

Training Requirements Standard for Personnel Categories

1. Laboratory Researchers

Laboratory researchers must complete training to ensure awareness of the hazards and risks associated with A/BSL-3 and to be fully capable of working safely to protect themselves, the laboratory, the community and the environment from potential contamination. With guidance and strict oversight, researchers must be trained to perform all necessary experimental and laboratory safety protocols. After successful practical demonstration of proficiency, final approval and access to the facility shall be granted by the HCLD, the PI and if applicable, the laboratory manager.

Researcher Initial A/BSL-3 Training

Prior to entering the A/BSL-3 lab for hands-on training:

- Candidate must be listed on an active Biological Use Authorization (BUA) and if applicable, an active Animal Use Protocol (AUP).
- Candidate must complete all required EH&S training courses (e.g. Recombinant DNA template, Illness and Injury Prevention Program (IIPP), Blood Borne Pathogen (BBP), lab safety, radiation and laser safety if applicable, etc.).
- Candidate must enroll in the campus Occupational Health Program and receive medical clearance to work in A/BSL-3.

I. Complete A/BSL-3 laboratory basic training (UCI BSL-3 Training or in-house) or verify previous equivalency

II. Complete A/BSL-3 laboratory specific training

- A. Overview of A/BSL-3 facility (layout, HVAC system, emergency equipment, etc.)
- B. Read and understand A/BSL-3 Biosafety Manual
- C. Read and understand facility specific SOPs and policies
- D. Read and understand research project specific SOPs and BUAs
- E. Laboratory equipment training
- F. Agent inactivation policies (if applicable)
- G. Entry and exit procedures
- H. Waste management
 - I. Autoclave operation and maintenance
 - J. Incident response and reporting requirements
 - K. Removal of materials and equipment from A/BSL-3 facility
 - L. Policies and procedures for shipping/receiving materials and
 - M. Inventory control

III. Agent Specific training

- A. Agent-specific safety data sheet (e.g. Pathogen Safety Data Sheets)
- B. Signs & Symptoms
- C. Medical surveillance plan
- D. Animal handling procedures (if applicable)
- E. Aerosol transmissible disease standard

IV. Incident/Emergency Management training

- A. Spills inside/outside BSC
- B. General facility failures – HVAC and fire alarms
- C. Accidental Exposure Procedures
- D. Medical emergencies
- E. Incident response plan
- F. Security issues
- G. Natural disasters

V. Demonstrate Proficiency (see Appendix B)

- A. Entry and exit procedures – including donning and doffing PPE
- B. Biosafety cabinet (BSC) usage including set-up and clean-up
- C. Demonstrate a series of protocols (e.g., small spill cleanup, subculture, centrifugation, aliquoting, and project specific SOPs)
- D. Lab specific equipment procedure proficiency (e.g. centrifugation, homogenization, etc.)
- E. Waste management including autoclave
- F. Facility internal alarm response
- G. Animal (ABSL-3) specific procedures (if applicable)

Researcher Annual Refresher Training

- Ensure all required safety training courses are up to date (i.e. BBP, lab safety, IIPP, waste management, etc.)
- Ensure that annual medical clearance has been received

I. General With emphasis on any updates/revisions to the following topics:

- A. Review of BSL-3 facility updates (layout, HVAC engineering; location(s) of emergency equipment (shower, eyewash, spill kit)
- B. Review any support personnel updates (i.e. new Facilities Management personnel, EH&S personnel, new lab personnel if shared facility, etc.)
- C. Review of any updates to BSL-3 Biosafety Manual
- D. Review of any updates to facility specific SOPs
- E. Review of any updates to applicable project specific SOPs
- F. Review any applicable updates to medical surveillance
- G. Review any updates to entry & exit procedures

- H. Review any updates to laboratory operations
- I. Review any updates to incident reporting requirements
- J. Review any updates to policies & procedures to remove materials and equipment from BSL-3 facility
- K. Review policies & procedures for shipping materials

II. Review of any updates to Agent/Protocol/Research specific training

- A. Agent-specific safety data sheet (PSDS)
- B. Animal handling and procedures (if applicable)
- C. Key research SOPs

III. Review of any updates to Incident/Emergency Management Plan/SOPs

IV. Review Aerosol Transmissible Disease Standard

V. Demonstrate Proficiency (see Appendix B)

- A. Entry & exit procedures
- B. Donning & doffing of PPE
- C. BSC usage
 - i. Proper set up and disinfection of BSC
 - ii. Proper work techniques within BSC
 - iii. Research specific SOPs
- D. Waste management
 - i. Procedures for preparing biohazardous waste for decontamination prior to disposal/removal from BSL-3 facility
 - ii. Autoclave operation
 - iii. Liquid waste
- E. Emergency Management
 - i. Spill clean-up
 - ii. Emergency response (participation in live-action drills if possible)
- F. Animals procedure(s) (if applicable)

2. Support Staff

Animal Care Staff

Staff shall be provided all facility-specific SOP/Policy training. A/BSL-3 training shall include all applicable A/BSL-3 husbandry and animal care training. Specific protocols will be dependent upon the A/BSL-3 laboratory risk assessment.

Animal Care Staff Initial A/BSL3 Training

Prior to A/BSL-3 lab training:

- Candidate must complete all required safety training courses

- Candidate must enroll in the campus Occupational Health Program and receive medical clearance to work in A/BSL-3.

I. Complete A/BSL-3 laboratory specific training

General training:

- A. Overview of A/BSL-3 facility (layout, HVAC system, emergency equipment, etc.)
- B. Read and understand A/BSL-3 animal care specific SOPs and the Animal Biosafety Manual
- C. Introduction to ABSL3 safety practices, including:
 - The type of work is being done in the lab
 - Introduce staff to key researchers
 - Show main pieces of equipment handled in the facility (other than animal handling equipment- lab awareness)
- D. Entry and exiting procedures: donning/doffing PPE
- E. Health care and animal care issues specific to each research protocol:
 - Decontamination procedures
 - Waste management
 - Autoclave operation
 - Incident reporting requirements
- F. Cage changing procedures
- G. Policies and procedures for removal of items and equipment from A/BSL-3 facility

II. Agent Specific training

- A. Agent-specific safety data sheet (PSDS)
- B. A/BSL-3 animal handling procedures
- C. Aerosol transmissible disease standard (if applicable)
- D. Notification of animal welfare and laboratory issues

III. Incident/Emergency Management training

- A. Spills inside BSC
- B. Spills outside BSC from researchers
- C. Animal escapee
- D. General facility failures
- E. Critical system alarms (e.g. HVAC, freezer, etc.)
- F. Medical emergencies
- G. Security issues
- H. Natural disasters

IV. Demonstrate Proficiency (see Appendix B)

- A. Entry and exit procedures (e.g. donning and doffing)
- B. Biosafety cabinet (BSC) usage:
 - Preparation and decontamination of BSC

- Demonstrate protocols – animal handling
- Cage change in BSC – buddy system and single person
- C. Waste management
- D. Autoclave operations and safety
- E. Incident response
- F. Animal BSL-3 specific procedures

Animal Care Staff Annual Refresher Training

- **Ensure all required safety training courses are up to date (i.e. BBP, lab safety, IIPP, waste management, etc.)**
- **Ensure that annual ABSL3 medical clearance has been received**
- **Ensure completion of all BSL2 Laboratory Animal Care annual refresher trainings**

Complete Review of A/BSL-3 specific training

- A. Review of A/BSL-3 facility (layout, HVAC engineering, location(s) of emergency equipment (shower, eyewash, spill kit)
- B. Entry and exit procedures
- C. Review animal handling and procedures
 - Bringing animals into ABSL3
 - Cage change
 - Disposal of carcasses
 - Research specific SOPs
- D. Review waste management (when appropriate)
 - Autoclave operation for each type of biohazard waste
 - Chemical waste (if applicable)
- E. Review of any updates to Agent/Protocol/Research specific training
 - Agent-specific safety data sheet (PSDS)
 - General overview of research program goals
- F. Review of any updates to Incident/Emergency Management Plan
 - Case scenarios; incidents during business hours vs. after hours
 - Contact lists. Chain of command

Facilities Services Personnel with Unescorted Access Privileges

At the discretion of the HCLD, some facilities services personnel may obtain unaccompanied access privileges to the A/BSL-3 laboratories (e.g. during annual shutdown).

Facilities Services Personnel Initial Training

Prior to A/BSL-3 lab training:

- Candidate must complete all required safety training courses
- I. **Complete A/BSL-3 specific training**
 - A. Introduction to microbiological research and A/BSL-3 practices

- B. General information about A/BSL-3 facility (e.g. layout, HVAC system, etc.)
- C. Facility risk assessment and management
- D. Entry and exit procedures:
 - Donning and doffing
 - Decontamination of tools and equipment
- E. Personal protective equipment
- F. Incident response
- G. A/BSL-3 operations and maintenance
- H. Facility decontamination

II. **Proficiency demonstrations** – donning and doffing

III. **A/BSL-3 verification, inspection and preventive maintenance**

- A. Annual shutdown expectations
- B. List of procedures
- C. List of personnel involved and assigned roles
- D. Task schedule
- E. Reports

Facilities Services Personnel Annual Refresher Training

- **Ensure all required training courses are up to date**

Complete BSL-3 specific refresher training

- A. Review of BSL-3 facility (layout, HVAC engineering, location(s) of emergency equipment (shower, eyewash, spill kit)
- B. Review of any updates to facility specific SOPs
- C. Review of entry & exit procedures
- D. Review of any updates to Agent/Protocol/Research specific training
 - Agent-specific safety data sheet (PSDS)
 - General overview of research program goals
- E. Review of any updates to Incident/Emergency Management Plan/SOPs
- F. Proficiency Demonstrations
 - Entry & exit procedures
 - Donning & doffing of PPE
 - Emergency Management (participation in live-action drills if possible)

3. Visitors and Escorted Personnel

An authorized user must serve as a full-time escort to visitors and unapproved personnel. The designated escort must provide a brief, comprehensive training covering the infectious agents handled in the facility, biocontainment, emergency procedures and safety equipment. The visitor

must be advised of all pre-existing medical conditions that could increase the risk of disease or injury resulting from an exposure to biological agents accessed in the A/BSL-3 laboratory.

Visitors must sign an acknowledgement form confirming that they have received and understood the information provided in this training.

I. Site specific Training

- A. Facility layout
- B. Entry and exit procedures (e.g. Donning and doffing PPE)
- C. Agent Specific Training
 - Agent-specific safety data sheet (PSDS)
 - Signs, symptoms and pre-existing conditions risks
 - Contact information
- D. Emergency Procedures
 - Evacuation plan and emergency exit
 - Natural disaster response
 - Facility alarms (internal and external)
- E. Training verification and documentation

4. Emergency First Responders

The primary purpose of this training is to prepare campus and local first responders to safely provide the necessary support services in the event of an emergency involving the high containment facility and/or research personnel working therein. The HCLD is responsible for coordinating annual trainings and refreshers with campus and local first responders should be invited to participate.

I. A/BSL-3 Specific training

- A. General Overview of A/BSL-3 facility
- B. Number and location(s) of A/BSL-3 laboratories on campus
- C. Introduction to microbiological research and A/BSL-3 practices
- D. General A/BSL-3 practices and procedures awareness
- E. Biosecurity components (e.g. facility access)
- F. BSL3 key emergency contact personnel (SMEs)
- G. Laboratory personnel training requirements for CPR/AED, decontamination, others.

II. Drills

- A. Co-development of emergency management plan and SOPs
- B. Participation in table-top and live action drills to refine and validate plans/SOPs

Appendix A: Research personnel initial training checklist

User Name:	UC NetID:			
Principal Investigator:	Institution/Department:			
Designated Trainer/Mentor:	Facility:			
High Containment Laboratory Director:				
SECTION I- PRELIMINARY TRAINING	Date Completed	User Initials	Trainer Initials	Verifier
Complete all EHS Trainings				
Demonstrate proficiency working in BSL2 laboratory				
Completion of animal care training (if applicable)				
Complete A/BSL-3 Basic Training				
Facility specific Documents	Date Completed	User Initials	Trainer Initials	HCLD Initials
Read and understand current version of the A/BSL3 Manual				
Read and understand A/BSL3 Security Plan (if applicable)				
Read and understand facility specific SOPs				
Read and understand project specific SOPs				
Agent specific Training	Date Completed	User Initials	Trainer Initials	HCLD Initials
Complete agent specific training for all agents worked with in the A/BSL3 facility. Agents used/stored in the facility:				
Exposure Control Plan (ECP) for pathogen(s)				
Occupational Health Review:	Date Completed	User Initials	Trainer Initials	HCLD Initials
UC Occupational Health Program				
A/BSL-3 Medical clearance				

Additional comments				
Section II will be carried out inside the A/BSL3 facility. The user will have to show an understanding and capability to carry out the following procedures.				
SECTION II – FACILITY SPECIFIC TRAINING				
Entering and Exiting	Date completed	User Initial	Trainer Initials	HCLD Initials
Entry Procedures (keycard, biometrics, etc.)				
Knowledge of entry procedure (no piggybacking, log book, signs info)				
Knowledge of airflow alarm operation (internal alarms)				
PPE Training	Date completed	User Initial	Trainer Initials	HCLD Initials
Donning/Doffing of PPE				
Respirator (N95, PAPR) preparation, use and maintenance				
Exit Procedures	Date completed	User Initial	Trainer Initials	HCLD Initials
Handwashing				
Exiting from the laboratory				
Biosecurity	Date completed	User Initial	Trainer Initials	HCLD Initials
Physical Security (e.g Keycard access, Biometrics, etc.)				
Personnel Security (suitability, workplace violence, etc.)				
Inventory control and record keeping				
Transport Security				
Information Technology Security				
Lab operations	Date Completed	User Initials	Trainer Initials	HCLD Initials
Biosafety cabinet set up and use				
Minimize aerosol formation				
Centrifugation procedure				

Transportation of biohazardous material within the lab				
Decontamination/Awareness of effective disinfectant against agents used				
Proper PPE usage (Doffing/Decon secondary gloves, sleeves, etc.)				
Waste Management	Date Completed	User Initials	Trainer Initials	HCLD Initials
Solid waste collection and preparation				
Liquid waste management				
Sharp waste management				
Mixed waste management (chemical/bio/rad)				
Animal waste management (Carcasses, bedding, cages)				
Autoclave Operations (biological indicators, failures)				
Retrieving waste post-autoclaving				
Animal work (Project dependent)	Date completed	User Initial	Trainer Initials	HCLD Initials
Animal Husbandry procedures				
Handling and restraining of animals				
Animal inoculation procedures				
Animal necropsy procedures				
Animal tissue/cells inactivation (if applicable)				
Incident Response Procedures	Date Completed	User Initials	Trainer Initials	HCLD Initials
Security breach response				
Knowledge of facility exits (primary, secondary, etc.)				
Spill cleanup inside BSC				
Spill cleanup outside BSC				
Medical event response (conscious vs unconscious)				

Fire Alarm response				
BSC failure response				
HVAC Alarm response				
Response for Theft, Loss and Release and Inventory Discrepancies (if applicable)				
Incident reporting requirement				
Recovery Plan (Continuity of Operations)				
Select Agents & Toxins Training (if applicable)	Date completed	User Initial	Trainer Initials	HCLD Initials
Biosafety plan				
Biosecurity plan (refer to above section)				
Incident response plan				
Inventory control				
Biocontainment				
Security risk assessment (SRA)				
Specific work related				
Tier 1 BSAT				
Personnel suitability assessment				
Insider threat awareness				

SECTION III – ACCESS APPROVAL

This user was given full, unescorted access to the A/BSL3 facility on _____ (Date). This access is approved by the Principal Investigator, High Containment Laboratory Director and the Lab Manager and will expire one year from this approval date. Expiration date _____

<hr/> <p>Principal Investigator Name</p>	<hr/> <p>Principle Investigator Signature</p>
<hr/> <p>High Containment Lab Director Name</p>	<hr/> <p>High Containment Lab Director Signature</p>
<hr/> <p>Lab Manager Name</p>	<hr/> <p>Lab Manger Signature</p>

The training documentation will be maintained by the Lab Manager and the High Containment Lab Director.

Security breach response					
Knowledge of facility exits					
Spill containment inside BSC					
Spill containment outside BSC					
Fire Alarm response					
BSC Alarm response					
HVAC Alarm response					
Response for Theft, Loss and Release and Inventory Discrepancies					
Incident reporting requirement					
Recovery Plan					
Animal work (Project dependent)					
Animal husbandry					
Animal Handling					
Handling and restraint of non-infected animals and infected with BSL3 agents					
Waste Management (bedding, carcasses, etc.)					

SECTION III – ACCESS APPROVAL

This user was given full, unescorted access to the A/BSL3 facility on _____ (Date). This access is approved by the Principal Investigator and the Lab Manager and will expire one year from this approval date. Expiry date _____.

Principal Investigator Name

Principal Investigator Signature

High Containment Lab Director Name

HCLD Signature

Lab Manager Name

Lab Manager Signature

The training documentation will be kept by the Lab Manager and the High Containment Lab Director.

Appendix D: Visitor training checklist

Training Record for Visitors and Unapproved Personnel Accessing BSL-3

IMPORTANT: No entry is allowed of unauthorized personnel when the following is occurring unless authorized by the PI in consultation and approval by HCLD

- Working with high risk respiratory pathogens requiring BSL-3 containment and practices.
- Containment has been compromised (e.g., loss of negative pressure, breach in security of the facility or agent, unsafe practices)
- Natural disasters (e.g., fire, earthquake, flood, power outage)
- Laboratory incident involving biohazard agents (e.g., spill, exposure, etc).

Date of the visit:

Name (Print):

Affiliation:

Purpose for the Visit (briefly explain):

Security Training:

- Facility is secure and alarmed. (Alarms directed to UCPD)
- All agents are secured and inaccessible. You will not be allowed to handle agents.
- Full time escort (must follow instructions of escort at all times).
- Remove nothing from the facility without permission.

General Training:

- Entry/Exit procedure for the select agent laboratory (e.g., ID photocopied, issuance of badge, escort, donning/doffing PPE)
- Agent-specific Hazard with symptoms and post-exposure management
- Occupational health (high risk personnel: pre-existing conditions)
- Emergency/Incident Response Procedure (Loss of negative pressure, emergency contacts, evacuation procedure)
- Laboratory orientation (e.g., sink, eyewash, shower, fire extinguisher)

Additional Training based on consultation with RO/ARO:

- Not applicable (no select agent is accessed, BSL-3 containment is not compromised, no emergency incidents, etc)
- Applicable (*Check all that apply*)
 - Medical surveillance and immunization requirements/recommended
 - Respirator training and fit tested verified for type of respirator
 - Medical Waste Management
 - Other (specify):

Visitor Assurance:

- I attest that prior to accessing the select agent laboratory I received instructions on specific hazards associated in the laboratory, entry/exit requirements, emergency procedures, lab orientation, and other applicable training as outlined above.
- I have been given the opportunity to ask questions, have had my questions answered and I feel confident that I understand the training I have been provided.
- I agree to comply with the requirements pertaining to accessing the select agent laboratory.

Signature of Visitor:

Date:

Signature of Authorized Escort:

Date: