the storage compartment.

Control of Ignition Sources

Do you store flammable materials in refrigerators? **YES** ☐ **NO** ☐

If **YES**, are the refrigerators explosion-safe? **or** **YES** ☐ **NO** ☐

explosion-proof? (A **NO** response to both indicates a source of concern regarding fire possibilities.) **YES** ☐ **NO** ☐

5. **Related topic –** proper refrigerator practices

Segregation of Materials

Have you confirmed that food and beverages are **not** stored in any refrigerator used for chemicals? **YES** ☐ **NO** ☐

Labeling

Are the chemical storage refrigerators labeled to indicate that storage of food and beverages in these units is prohibited? **YES** ☐ **NO** ☐

Have you labeled all non-explosion-safe/proof refrigerators to indicate that flammable materials may not be stored here? Refrigerators - Explosion Proof (SY11) **YES** ☐ **NO** ☐

F. Area Monitoring and Alarms. Please list the type and room number of any monitoring devices intended to detect environmental contamination, such as monitors/alarms for gas releases.

Alarm Type	location
1.	
2.	
3.	
4.	
5.	
6.	

The following requirements must be met:

- Alarm information detailing the different alarms' sounds and significance must be included in the safety door posting on the outside door to the work area.
- the operations manual for the device, instrument, or equipment must be available in an easily accessible location for authorized workers who can address the alarm.

Have you fulfilled each of these alarm requirements? **YES** ☐ **NO** ☐

If **NO**, why not?

G. Safety Documentation.

Have you provided the Visual Arts Safety Plan in an easily accessible location in your work areas? **YES** ☐ **NO** ☐

Have you established a current chemical inventory utilizing CHIMS? , the PSU required software? **YES** ☐ **NO** ☐

Have all workers using chemicals received the initial and annual refresher Visual Arts Safety Training? **YES** ☐ **NO** ☐

Have your workers been trained to understand the controls available to protect them from the health and physical hazards? **YES** ☐ **NO** ☐

Spill plan Requirements:

The following is a summary of the types of spill plans at Penn State that may be required for a facility, depending on the materials stored and the quantity.

Chemical Storage:

- *Preparedness, Prevention, and Contingency (PPC) Plan*:
  Facilities that meet the following conditions are required to have a PPC Plan:
  - The facility is an industrial or commercial installation that has the potential for causing accidental pollution of the air, land, or water, or the endangerment of public health and safety; or
  - The facility has a National Pollutant Discharge Elimination System (NPDES) stormwater permit.
  - The facility is a manufacturing or commercial installation that generates hazardous waste.
- *Off-Site Emergency Response Plan*:

Facilities that store Extremely Hazardous Substances, as defined by the Emergency Planning Community Right to Know Act, at or above the threshold planning quantity are required to identify themselves as emergency planning facilities, designate and emergency coordinator, and have Emergency Off-Site Response Plans.

Oil Storage:

- *Spill Prevention, Control, and Countermeasures (SPCC) Plan*:
  Facilities that meet the following conditions are required to have an SPCC Plan:
  - The facility could reasonably be expected to discharge oil in quantities that may be harmful into or upon the navigable waters of the United States or that may affect natural resources;
  - The facility has oil in aboveground containers, completely buried tanks, and temporary storage containers; and
  - The facility has completely buried storage capacity of more than 42,000-gallons of oil in tanks that are not regulated under 40 CFR §280 or 281, or the facility has an aggregate aboveground storage capacity greater than 1,320-gallons.
- *Preparedness, Prevention, and Contingency (PPC) Plan*:
  Facilities that store oil in quantities above 55-gallons, but less than that required for the SPCC Plan are required to have a PPC Plan (see Chemical Storage above).
- *Spill Prevention Response (SPR) Plan*:
  Facilities that store oil in regulated aboveground storage tanks in quantities that exceed 21,000 gallons in one location are required to have SPR Plans.

Is your facility required to have a spill plan? If YES, please continue. **YES** ☐ **NO** ☐

Please list the type of spill plan here:

Plan	location
1.	
2.	

I review my spill plan annually and provide required updates to EHS. **YES** ☐ **NO** ☐

All personnel at my facility have received the annual training required by our spill plan. **YES** ☐ **NO** ☐

I agree that prior to the closure of my work area I will complete the *Closeout Checklist* form to ensure the safe removal of all potential hazards and/or hazardous materials. I am aware that this form is available from the EHS website, **YES** ☐ **NO** ☐

- Procedures for Moving Your Laboratory 
  - Notification Form 
  - Certification Form 

H. Controlled Substances

• Does your research work involve the use of controlled substances/pharmaceuticals/drugs? If NO, skip this section.	**YES** ☐	**NO** ☐
• I certify that I am currently licensed by the DEA to possess and use controlled substances.	**YES** ☐	**NO** ☐
• The controlled substances are stored in safe or lockable cabinet.	**YES** ☐	**NO** ☐
• Detailed records of all controlled substances received and used are maintained.	**YES** ☐	**NO** ☐
• My records can account for the total amount of each controlled substance at any given time.	**YES** ☐	**NO** ☐
• A separate record sheet is used for each controlled substance.	**YES** ☐	**NO** ☐
• My records are kept in a bound notebook (not a 3 ring binder or spiral notebook).	**YES** ☐	**NO** ☐
• Unwanted or expired controlled substances are disposed of through EHS.	**YES** ☐	**NO** ☐

VI. CERTIFICATION OF AGREEMENT

A *Certification of Agreement* must accompany all Unit Specific Plans.

Principal Investigator's Agreement.

I certify that the information presented in the submitted Unit Specific Plan Form is accurate and complete.

I agree to comply with all the procedures required in the *Unit Specific Plan* and to fully train and supervise all researchers under my direction.

Principal Investigator's/Unit Manager's Signature **Date**

Safety Officer

If a safety designate has been appointed in your work area, please identify below.

Safety Officer

Campus Address **Campus Phone**

Staff Agreement and Confirmation of Training.

1. I agree that I have thoroughly read and understood the supervising principal investigator's *Unit Specific Plan*
2. I have access to this safety information at all times when I am working.
3. I have been trained to be able to identify the hazards to which I may be exposed and to follow the work practices and procedures discussed in the plan.
4. I certify that I will conduct my work safely and that I will be responsible for following stated safety policies.

Name	Signature	Campus Address	Campus Phone

Inventory of Chemical Agents. (Print out list from CHIMS)

APPENDIX A

STANDARD OPERATING PROCEDURES

Standard Operating Procedures (SOPs) must be developed if your operations include the routine use of carcinogens, reproductive toxins, substances which have a high degree of acute toxicity or work with a piece of equipment or operation that may pose any physical hazards, i.e. lasers, x-ray equipment, high voltage equipment, etc.

The key idea with work areas having standard operating procedures is to ensure a process is in place so that work is well thought out and includes and addresses relevant health and safety issues.

At a minimum, SOPs should include details such as:

- The chemicals involved and their hazards.
- Special hazards and circumstances.
- An assessment of hazards and the potential exposures.
- Use of engineering controls (such as fume hoods).
- Required personal protective equipment.
- Spill response measures.
- Waste disposal procedures.
- Decontamination procedures.
- Description of how to perform the experiment or operation.

Standard Operating Procedures do not need to be lengthy dissertations and it is perfectly acceptable to point personnel to other sources of information. Examples to include as part of SOPs include:

"To use this piece of equipment, see page 4 in the operator's manual (located in file cabinet #4)." "The chemical and physical hazards of this chemical can be found in the SDS – located in the SDS binder. Read the SDS before using this chemical."

EH&S can assist in developing general and specific SOPs for chemical use. Due to the large variety of work being done at PSU, it is the responsibility of each area, department and college to ensure that SOPs are developed and the practices and procedures are adequate to protect their workers who use hazardous chemicals.

BLANK SOP FORM

HTTP://WWW.EHS.PSU.EDU/OCCHEALTH/PSU_SOP_FORM.PDF

SOP Training: http://www.ehs.psu.edu/occhealth/sop_training.pdf

The following links are examples of SOPs from other university websites:

**Disclaimer: EH&S has not verified the accuracy of the information contained within these links and SOPs. It is the responsibility of the unit personnel to ensure the accuracy. These links are being provided only as examples and each work area should write an SOP that is specific to their processes and procedures. These links and SOP procedure are courtesy of Tom Shelly, Cornell University.*

- UCLA SOPs http://www.sop.ehs.ucla.edu/
- A list of SOP examples and resources on the web from the University of Maryland
- The SOP library (with numerous examples) from the University of California - Irvine
- The Michigan State University SOP webpage (with a number of examples)
- A blank form that can generate a custom SOP online – Michigan State University.
- Example of a procedural SOP – Stanford University
- Example of a chemical specific information sheet type SOP (generic – not work area specific) – University of California, Irvine
- A blank template for chemical specific or chemical group SOP - University of California, Irvine
- The University of Delaware SOPs
- Example of a chemical list SOP (generic – not work area specific) – University of Pennsylvania