

SCU EHS New Principal Investigator Survey and Guide

This survey and guide apply to all new principal investigators (PIs) planning to conduct teaching or research in laboratories, shops, studios, and/or use materials or equipment with physical, chemical, biological, or other hazards. Submit completed survey to Yizheng Tan, ytan1@scu.edu

Welcome to SCU! Please complete this survey to help the Environment, Health and Safety (EHS) department understand your intended research activities so we can provide the support that you and your lab will need. Understanding your lab activities will also allow us to anticipate the engineering controls, other facility/utility needs, as well as evaluate the appropriateness of the lab space(s) assigned to you. EHS will reach out sometime within the first quarter of your arrival on campus to meet in person at your new lab so we can get to know you and your research plans at SCU.

Name: _____

Email / Contact information: _____

Department: _____

If you know building location and room number(s) of your office and lab, please list them:

Building: _____

Office location: _____

Lab Room(s): _____

WILL YOU BE WORKING WITH:

Biological Hazards	
<input type="checkbox"/>	Infectious agents or specimens
<input type="checkbox"/>	Recombinant DNA
<input type="checkbox"/>	Animal or human blood, tissue, waste, or other bodily fluids
<input type="checkbox"/>	Any human cell lines
<input type="checkbox"/>	Poisonous plants or animals
<input type="checkbox"/>	Allergens
<input type="checkbox"/>	Any Select Agent or Toxin listed under the Patriot Act: https://www.selectagents.gov/sat/list.htm
<input type="checkbox"/>	Other (please describe): _____
N/A (No biological hazard)	

Chemical Hazards

- Hazardous materials, i.e. materials with one or more of the following characteristics: flammable, combustible, pyrophoric, peroxide-forming, carcinogenic, mutagenic, teratogenic (birth defects and/or reproductive harm) oxidizing, corrosive, irritants, sensitizers
- Engineered nanomaterials (nanoparticles, nanotubes, quantum dots, etc.)
- Metal or mineral dusts (e.g. silica, asbestos, coal, iron), from welding, cutting, grinding, etc.
- Hazardous gases, fumes (e.g. soldering, spray paint), or particulates
- Generation of hazardous waste
- Other (please describe): _____

N/A (No chemical hazard)

Animals

List the animal(s) you will be working with: _____

N/A (No animal use)

Radioactive Materials, e.g. tritium, C-14, U-235

List isotopes: _____

N/A (No radioactive materials use)

Ionizing Radiation Producing Machines

Examples:

- X-ray (e.g. XRD, XRF, XPS)
- Electron Microscopy (e.g. SEM, TEM)
- Equipment containing radioactive sources (see also previous question)

Provide types of machines: _____

N/A (No use of ionizing radiation producing equipment)

Lasers

- Open beam
- Fully enclosed beam
- Equipment with embedded lasers

Laser or equipment type: _____

N/A (No laser use)

Other Non-Ionizing Radiation Producing Machines

Examples:

- Magnetic fields (e.g. NMR)
- RF/Microwaves
- UV light

Provide type of equipment: _____

N/A (No use of non-ionizing radiation producing equipment)

Pressurized, High-Vacuum, or Hydraulic Systems

Examples:

- High vacuum or ultra-high vacuum systems
- Compressed gases, either inert or hazardous (specify which gas)
- Pressure vessels

Provide brief details: _____

N/A (No pressurized, vacuum, or hydraulic system)

Extreme Temperatures

Examples: Cryogenic liquids, dry ice, furnaces, welding, open flames

Provide brief details: _____

N/A (No thermal hazard)

Mechanical Hazards

- Machining/Shop tools (e.g. drill presses, saws, lathes, grinding wheels)
- Lifting heavy objects (e.g. cranes, hoists, forklifts)
- Robotics
- Vehicular
- Hotwork (e.g. welding, grinding, brazing, activities that may produce sparks or fire hazard)
- Other (please describe): _____

N/A (No mechanical hazard)

Electrical Hazards

Examples: high voltage/current systems or controls (greater than 50V), battery packs

Provide brief details: _____

N/A (No electrical hazard)

Other Hazards

Examples:

- Elevated heights
- Confined spaces
- Vibration and loud noise
- Repetitive motion or other ergonomic concerns
- Field research

Describe briefly: _____

N/A

Will your research have any special facilities and infrastructure requirements, for example:

- Voltage requirements greater than 110V
- Extremely large equipment (e.g. door width limitations, floor load concerns)
- Equipment with large heat loads
- High ceiling
- Special ventilation needs (e.g. air exchange rates, directional air flow)
- Room temperature or humidity control requirements
- House gas or house vacuum systems
- Other: _____

Please briefly describe your research plans:

New Principal Investigator Guide to Laboratory Safety

Laboratory Safety Responsibilities

As the PI, you assume the ultimate responsibility and set expectations for safety within your lab. You are responsible for developing and maintaining lab procedures, ensuring everyone in the lab receives proper safety training, conducting hazard assessments as needed prior to new or changes to procedures, and addressing any safety concerns (either personnel or equipment) occurring in your lab. All accidents, incidents, or near misses involving you, your staff or your students must be [reported to EHS](#). You may be asked to participate in follow up investigations and actions.

During your time here at SCU, any shift in research direction that may introduce new hazards to your lab should be discussed in advance with EHS and lab operation directors to ensure appropriate changes in support.

Laboratory Designation

Laboratories and Shops in SCU are generally [categorized](#) into 3 hazard levels:

- High-Wet Hazard
- High-Dry Hazard
- Low Hazard

Depending on your assigned space and/or your research activities, the lab room will fall under one of the 3 hazard categories. The laboratory designation determines the [minimum lab attire requirements](#) and [lab inspection frequency](#). In a shared multi-PI lab, the hazard level is based on the **highest** hazard activities, materials, and/or equipment present in the lab.

Chemical Inventory and Safety Data Sheets (SDS):

SCU uses the Chimera software system to manage and track our [chemical inventory](#). Through Chimera, users (faculty, staff, research students, etc.) can search for chemicals, view inventory, and run hazard reports. All chemicals, whether it is for laboratory or shop use, must be purchased through the lab stockroom/purchasing manager. Upon receipt, the chemical container is entered and tracked on Chimera until completely consumed, or discarded as waste. The laboratory support staff helps maintain the inventory up-to-date by performing annual reconciliations. Please contact EHS to obtain an account for Chimera.

Chimera has an [online Safety Data Sheet \(SDS\) database](#) for SCU users and non-SCU visitors to look up SDS of specific chemicals or products in the inventory. No SCU account login is required to access the SDS database.

Institutional-Level Committees

The [Office of Research Compliance and Integrity \(ORCI\)](#) manages institutional policies related to biosafety, radiation safety, human subjects research, and use of live vertebrate animals. Review and approval may be required by the following committees for the teaching or research activities involving:

- Institutional Biosafety Committee (IBC) - use of recombinant DNA or biologically hazardous materials
- Radiation Safety Committee (RSC) - use of radioactive materials, equipment/materials with ionizing or non-ionizing radiation hazards
- Institutional Animal Care and Use Committee (IACUC) - use of live vertebrate animals
- Institutional Review Board (IRB) - human subjects research

Please visit the ORCI website or contact the office for more information.

Equipment Purchase:

EHS review is required for new or incoming equipment if it meets any of the following criteria below. This includes donated equipment, equipment on loan, or equipment transferred to SCU from other institutions:

- Contains or involves the use of hazardous chemical, biological, or radiological materials
- Contains inherent physical hazard, or may present hazards to users and others in the area, such as extreme temperature or pressure, high voltage/current, mechanical hazard.
- May generate potential fumes, odor, or hazardous particulates requiring the use of exhaust ventilation
- May require modification to building facilities (electrical power, water, exhaust etc.) for installation and use
- Requires development of a standard operation procedure or special protocols its safe use
- May require special regulatory permits for its use

Once you have identified the equipment you want for your new lab, please submit the [EHS Laboratory and Shop Equipment Review Form](#) as early as possible to ensure timely evaluation. EHS may reach out for additional questions.

Lasers

EHS maintains a laser inventory for Class 3B and Class 4 lasers. Any lasers meeting this classification must be registered through this [form](#). EHS will work with you to review the PPE and protocol requirements specific to your lasers.

Laboratory-Specific EHS Training Requirements

Your research staff and students must complete [at least 2 levels of laboratory training](#):

1. **General Lab Safety Training** through our online learning management system, [Camino](#). The type of Camino course(s) depends on their research project scope or lab space.
2. **Lab-specific training** conducted by the lab supervisor (that's you!), to cover the safety aspects of your research space. The New Employee EHS checklist for Technical Areas should be completed, and records maintained.

A refresher for lab-specific training is required annually, or whenever there are new or changes in protocol or equipment.

Once the above initial training requirements have been met, you can request the appropriate lab director to grant your staff or student access to your lab:

- SCDI Wet Labs and Alumni Science: Daryn Baker, dpbaker@scu.edu
- SCDI Dry Labs: David Zheng, yzheng1@scu.edu

Certain activities such as those involving use of live animals or radioactive materials will require additional training. Contact EHS or the relevant institutional-level committee for further information.

Waste and Other Environmental Programs

EHS manages [programs](#) in hazardous waste, biowaste (medical waste), air/water discharges, maintains all necessary environmental permits, and works with state and local regulatory agencies to ensure compliance. There are specific requirements for labeling, storage, handling, and disposal of certain waste; these requirements are different depending on whether the waste is hazardous, biological, or radiological. Please contact your laboratory support staff or EHS for any questions regarding waste disposal.

General EHS Information

The [EHS website](#) has resources such as staff contact list, incident reporting protocol, training requirements, and links to various safety programs, including laboratory and shop-specific areas. Feel free to contact EHS if you need any assistance - we're here to support you and your lab.

University Operations

The EHS department is part of the [University Operations](#) division, which includes Facilities, Shipping/Receiving, and Sustainability. Our offices are located in the [Facilities building \(Building 604\)](#). EHS works closely with facilities and other departments within the University Operations division, and can help connect you with the appropriate contacts for any facility needs or concerns.