Research activities, whether conducted in the field or laboratory, can pose unique hazards to researchers and their subjects, and compliance risks for both the investigators and the University. For these reasons and others, governmental regulatory agencies, funding entities, accrediting bodies, and other entities external to the University have established mandatory training requirements for persons involved with certain types of research.

Some of the required training focuses on ensuring that live research subjects, including humans or other vertebrate animals, are respected and not put in unnecessarily risky, stressful, or painful situations. Other required training, such as that regarding radiation hazards or bloodborne pathogens, is designed to ensure researchers understand the proper precautions needed to protect themselves during their work.

In each case where training is required, there are potentially significant consequences for non-compliance in addition to the risk to researchers and their subjects. These consequences can include monetary fines to the researcher's department, and withdrawal of funding to complete the study. Flagrant violations of these requirements may even result in loss of funding or accreditation to the University as a whole.

Faculty research oversight committees and staff offices have developed training programs to facilitate compliance with these various requirements. In some cases, the training can be completed by reading and documenting agreement with prepared materials. In other cases, in person training needs to be scheduled for the researchers.

The tables below summarize examples of various types of activities that require documented training, and provide links to campus groups who can provide the training. For many of the entries, external agencies have established additional requirements. Researchers should contact the listed offices to ensure compliance with all applicable requirements.

This document is available on the Research Administration and Compliance Office web site at http://rac.berkeley.edu/training.html.

### Training for All Personnel

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required for Whom?</th>
<th>Key Components</th>
<th>Required Training Frequency</th>
<th>Training Method</th>
<th>To Arrange Training Contact</th>
</tr>
</thead>
</table>
| Compliance Briefing: UC Ethical Values and Conduct, and Conflict of Interest for Researchers | All campus employees | • UC Ethical Values and Conduct  
• Conflict of Interest for Researchers | Annual | Online | To enroll: Search for the title in the UC Learning Center or log in to BLU and select the UC Learning Center link |
| Computer Workstation Ergonomics, Title: “Computer Health Matters” | Employees who use computers more than four hours per day and other equipment known to cause ergonomic injuries | • Review of campus program  
• Ergonomic injury risk factors  
• Safer work practices  
• Workstation evaluation | Initial training only | Classroom lecture or online training | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| Fire Extinguisher Training | Anyone by request | • Point, Aim, Squeeze, Shoot  
• Safety with Fire Extinguisher | Not required | Classroom | Contact EH&S: 510-642-3073 or ehstrain@berkeley.edu |
## Training for All Personnel (continued)

<table>
<thead>
<tr>
<th>Training Area</th>
<th>Audience</th>
<th>Training Content</th>
<th>Frequency</th>
<th>Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>UC Sexual Harassment Prevention Training</strong></td>
<td>Required for supervisors. Recommended for all personnel</td>
<td></td>
<td>Once every two years</td>
<td>Online</td>
</tr>
<tr>
<td><strong>Workplace Health and Safety Programs Awareness</strong>&lt;br&gt;Injury and Illness Prevention Plan (IIPP)/Building Emergency Plan (BEP)</td>
<td>All campus employees</td>
<td>- Roles and Responsibilities&lt;br&gt;- Workplace hazards and their controls&lt;br&gt;- Facility evacuation procedures&lt;br&gt;- Fire prevention and control measures</td>
<td>Initial training only, and then again if programmatic details change</td>
<td>Online</td>
</tr>
<tr>
<td>Subject</td>
<td>Required for Whom</td>
<td>Key Components</td>
<td>Required Training Frequency</td>
<td>Training Method</td>
</tr>
<tr>
<td>----------------------------------------------</td>
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</tr>
<tr>
<td><strong>Animal Care and Use</strong></td>
<td>All faculty, students, and research personnel who use live vertebrate animals</td>
<td>See <a href="http://rac.berkeley.edu/training.html">Training Requirements for Animal Users</a></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in research or instruction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Controlled Substances Used in Research</strong></td>
<td>Anyone working with controlled substances in research</td>
<td>• Administrative approval process</td>
<td>Initial training only</td>
<td>Online</td>
</tr>
</tbody>
</table>
| **EHS 103 Northwest Animal Facility (NAF)**  | All users of the Northwest Animal Facility (required for cardkey access, in addition to basic CITI Animal Training) | • Basic safety<br>
• Hazardous materials safety<br>
• Introduction to the biohazard containment facility for BL2 and BL3 users<br>
• Brief tour of the facility | One time initial in person; annual refreshers are online:<br>
  • NAF Basic Safety Refresher<br>
  • NAF Hazardous Materials Safety<br>
  • NAF Biohazard Containment Facility | Classroom lecture, refreshers online |
| **Human Subjects Research Training**         | Faculty (with some exceptions), staff, and students engaged in human subjects      | See [Education and Training for Human Subjects Research](http://rac.berkeley.edu/training.html) |                             |                |                                                                                             |
### Responsible Conduct of Research

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required for Whom?</th>
<th>Key Components</th>
<th>Required Training Frequency</th>
<th>Training Method</th>
<th>To Arrange Training Contact</th>
</tr>
</thead>
</table>
| Responsible Conduct of Research (RCR) | • NSF: Undergraduate and graduate students and postdoctoral scholars supported by NSF grants to conduct research  
• NIH: All trainees, fellows, participants, and scholars receiving support through any NIH training, career development award (individual or institutional), research education grant, and dissertation research grant  
• USDA NIFA: All program directors, faculty, undergraduate students, graduate students, postdoctoral researchers, and any staff participating in the research project | • Responsible conduct of research                                                                                     | • NSF: Within 60 days of the individual’s becoming supported by NSF funding  
• NIH: Instruction must be undertaken at least once during each career stage, and at a frequency of no less than once every four years | • NSF: Online for graduate students and postdoctoral scholars; read for undergraduates  
• NIH: Varies, online training alone is not acceptable to NIH  
• USDA NIFA: Online or in person | • NSF: [CITI Online Course](http://rac.berkeley.edu) for graduate students and postdoctoral scholars; [Introduction to the Responsible Conduct of Research (RCR): A Summary for Undergraduate Researchers](http://rac.berkeley.edu) for undergraduates  
• NIH: [RCR Training at UC Berkeley](http://rac.berkeley.edu)  
• USDA NIFA: [CITI](http://rac.berkeley.edu) or other |
## General Laboratory Safety

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required for Whom?</th>
<th>Key Components</th>
<th>Required Training Frequency</th>
<th>Training Method</th>
<th>To Arrange Training Contact</th>
</tr>
</thead>
</table>
| **EHS 101 Fundamentals of Laboratory Safety** | Anyone who works in a laboratory with hazardous materials or hazardous operations | • Chemical hazards  
• Laboratory Standard Operating Procedures (SOPs)  
• Emergency procedures  
• Contents of the facility’s Chemical Hygiene Plan (CHP)  
• How to identify and evaluate chemical hazards using Safety Data Sheets and chemical label | Once every three years | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **EHS 102 Hazard Communication-Including Globally Harmonized System (GHS)** | All personnel who work with hazardous materials and/or conduct a hazardous operation | • Hazard Communication Program and the Globally Harmonized Hazard Identification System | Initial training and when any changes in hazards occur | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **Hazardous Materials Spill Response Training** | All personnel who work with hazardous materials and/or conduct a hazardous operation | • Basic spill response procedures and supporting programs | Annually, after the completion of EHS 101 | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **Personal Protective Equipment**           | All laboratory personnel who work with hazardous materials and/or conduct a hazardous operation | • Proper Use of PPE | Initial training and when any changes in hazards occur | Online | To enroll: Use Laboratory Hazard Assessment Tool (LHAT) |
| **EHS 104 Laboratory Safety Awareness Training for Support Personnel** | Support personnel working in or adjacent to lab spaces who do not conduct research | • Awareness of typical laboratory hazards and how to protect from accidental exposures | Initial training only | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **Proper Use of Fume Hood Video**           | All personnel who use fume hoods | • Sash height  
• Working inside hood  
• Environmental protection | Initial training only | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
### Biological Safety

<table>
<thead>
<tr>
<th>Subject</th>
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</tr>
</thead>
</table>
| EHS 201 Biosafety in Laboratories  
EHS 204 Refresher | Researchers who work with human, animal, or plant pathogens; human-derived materials; or recombinant DNA                                                                                                           | • Safe handling procedures  
• Personnel protective equipment  
• Animal biosafety  
• Biosafety Levels 1 and 2                                                                 | Initial training and refresher every three years; work with human-derived materials requires BBP annual refresher | Classroom lecture and online refresher training | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant                  |
| EHS 202 Bloodborne Pathogens | Anyone who has potential occupational exposure to human body fluids or human source materials                                                                                                               | • Safe handling procedures  
• Exposure Control Plan                                                                 | Initial and annual refresher training                                                                 | Online                                                                 | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant                  |
| EHS 203 Biosafety: Principal Investigator Responsibilities | PIs responsible for overseeing work with recombinant DNA, blood, or other infectious agents                                                                                                                   | • NIH requirements  
• PI responsibilities                                                                 | Initial training only                                                                 | Online                                                                 | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant                  |
| Research Group Training Template- Recombinant/ Non-Recombinant DNA | Everyone working with biological materials                                                                                                                                                                     | • Lab-specific biosafety training on the hazards of the specific experimental procedures used in your laboratory | Initial training only                                                                 | PowerPoint presentation delivered by and to lab personnel | Contact your PI or lab manager  
• Recombinant DNA (PPT)                                                    |
| Select Agents (Biological) | All personnel authorized to enter use and storage location of select biological agents                                                                                                                         | • Select agents regulations  
• Select agents laboratory safety  
• Emergency and security plan                                                                 | Initial training only                                                                 | Classroom lecture                                                                 | EH&S Biosafety Officer: bso@berkeley.edu |
| Transgenic Plant Biosafety Training | Everyone working with transgenic plants                                                                                                                                                                         | • Fundamentals of plant biosafety and the requirements for biological waste disposal, transport and permits | Initial training only                                                                 | Classroom lecture                                                                 | EH&S Biosafety Officer: bso@berkeley.edu |
| Aerosol Transmissible Disease (ATD) Research Safety | Laboratory workers with potential airborne exposure to BSL-3 transmissible pathogens                                                                                                                          | • Safe handling procedures  
• Respiratory protection  
• Engineering controls  
• Biosafety Plan                                                                 | Initial and annual refresher training                                                                 | Initial and annual refresher training                                                                 | EH&S Biosafety Officer: bso@berkeley.edu |
| Biosafety Level 2 and Level 3 Access for Maintenance Staff | Personnel who service Biosafety Levels 2 and 3 facilities                                                                                                                                                     | • Signs and Postings  
• PPE Procedures  
• Access procedures                                                                 | Initial training only                                                                 | Classroom lecture                                                                 | EH&S Biosafety Officer: bso@berkeley.edu |
# Hazardous Materials

<table>
<thead>
<tr>
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</thead>
</table>
| Chemical Hygiene Plan (CHP) | Anyone who works with hazardous materials in laboratories | • Lab-specific procedures for safe use of chemicals  
• Emergency procedures  
• Standard Operating Procedures (SOPs) for hazardous materials and operations | Initial training and whenever the CHP is revised. CHP must be reviewed by lab personnel annually for accuracy. And again when there is a change to the chemicals worked with or how they are stored or handled. | Read and sign document posted in the laboratory; documented training on SOPs is to be provided in the lab | Researcher, lab manager, or lab safety contact  
Contact EH&S if your laboratory has no CHP: 510/642-3073 or ehs@berkeley.edu  
Chemical Hygiene Plan |
| Hazardous Waste Program Training | All personnel who generate hazardous waste | • Storage  
• Regulatory requirements  
• Handling procedures  
• Labeling | Initial training only | Online | To enroll: Hazardous Waste Program |
| Hazardous Equipment Safety | Researchers, support staff, and students authorized to use equipment | • Facility specific equipment hazards and controls  
• Safe operations | Initial training only | Documented discussion in lab or shop meeting | Researcher, lab manager, or lab safety contact  
Contact EH&S if your laboratory has no CHP: 510/642-3073 or ehs@berkeley.edu |
| Hazardous Materials Shipping, General Awareness  
Hazardous Materials Shipping Dry Ice | Persons who ship hazardous materials and specimens on dry ice from campus | • Proper packaging and labeling  
• Regulations regarding shipments of hazardous materials | Initial and refresher training every two years | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| Cryogens Safety | Persons who work with cryogenic materials | • Storage, transfer and safe use of cryogenic materials, PPE | | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| Respiratory Protection | Those in the Respiratory Protection Program | • Proper selection, fitting, use, and storage of respirators | Initial training, with annual refreshers | Medical evaluation, online or in person training and Fit test | Contact EH&S: 510/642-3073 or ehs@berkeley.edu |
# Radiation Safety and Laser Safety

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required for Whom?</th>
<th>Key Components</th>
<th>Required Training Frequency</th>
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<th>To Arrange Training Contact</th>
</tr>
</thead>
</table>
| **EHS 401 Radioactive Materials User Training (Radiation Safety)** | Everyone who works with radioactive materials (RAM), radiation producing machines (RPM) or sealed sources | ● Radiation exposure hazards and their control  
● Regulations regarding radiation safety  
● Content of the campus license  
● Incident reporting  
● Dosimetry and other monitoring techniques  
● Researcher responsibilities | Initial and annual refresher training  
Refresher online  
RPM online | Classroom lecture, online RPM, online retraining  
RAM & RPM, online sealed sources | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **EHS 402 Refresher** | | | | | |
| **EHS 403 Radiation Producing Machines (3 modules)** | | | | | |
| **Sealed Source Training and Quiz** | | | | | |
| **EHS 404 Radiation Safety for Ancillary Personnel** | If you DO NOT work directly with radioactive materials or other radiation sources, but DO work in close proximity to (such as in the same room as) others who do | ● Signs, postings and radiation safety basics | Initial training only | Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **EHS 301 Laser Safety** | Anyone who works with Class 3B or Class 4 laser(s) | ● Laser hazards and control measures  
● Proper procedures for working with lasers | Initial classroom lecture, three-year online refresher training | Classroom lecture and online refresher | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
## Agricultural/Field Safety

<table>
<thead>
<tr>
<th>Subject</th>
<th>Required for Whom?</th>
<th>Key Components</th>
<th>Required Training Frequency</th>
<th>Training Method</th>
<th>To Arrange Training Contact</th>
</tr>
</thead>
</table>
| **Field Safety**      | Researchers or instructors working in remote locations                           | - Development of a specific field safety plan for the work location             | One time (per field location)   | In person upon request and Guidance Document | Contact [EH&S: 510/642-3073](tel:510-642-3073) or [ehs@berkeley.edu](mailto:ehs@berkeley.edu)  
**Field Safety Guidance Document** |
| **First Aid and CPR** | Employees who do field work remote from medical facilities                       | - Basic first aid measures                                                      | Initial and refresher training every two years | Lecture and hands-on               | Contact [Recreational Sports](mailto:RecreationalSports@berkeley.edu)  
**Field Safety Guidance Document** |
| **Pesticide Safety**  | Researchers using pesticides in small quantities (non-commercial application)    | - Overview of pesticide hazards                                                  | Initial training only          | Lecture and hands-on               | Contact [EH&S: 510/642-3073](tel:510-642-3073) or [ehs@berkeley.edu](mailto:ehs@berkeley.edu)  
**Field Safety Guidance Document** |
| **Scientific Diving** | Everyone SCUBA diving for science using UC equipment, diving from UC-owned property, or diving as a student or employee of UC | - Diving physics  
- Physiology  
- Medicine  
- Rescue  
- Decompression  
- Theory  
- Navigation  
- Environment  
- Marine life  
- Research methods  
- Equipment  
- Scientific diving standards | Certification                        | In person                         | [Scientific Diving Program](http://rac.berkeley.edu/training.html)  
**Field Safety Guidance Document** |
| **Working at the Richmond Field Station** | RFS workers                                                                 | - RFS history  
- Do’s and Don’ts                                                             | Initial training only          | Online                             | To enroll: Search for the title in the [UC Learning Center](http://rac.berkeley.edu/training.html)  
If your access is denied, use the [UC Learning Center Access Assistant](mailto:LearningCenterAccessAssistant@berkeley.edu)  
**Field Safety Guidance Document** |
<table>
<thead>
<tr>
<th>Subject</th>
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<th>Training Method</th>
<th>To Arrange Training Contact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shop Safety</td>
<td>Persons using University shops</td>
<td>• Detailed shop safety components</td>
<td>In person and Shop Safety Manual</td>
<td>Contact <strong>EH&amp;S</strong>: 510/642-3073 or <a href="mailto:ehs@berkeley.edu">ehs@berkeley.edu</a></td>
<td></td>
</tr>
</tbody>
</table>
| Aerial Lift and Elevated Work Platform Training | Personnel who operate specific types of owned/rented aerial lifts and elevated work platforms | • Hazards associated with aerial lifts  
• Lift and work zone inspections  
• Fall protection  
• Operation/traveling/loading  
• Overhead protection  
• Stability | Once, then again if operators change equipment, get in an accident or are observed operation a lift in an unsafe manner | Online and in-person hands-on | Contact **EH&S**: 510/642-3073 or ehs@berkeley.edu  
To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| Asbestos and Lead Awareness Training | Maintenance, custodial staff, and others who may disturb asbestos containing materials and/or lead paints | • When asbestos and lead are potentially dangerous  
• Potential adverse health effects  
• Avoid unnecessary exposure  
• Regulatory compliance | Classroom lecture | Contact **EH&S**: 510/642-3073 or ehs@berkeley.edu |
| Confined Space Entry             | Anyone who may enter vessels, vaults, or other confined spaces                   | • Hazards of confined space entry  
• Atmospheric monitoring requirements and techniques  
• Communication procedures  
• Emergency and rescue procedures | Initial training only | Classroom lecture | Contact **EH&S**: 510/642-3073 or ehs@berkeley.edu |
| Crane Safety                     | Employees who operate cranes                                                      | • Safe lifting procedures  
• Lifting capacities  
• Load securing | Initial training only | Lecture and hands-on | Contact **EH&S**: 510/642-3073 or ehs@berkeley.edu |
<p>| Driver Safety                    | Vehicle operators                                                                 | • Space cushion driving                                                          | Classroom lecture            | Contact <strong>EH&amp;S</strong>: 510/642-3073 or <a href="mailto:ehs@berkeley.edu">ehs@berkeley.edu</a> |
| Energy Isolation/ Lockout Tagout | Employees who adjust motors or other moving or electrical equipment              | • Proper procedures for controlling hazardous energies when working on moving or electrical equipment | Initial training only | Classroom lecture | Contact <strong>EH&amp;S</strong>: 510/642-3073 or <a href="mailto:ehs@berkeley.edu">ehs@berkeley.edu</a> |
| Fall Protection and Ladder Use   | Those who work in heights above 7 feet                                           | • Ladder use and fall protection equipment                                        | Initial training only | Classroom lecture | Contact <strong>EH&amp;S</strong>: 510/642-3073 or <a href="mailto:ehs@berkeley.edu">ehs@berkeley.edu</a> |</p>
<table>
<thead>
<tr>
<th>Shop/Industrial Safety (continued)</th>
<th></th>
</tr>
</thead>
</table>
| **Forklift Operation** Employees who operate forklifts | - Fundamentals  
- Stability and capacity  
- Load handling  
- Safe driving practices  
- Safety standards  
- Inspection and maintenance | Every three years  
Online and in-person hands-on | Contact EH&S: 510/642-3073 or ehs@berkeley.edu  
To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **Hearing Conservation** Employees who are exposed to high (>85 dBA) noise levels and those who are in the Hearing Conservation Program | - Noise hazards  
- UCB Hearing Conservation Program | Annual  
Online | To enroll: Search for the title in the UC Learning Center  
If your access is denied, use the UC Learning Center Access Assistant |
| **Heat Illness**  |
|  |
|  |
|  |
| **High Voltage Electrical Safety** Employees who work on live high-voltage equipment or circuits | - Health effects of heat  
- How to respond to symptoms  
- Preventing heat exhaustion  
- Water, Rest, Shade | Initial training only  
Classroom lecture | Contact EH&S: 510/642-3073 or ehs@berkeley.edu |
| **Hot Work** For those who are involved with welding | - PPE  
- Fire Safety | Initial training only  
Classroom lecture | Contact EH&S: 510/642-3073 or ehs@berkeley.edu |