Arthropod Containment Level 3 Checklist

Contents

Access Control ............................................................................................................. 2
Annual Verification ....................................................................................................... 2
Autoclaves .................................................................................................................... 2
Biomedical Waste ........................................................................................................ 2
BioSafety Cabinets ...................................................................................................... 3
Chemical Fume Hoods ................................................................................................ 4
Chemical Safety ........................................................................................................... 4
Compressed Gases ....................................................................................................... 4
Controlled Substances ................................................................................................. 5
Documentation ............................................................................................................ 5
Electrical Safety ......................................................................................................... 6
Emergency ................................................................................................................... 6
Equipment .................................................................................................................... 7
Facility Design ............................................................................................................. 7
Fire Safety ................................................................................................................... 9
General Safety ........................................................................................................... 9
Hazardous Waste ....................................................................................................... 9
Pest Management ........................................................................................................ 10
Personal Protective Equipment .................................................................................. 10
Practices ........................................................................................................................ 11
Recombinant DNA Research ..................................................................................... 13
Sharps ............................................................................................................................ 13
Signs and Postings ...................................................................................................... 13
Training ......................................................................................................................... 14
Animal Research ......................................................................................................... 14
Arthropod Containment Level 3 Checklist

Access Control
- Is access to laboratory/facility controlled?
  - Does the insectary director limit access to the insectary to the fewest number of persons possible? Are personnel who must enter the insectary for program or serve purposes when work is in progress accompanied by trained laboratorians and are they advised of the potential hazards to themselves, co-workers, and the potential consequences of arthropod release? Do laboratory staff perform general cleaning duties?

Annual Verification
- Are facilities re-verified and manuals reviewed and updated, at least annually, utilizing operational experience as guidance?
- Can laboratory personnel verify that the direction of airflow is proper?
- Is airflow at lab or animal room entrance negative (flowing into lab)?
- Is illumination adequate for all activities; are reflections and glares that could impede vision avoided?
- Is the insectary re-verified at least annually against operational procedures as modified by operational experience?

Autoclaves
- Are autoclaves used and maintained properly?
  - Are autoclaves used to inactivate biomedical wastes/sharps containers tested for efficacy on schedule (every 40 hrs.)?
  - Is an autoclave use log maintained?
  - Are stainless steel (recommended) or polypropylene or polycarbonate (not high density polyethylene) pans used to autoclave biowaste?
  - Are temperature resistant red bags being utilized for autoclaving?
  - Is an autoclave maintenance log maintained?
  - Are autoclave(s) used for sterilization (not disinfection) tested for efficacy (initially and every 6 months)?

Biomedical Waste
- Is Biomedical Waste collection and specimen/agent transport being handled properly?
  - Are all potentially contaminated waste materials from labs and animal rooms decontaminated before disposal or reuse?
  - Are serological pipettes discarded in the biohazard bag in a manner that decreases the risk for puncture of the bag and/or box?
  - Is infectious/potentially infectious waste or recombinant DNA waste that is being generated in the biosafety cabinets discarded into a disinfectable container?
  - Are Biomedical Waste container(s) not overfilled?
  - Are Biomedical Waste box(es) found to be lined with the correct bag?
  - Is biomedical waste awaiting autoclaving placed within a leak-proof secondary container (i.e. not found sitting directly on the floor)?
  - Are Biohazard Waste container(s) containing infectious materials covered?
  - Are clean gloves and other non-contaminated laboratory materials discarded as clean lab ware?
Arthropod Containment Level 3 Checklist

- Are pipette tips discarded properly (not haphazardly into biomedical waste bags or into regular trash)?
- Are Biohazardous Waste bags/box free of chemically-contaminated pipet tips and/or gloves?
- Are biomedical waste bags free of liquid waste?
- Is Biohazardous Waste generated in the biosafety cabinet (BSC) only being collected inside the BSC (not outside the BSC)?
- Are biomedical waste bags free of regular trash (wrappers, bottles, etc.)?
- Are open wire-basket(s) lined with a biohazard bags never used to discard infectious/potentially infectious biowaste?
- Is potentially infectious material placed in a durable leak proof container during collection, handling, processing, storage, and transport within the facility?
- Are transport containers surface disinfected with an appropriate disinfectant?
- Are all infectious and potentially infectious samples collected, labeled, transported, and processed in a manner that contains and prevents transmission of the agent(s)? Is transfer of arthropods between manipulation and holding areas in non-breakable secure containers?
- Are living arthropods prohibited from being disposed of? Are all wastes from the insectary (including arthropod carcasses, and rearing medium) transported from the insectary in leak-proof, sealed containers for appropriate disposal in compliance with applicable institutional or local requirements? Are all stages of arthropods killed before disposal? Are infected arthropods autoclaved or incinerated?
- Are infectious Biomedical Waste / Biological waste and/or rDNA decontamination and waste transport compliant?
- Are waste materials to be removed from the facility packed in accordance with applicable local, state, and federal regulations?
- Are waste containers destined for decontamination surface disinfected prior to transport and are they being transported through non-public areas?
- Is no infected material disposed of via the sewer, and all material destroyed by heat or freezing and preferably by autoclaving or incineration?

BioSafety Cabinets

- Are Biosafety Cabinets (BSCs) being used properly?
  - Are Biosafety cabinet(s) (BSCs) neat (not cluttered with excess supplies)?
  - Are Bunsen Burners forbidden in BSC(s)?
  - Are the front grille of BSC(s) clear (unblocked)?
  - Are lab doors closed (not propped open) while BSC(s) are in use?
  - Is the BSC functioning properly?
- Are BSCs located in such a way as to not compromise function?
  - Is clearance around BCS(s) adequate?
  - Are BSC(s) located away from entrances?
  - Are BSC(s) located away from HVAC supply?
- Are BSC(s) certified annually or labeled as 'not for use with infectious materials' if not certified?
  - Does Biosafety Cabinet(s) not in use with infectious materials have a 'not for use with infectious materials' label?
  - Do Biosafety Cabinet(s) that are used with infectious materials have current certification(s)
  - If HEPA filtered exhaust air from Class II biological safety cabinets is recirculated into the insectary, is the BSC certified annually? If the BSC is exhausting to the outside, is the cabinet installed appropriately?
Arthropod Containment Level 3 Checklist

Chemical Fume Hoods

- Is fume hood compliant?
  - Is storage of items in chemical fume hoods kept to a minimum?
  - Are the fume hood alarms working properly?
  - Are the side panels in place and sealed properly?
  - Is there sufficient visibility through the fume hood sash?
  - Is the fume hood sash at the proper height and closed if not in use?
  - Is the fume hood velocity within range?

Chemical Safety

- Is an appropriate chemical spill kit available?
- Are proper dating/storage/use/disposal procedures followed for perchloric acid/picric acid?
- Are proper dating/storage/use/disposal procedures followed for peroxide forming compounds?
- Are chemicals stored safely?
  - Are liquid chemicals stored below shoulder height?
  - Are all containers in good condition, no rusted containers or broken bottles?
  - Are all containers properly capped with a tight sealing lid?
  - Are dry and liquid chemicals kept separate?
  - Are flammable solvents only stored in approved fridges or freezers?
  - Are liquids stored in secondary containers (not stored directly on the floor)?
- Are all transfers of liquid nitrogen done in a well-ventilated area?
- Are lab chemicals in use and within expiration dates (not unused or outdated)?
- Is use of Chromic acid for cleaning glassware discouraged?
- Is air quality in the lab acceptable (no particulates or chemical odors)?
- Are all containers of chemicals properly labeled in the lab?
  - Are labels legible and easily read (not deteriorating or falling off)?
  - If the lab is using abbreviations or chemical formulas, do they have an abbreviation sheet posted?
  - Are all chemicals labeled (no unlabeled containers)?
- Are chemicals stored by compatibility?
  - Are organic and inorganic chemicals kept separate?
  - Are acids and bases segregated?
  - Are corrosives separated from metals, flammables, and oxidizers?
  - Are oxidizers separated from metals and flammable chemicals?
  - Are inorganic acids separated by compatibility?
- Are cold rooms being used properly?
  - Is cold room free of excess clutter and cardboard?
  - Is the amount of flammables in the cold room kept to a minimum?

Compressed Gases

- Are gas cylinders securely transported using a hand truck?
- Are the UF Compressed Gas Rules posted in a prominent location?
- Per the PI or PI’s designee, is the regulator connection leak tested after installation and before each use?
Arthropod Containment Level 3 Checklist

- Are cylinders with no regulators capped (even when empty)?
- Are cylinders stored away from heat sources?
- Are contents of cylinders clearly labeled?
- Are hydrostatic tests current (cylinders have not been stored more than 5-10 years)?
- Are compressed gas cylinders adequately secured (even when empty)?
- Are gas cylinders stored by compatibility?
- If the lab has any high hazard gases, is there an emergency plan in place?
- Are highly toxic gasses kept in cabinets vented to the outside (not loose in the open room)?

Controlled Substances

- If controlled substances are used, is the DEA permit current?
- Are controlled substances stored in a secure location?
- Are outdated or unwanted DEA substances disposed of appropriately?
- Does the lab have an inventory of all in-use controlled substances?
- Have all employees using controlled substances or novel compounds (neurotrophic or addicting) filled out an Employee Questionnaire?
- Is the lab completing a biennial (every 2 years) inventory of all controlled substances?
- Is the lab free of any outdated pharmaceutical products?

Documentation

- Is the lab’s LATCH complete?
  - Is only one component of LATCH incomplete? (If no, all non-compliant aspects will be listed here.)
  - Does the lab have an up to date roster?
  - Have all roster members completed required training?
  - Is the hazard assessment and PPE determination completed in LATCH?
  - Has everyone in the lab or work area read and signed the completed risk assessment?
  - Has the lab specified where SOPs are saved in the Notes section of the risk assessment?
- Is the lab's chemical inventory compliant?
  - Does the lab have a chemical inventory?
  - Is the chemical inventory current?
  - Is the inventory accurate as determined by a check/spot check? (include details in the notes section)
- Are the lab's SOPs free of any issues?
  - Does the lab maintain SOPs that incorporate health & safety?
  - Do all lab personnel have access to all SOPs?
  - Are the SOPs in the required EHS format?
- Does everyone in the lab have access to the SDSs for all chemicals used in the lab?
- Is the UF Laboratory Safety Manual readily accessible?
- Does the lab have Voluntary Use forms for lab members using N95 type respirators voluntarily and they are being used correctly?
- Are all project(s) personnel list(s) current?
- Is the UF Biological Safety Manual readily accessible?
- Are all projects(s) room list(s) current?
• Do EH&S registered project(s) accurately reflect ongoing research activities?
• Does the PI have a FL Department of Business and Professional Regulations medical exemption letter?

Electrical Safety
• Is access to circuit breaker panel unobstructed?
• Are openings on breaker panel, receptacle boxes, etc. sealed?
• Are Ground Fault Circuit Interrupters (GFCI) used near sinks and wet areas?
• Is the lab only using extension cords temporarily?
• Are extension cords manufactured commercially (not shop made)?
• Are electrical cords undamaged (not frayed)?
• Is the lab free of electrical hazards?
• Do extension cords, power strips, and surge protectors have long enough cords (not inter-connected or Daisy Chained)?
• Are electrical panel covers secure? Are all unused openings in electrical enclosures and fittings appropriately plugged or covered?
• Are power strips UL listed?
• Are all electrical cords routed properly (not running through doors, walls or partitions, under rugs/matts, or above drop ceilings)?
• Are power strips being used only for small electronics?
• Are all power strips either mechanically affixed or resting on a flat surface?

Emergency
• Is a fully stocked First-Aid kit compliant?
  o Is the first aid kit complete and are all contents within their expiration dates (unexpired)?
  o Is a first aid kit in evidence? (check no if they need a new first aid kit)
  o Is the first aid kit easily accessible/unobstructed?
• Is calcium gluconate available where hydrofluoric acid (HF) is stored or handled?
• Is the overhead emergency shower(s) compliant?
  o Is overhead emergency shower(s) working properly?
  o Is overhead emergency shower(s) tested regularly?
  o Is overhead emergency shower(s) unobstructed?
• Is the emergency eye wash station(s) compliant?
  o Is eyewash station working properly?
  o Is eyewash tested regularly?
  o Does eyewash station does have dust covers?
  o Is eyewash unobstructed?
• Are emergency and disaster recovery plans for man-made or natural disasters in place and reviewed annually?
• Are biological spill kits and spill management procedures compliant?
  o Is a Biological Spill kit available and fully stocked?
  o Is a biological spill kit present in the facility in areas where contaminated liquids or soil is located?
    Consideration for the containment and removal of large amounts of potentially contaminated water should be given. The use of thresholds/berms in the facility design is recommended. For PBSL3, is a HEPA-filtered WetVac or similar should be available.
Arthropod Containment Level 3 Checklist

- Is a biological spill SOP readily available?
- Are the spill and incident management procedures posted?
- Is the bleach in spill kit unexpired?
- Are infectious materials spills reported and evaluated?
- Is the biological spill kit kept segregated (in a separate container) from any chemical spill kits?

- If any exposure incidents occurred, were they properly reported/investigated?
  - Is the arthropod release/escape prevention program compliant?
  - Are Furniture and incubators containing arthropods located in such a way that accidental contact and release by laboratorians, custodians, and service persons is unlikely?
  - Is the area designed and maintained to enhance detection of escaped arthropods?
  - Are loose arthropods killed and disposed of, or recaptured and returned to the container from which they escaped? Are staff members appropriately trained for this procedure?
  - Is a release procedure developed and posted?
  - Do investigators assess whether escapes are occurring by instituting an effective arthropod trapping program to monitor the escape prevention program? Are Records of exterior captures maintained?
  - Are all procedures carefully designed and performed to prevent arthropod escape.
  - Is pesticide for emergency use available in areas in which escape of arthropods is likely?
  - Are additional measures taken to measure the effectiveness of the arthropod trapping program and are these documented? Are exterior and within-building monitoring considered? Are records of exterior captures maintained?

Equipment

- Is laboratory equipment clean?
- Is all equipment appropriately decontaminated and disinfested before transfer between rooms within the insectary, and before removal from the insectary?
- Is use of equipment with sharp edges and corners avoided?
- Are restraint devices that reduce the risk of exposure during animal manipulations (i.e. physical restraint devices, chemical restraint medications) used whenever possible?
- Is laboratory equipment safely operated and maintained in accordance with manufacturer instructions?
  - Are vacuum lines protected with liquid disinfectant traps and HEPA filters/Is the HEPA filter changed as needed?
  - Are continuous flow centrifuges or other equipment that may produce aerosols contained in devices that exhaust air through HEPA filters before discharge into the laboratory?
- Are centrifuge rotors/buckets used for infectious agents sealed? (check for gaskets to be present and not cracked)
- Are cages used to hold arthropods non-breakable and screened with mesh of a size to prevent escape. Are containers autoclavable or disposable? Are openings designed to prevent escape during removal and introduction of arthropods?
- Has equipment been decontaminated first before being removed from the lab or repaired?

Facility Design

- Is Facility Design compliant? Check NO to reveal initial (commissioning) checklist.
Arthropod Containment Level 3 Checklist

- Are cabinets and bench surfaces lab-grade material (impervious to water and resistant to heat, organic solvents, acids, alkalis, and other chemicals)?
- Is the exhaust dispersed away from occupied areas and air intakes, or is the exhaust HEPA-filtered?
- Is the facility tested for verification that the design and operational parameters have been met prior to operation?
- If intake fans are used, are measures taken to minimize the ingress of arthropods? Are Louvers or fans constructed such that they can only be opened when the fan is in operation?
- Is the insectary strictly separated from the areas that are open to unauthorized, untrained personnel within the building by locked door?
- Is access to the facility limited to trained, approved personnel by a self-closing and self-locking door? Are the external insectary doors controlled by a key lock, card key, or proximity reader? Is entry into the insectary via double-door entry that includes a change room and shower(s)? Are showers plumbed to prevent arthropod escape? If there are additional double-door access (air lock) or double-door autoclaves provided for movement of supplies and wastes into and out of the facility respectively, are the two contiguous doors never opened simultaneously? Internal doors may open outwards or be sliding, but are they self-closing, and kept closed when arthropods are present?
- Windows are not recommended. Are any windows present resistant to breakage (e.g. double paned or wire reinforced) and well sealed?
- If a central vacuum system is installed, is each service outlet fitted with suitable barriers/filters to prevent arthropod escape? Are filters installed to permit decontamination and servicing? Are other vacuum devices appropriately filtered to prevent transfer and exhausting of arthropods?
- Is the insectary designed, constructed, and maintained to facilitate cleaning and housekeeping? Are the interior walls light-colored so that a loose arthropod can be easily located, recaptured, or killed? Gloss finishes, ideally resistant to chemical disinfectants and fumigants, are recommended. Are Floors light colored, smooth and uncovered? Are ceilings as low as possible to simplify detection and capture of flying insects?
- Are spaces around doors sealed to facilitate decontamination or are troughs surrounding door frames installed and filled with sticky or greasy material that will trap crawling arthropods?
- Floor drains are not recommended. If present, are traps filled with an appropriate treatment to prevent survival of any arthropod stage (e.g. mosquito larvae)? Are all drains plumbed to a holding tank to facilitate heat or chemical treatment to kill all stages of arthropod prior to disposal into the waste system?
- Are Internal facility appurtenances (e.g., light fixtures, pipes and ducting) minimal since these provide hiding places for loose arthropods? Are penetrations of walls, floors, and ceilings minimal and sealed/caulked? Are light fixtures flush with the ceiling, sealed, and accessed from above?
- Can personnel verify that the direction of the airflow is proper (a visual monitoring device/meter is recommended to confirm directional airflow). Do audible alarms alert personnel to system failure?
- Is an autoclave available within the suite of rooms containing arthropods?
- Does the facility have a hand-washing sink with hot water and with suitable plumbing to prevent arthropod escape?
- Is an appropriately plumbed shower available within the insectary suite?
- Is illumination appropriate for arthropod maintenance but does not compromise arthropod containment, impede vision, or adversely influence the safety of procedures within the insectary? Are lighted (or dark) openings that attract escaped arthropods avoided?
Arthropod Containment Level 3 Checklist

- Are the completed ACL-3 insectary design and operational procedures documented by the PI and reviewed by the IBC?

Fire Safety
- Are fire extinguishers compliant?
  - Have fire extinguishers been checked monthly by Fire Safety?
  - Is fire extinguisher unobstructed?
  - Is a Fire Extinguisher located near or in the lab?
- Are large metal drums of flammable liquids reported in the inventory and risk assessment?
- Are flammable liquids stored in approved containers?
- Is no more than 10 gallons of flammable liquids stored in the open (outside of a flammables cabinet or safety can)?
- Are vents on flammable storage cabinets sealed?
- Are sprinkler heads clear (i.e. at least 18 inch clearance)?
- If the lab has any propane gas, is the quantity less than 2x 1lb cylinders loose in the lab with another 2x 1lb cylinders in a flammables cabinet?
- Is the lab free of any gasoline and/or any gasoline containers?
- Are all ceiling tiles in place in the lab?

General Safety
- Is lab space being utilized safely?
- Are workspaces un-crowded?
- Are benches and shelves never overloaded?
- Are chairs appropriate for laboratory environment?
  - Are chairs non-porous and cleanable?
  - Are chairs undamaged?
  - Do chairs have a 5-star base?
- Are vacuum pumps (with a belt/pulley) equipped with a belt guard?
- Is there no food for human consumption stored in lab fridges/freezers?
- Are walkways clear of obstructions?
- Is food consumption or storage, smoking, drinking, handling of contacts, or applying cosmetics prohibited within the laboratory work area?
- Are work surfaces and benches free of clutter to reduce risk of spills and accidents?
- Per the PI or PI’s designee, are lab rooms all closed and locked when no personnel are in the lab?
- Is mouth pipetting prohibited; Are mechanical pipetting devices used?
- Is water conserved as much as possible?
- Are lab appliances properly labeled?
- Do all older style vacuum pumps have oil traps inline of their exhaust?

Hazardous Waste
- Is the current SAA sheet posted?
- Is the current SAA waste manager listed?
Arthropod Containment Level 3 Checklist

- Are SAA waste totals under the limit?
- Is waste properly segregated?
- Is waste compatible with the container?
- Are waste containers in good condition?
- Is waste stored at or near the point of generation?
- Is waste under the control of the generator?
- Are waste containers closed?
- Is the SAA free of spills and leaks?
- Are hazardous waste containers labeled using the updated format?
  - Are the waste hazards associated with the waste clearly indicated?
  - For waste mixtures: are all contents listed with associated percentages totaling 100%?
  - Are Principal Investigator, Building & Room information entered?
  - Are hazardous waste containers marked with the words “Hazardous Waste”?
- Is all waste identified (no unknown present)?
- Per the PI or PI’s designee, is hazardous waste being properly disposed of through EH&S (not poured down sinks)?
- Is all waste being stored in the SAA (not in additional points throughout the lab)?
- Is the monthly SAA self-audit up to date and available?

Pest Management
- Are exposure reports accessible?
- Are insect traps (black light, sticky board, etc.) used to monitor for pests or escaped insect vectors?

Personal Protective Equipment
- Is PPE (e.g. gloves, safety glasses/goggles, lab coats, thermal protection, etc.) available (stored clean and in good repair) and worn for the activity being conducted?
- Is PPE stored in a manner to prevent damage or contamination?
- Are full coverage shoes with good sole grips worn in the lab?
- Are cryogenic materials handled with the proper PPE?
- Is the lab using the appropriate gloves for their work (have they consulted the glove compatibility reference chart)?
- Are gloves being used and disposed of properly?
  - Are used gloves being disposed of with other contaminated laboratory waste?
  - Are disposable gloves prohibited from being washed or reused?
  - Are gloves being removed and hands being washed when work with hazardous materials has been completed and before leaving the laboratory?
  - Are gloves being changed when contaminated, integrity has been compromised, or when otherwise necessary?
- Are respirator wearers trained, fit tested and enrolled in the respiratory protection program and/or Biopath as appropriate?
- Are laser specific safety glasses or goggles available if the lab is working with lasers?
- Is hearing protection worn for high noise areas (e.g. sonicators, grinders)?
Arthropod Containment Level 3 Checklist

- Has a noise survey been conducted to determine the need for using hearing protection?
- Are protective laboratory coats, gowns, or uniforms worn to prevent contamination of personal clothing and are they removed before leaving for non-laboratory areas (i.e. cafeteria, library, administrative offices)?
- Are white laboratory coats, gowns, and/or uniforms worn at all times by all personnel entering the insectary? Are wrap-around or solid-front gowns worn over this clothing? Are the gowns removed and left in the insectary? Before leaving the insectary, are scrub suits and uniforms removed and appropriately contained and decontaminated before laundering or disposal?
- Are eye and face protection compliant?
  - Are eye and face protection (goggles, mask, face shield, or other splatter guard) used for anticipated splashes or sprays of infectious or other hazardous materials when the materials must be handled outside the containment device?
  - Are lab personnel aware that contact lenses should not be worn in the labs, and that if contact lenses are worn they must be accompanied by goggles?
  - Is eye and face protection disposed of with other contaminated laboratory waste or decontaminated before reuse?
  - Based on risk assessment, are eye and face protection (goggles, mask, face shield, or other splatter guard) used for anticipated splashes or sprays of infectious or other hazardous materials when the microorganisms must be handled outside the BSC or containment device? Do persons who wear contact lenses in laboratories also wear eye protection?
  - Are appropriate face/eye protection worn by all personnel entering the insectary?
  - Is eye and face protection disposed of with other contaminated laboratory waste or decontaminated before reuse?
- Are gloves being used and disposed of properly?
  - Are gloves worn when handling infectious materials, infected animals, and when handling contaminated equipment?
  - Are gloves removed in a manner that prevents transfer of infectious materials?
- Does clothing minimize the area of exposed skin, since this can increase the risk of attracting and being bitten by a loose arthropod?

Practices

- Are medical surveillance and/or immunizations available as appropriate for lab personnel? Are records maintained?
- Are staff aware that immune-suppressed conditions can make them more susceptible to the agents they are working with and do they know they should discuss their conditions with Occupational Health?
- Are needleless systems and other safe devices used when appropriate?
- Are non-research animals or plants prohibited in the laboratory?
- Are sink traps and floor drains filled with water, and/or appropriate disinfectant to prevent migration of vermin and gases?
- Are personnel washing their hands after removing gloves and before exiting the laboratory?
- Before leaving the insectary and after handling cultures and infected arthropods, do personnel wash their hands, taking care not to disperse viable life stages into the drainage system?
- Are soap and paper towels available at wash station?
• Are arthropods and other motile macroorganisms housed in appropriate cages? If macroorganisms (i.e. flying arthropods or nematodes) are released within the greenhouse, are precautions taken to minimize escape from the greenhouse facility? When appropriate to the organism, are experiments conducted within cages designed to contain the motile organisms?
• Are procedures performed to minimize the creation of splashes and/or aerosols?
• Are laboratory equipment and work surfaces decontaminated routinely, after work with infectious materials is finished, and especially after overt spills, splashes, or contamination with infectious materials?
• Is bleach or an appropriate disinfectant (not ethanol) being used to disinfect surfaces?
• Is bleach being used properly for disinfection?
  o Is there sufficient bleach in the BSC aspirator flask?
  o If aspirator flasks are used over the course of several days, is there adequate chlorine to disinfect the waste?
  o Is bleach properly diluted and made fresh each day?
  o Is bleach un-expired?
• Are equipment and work surfaces routinely decontaminated with an effective chemical or by radiation (e.g. heat) after actual or potential contact with an infectious agent, and especially after overt spills and splashes of viable materials (including soil or water that might contain infectious agents or eggs)?
• Are persons who may be at increased risk of acquiring infection, or for whom infection may be unusually hazardous (e.g. immunocompromised), not allowed in the insectary unless special personal protection procedures are in place to eliminate extra risk?
• Are accidental sources of arthropods from within the insectary eliminated?
• Are practices in place such that arthropods do not escape by inadvertent disposal in primary containers? Are cages and other culture containers are appropriately cleaned to prevent arthropod survival and escape (e.g. heated to over the lethal temperature or killed by freezing)? Are containers disinfected chemically and/or autoclaved if used for infected material?
• Are arthropods tracking and accounting compliant?
  o Are arthropods identified adequately?
  o Are arthropods that feed on host animals prevented from accidental transfer to host cages?
  o Are all arthropods accounted for?
• Is there a program to prevent the entrance of wild arthropods (e.g. houseflies, cockroaches, spiders) and rodents effectively precludes predation, contamination, and possible inadvertent infection?
• Are ACL-2 or Lower arthropods prohibited from the ACL-3 insectary? If not, are all procedures and practices in compliance with the ACL-3 standards.
• Are harborage and breeding areas eliminated? Are furniture and racks minimized and can easily be moved to permit cleaning and location of escaped arthropods? Is equipment in which water is stored or might accumulate (e.g. humidifiers) screened to prevent arthropod access, or chemicals to prevent arthropod survival?
• Are all projects IBC approved? Is there IACUC approval for projects where vertebrates are used as hosts?
• The blood source may be considered as a source of inadvertent arthropod infection and transmission. Are measures implemented to prevent such an event?
• Are personnel aware of the symptoms of infection and the procedure to follow in reporting these symptoms.
• Is all work done within a primary barrier?
• Are all procedures carefully performed to prevent creation of aerosols or splatters? Are protocols practiced with non-infected arthropods / animals and modified before implementation?
Arthropod Containment Level 3 Checklist

Recombinant DNA Research

- Is a permanent record of the experimental use and disposal of each animal or group of animals maintained?
- When an animal containing recombinant DNA or a recombinant DNA-derived organism is euthanized or dies, is it disposed of in a manner that prevents its use as food for humans or animals unless food use has specifically been authorized by an appropriate Federal agency?
- Are animals confined to securely fenced areas or enclosed structures to minimize the possibility of theft or unintentional release?
- Are animals confined within an enclosed structure (animal room or equivalent) to minimize the possibility of theft or unintentional release and to avoid arthropod access?
- Are Genetically engineered neonates permanently marked within 72 hours after birth? If their size does not permit marking, are their containers marked?
- If arthropods are used in the experiment or the agent under study can be transmitted by an arthropod, are interior work areas appropriately screened (52 mesh)?

Sharps

- Are sharps handled and disposed of properly?
  - Are safety devices being chosen for sharps being used with infectious material/rDNA?
  - Are sharps generated in the BSC being collected into sharps containers within (not outside) BSC?
  - Are sharps properly segregated (gloves, paper towels or other 'soft' items are never in the sharps containers)?
  - Are sharps containers not overfilled?
  - Are containers of contaminated needles, sharp equipment, and broken glass decontaminated before disposal, and disposed of according to any local, state, and federal regulations?
  - Are non-disposable sharps placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving?
  - Are sharps containers conveniently located to the work being performed?
  - Is broken glassware being handled properly (removed using mechanical means such as a brush and dustpan, tongs, or forcep)? Is plastic ware substituted for glassware whenever possible?
  - Are needles not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal?
  - Is a high degree of caution always taken with any contaminated sharps items including needles and syringes, slides, pipettes, capillary tubes, and scalpels?
  - Are sharps restricted for use in the insectary if infected materials are used?
  - Are sharps stringently limited and is use justified only when alternatives are not available?

Signs and Postings

- Are the Notice Board (NB) with Emergency Call list and hazard warning labels compliant?
  - Is the Notice Board posted at the lab entrance?
  - Is the notice board legible? (check no if they need a new NB)
  - Are the hazard stickers on the NB complete (none need to be added)?
Arthropod Containment Level 3 Checklist

- Does the NB have a current emergency call list (ELC)? (check no if they need a new ECL sticker)
- Does the emergency call list have two names with afterhours phone numbers?
- Does the lab have signage identifying the lasers present in the lab?
- If the NB has a privacy ECL, is it updated?
  - Is warning signage posted to alert entrants what PPE is required?
  - Is Laboratory (Biosafety) Signage compliant?
    - Does all laboratory equipment have the appropriate hazard stickers?
    - If there is a risk to human health, is a sign incorporating the universal biosafety symbol posted?
    - Are persons entering the lab required to read and follow instructions on practices and procedures?
    - Are people entering the lab advised of hazards present?
    - Are entry and exit procedures/requirements posted as appropriate?
    - Are persons entering the area aware of the presence of arthropod vectors? If infected material is present, is a BSL-2 biohazard sign posted on the entrance to the insectary listing all species handles within? Is the sign updated whenever new species are introduced or pathogenic infectious agents known or suspected to be present? Does the sign list the name and telephone number of the responsible person(s) and indicates any special requirements for entering the laboratory (e.g. the need for immunizations or respirators?)

Training

- Do lab personnel receive appropriate training regarding the potential hazards associated with the work involved, special microbial practices and manipulations of infectious agents, the necessary precautions to prevent exposures, and exposure evaluation procedures? Does the PI/Director ensure employees demonstrate proficiency prior to being allowed to work with infectious agents?
  - Are records for annual training sessions, and staff attendance at the training sessions in evidence and complete?
    - Is Hazardous Waste training complete for all personnel including the in-person training session for the hazardous waste manager?
    - If work involves blood or OPIM, is Blood borne Pathogen / Biomedical Waste Training complete for personnel?
    - Is Biomedical Waste training complete for all personnel?
    - Are personnel receiving lab/facility-specific training annually and/or when changes in procedures occur?
    - If the lab staff ships biological materials or Dangerous Goods is training certification for shipping biological materials/dangerous goods current?
    - Are personnel trained initially and annually in spill handling?
  - Is a safety manual prepared, approved by the IBC, and adopted? Does the manual contain emergency procedures, standard operating procedures, waste disposal and other information necessary to inform personnel of the methods for safe maintenance and operation of the insectary?
  - Is adherence to established safety procedures and policies made a condition of employment and part of the annual performance review of every employee?

Animal Research

- Are animals used in the ACL facility? If yes, display the following questions:
  - Is a permanent record of the experimental use and disposal of each animal or group of animals maintained?
Arthropod Containment Level 3 Checklist

- When an animal containing recombinant DNA or a recombinant DNA-derived organism is euthanized or dies, is it disposed of in a manner that prevents its use as food for humans or animals unless food use has specifically been authorized by an appropriate Federal agency?
- If arthropods are used in the experiment or the agent under study can be transmitted by an arthropod, are interior work areas appropriately screened (52 mesh)?
- Are animals confined to securely fenced areas or enclosed structures to minimize the possibility of theft or unintentional release?
- Are animals confined within an enclosed structure (animal room or equivalent) to minimize the possibility of theft or unintentional release and to avoid arthropod access?
- Are appropriate steps being taken to prevent horizontal transmission or exposure of laboratory personnel?
- Is a double barrier between males and females or other means to prevent reproductive transmission in place? This question does not apply if reproductive studies have been an approved part of the experiment.
- Are Genetically engineered neonates permanently marked within 72 hours after birth? If their size does not permit marking, are their containers marked?
- Are other animals inaccessible to the arthropods?