Parent /Child Questions

Access (BioSafety)
1. Is access to laboratory/facility controlled?
   a. Is access to the greenhouse restricted to only those required for project or support purposes? A facility entry/exit log is used to document access.
   b. Are visitors escorted at all times and receive training on safety and maintenance of containment prior to their entry?
   c. Does the greenhouse facility perimeter remain locked 24/7? Master keys are not permitted. Inner doors may remain unlocked during normal work hours dependent on the organism(s) and project(s) underway.

Annual Verification (BioSafety)
1. Are facilities re-verified and manuals reviewed and updated, at least annually, utilizing operational experience as guidance?
2. Are HEPA systems tested at least annually?
3. Can laboratory personnel verify that the direction of airflow is proper?
4. Are penetrations in floors, walls, and ceiling surfaces sealed, including openings around ducts, doors, and door frames to facilitate pest control and proper cleaning?
5. Is airflow at lab or animal room entrance negative (flowing into lab)?
6. Are wall ceiling and floor surfaces, and seams intact and sealed (not cracked, peeling, or chipped)?

Biomedical Waste (BioSafety)
1. Is Biomedical Waste collection and specimen/agent transport being handled properly?
   a. Are materials containing experimental microorganisms, which are brought into or removed from the greenhouse facility in a viable or intact state, transferred in a closed non-breakable container?
   b. Are transport containers surface disinfected with an appropriate disinfectant?
   c. Are live or potentially contaminated items prohibited from being removed from the BSL3-P greenhouse/facility without Biosafety Office permission?
2. Are autoclaves used and maintained properly?
Biomedical Waste, cont’d

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

3. Is infectious Biomedical Waste / Biological waste and/or rDNA decontamination and waste transport compliant?
   a. Are waste containers destined for decontamination surface disinfected prior to transport and are they being transported through non-public areas?
   b. Is condensate from growth chamber(s) collected and disinfected prior to disposal.
   c. Are all experimental materials sterilized in an autoclave or rendered biologically inactive by appropriate methods before disposal, including water that comes in contact with experimental microorganisms or with material exposed to such microorganisms, and contaminated equipment and supplies?
   d. If part of the greenhouse is composed of gravel or similar material, are appropriate treatments made periodically to eliminate, or render inactive, any organisms potentially entrapped by gravel?

Biosafety Training (BioSafety)

1. Are records for annual training sessions, and staff attendance at the training sessions in evidence and complete?
   a. Are personnel receiving lab/facility-specific training annually and/or when changes in procedures occur?
2. Prior to entering the greenhouse, are personnel required to read and follow instructions greenhouse practices and procedures?
   a. Are all procedures performed in accordance with accepted greenhouse practices that are appropriate to the experimental organism?

Chemical Fume Hoods

1. Is storage of items in chemical fume hoods kept to a minimum?
2. Are the fume hood alarms working properly?
3. Are the side panels in place and sealed properly?
4. Is the fume hood velocity within range?
5. Is there sufficient visibility through the fume hood sash?
6. Is the fume hood sash is at the proper height and closed if not in use?

Chemical Safety

1. Is an appropriate chemical spill kit available?
2. Are chemicals stored safely?
   a. Are liquid chemicals stored below shoulder height?
   b. Are dry and liquid chemicals kept separate?
   c. Are all containers in good condition, no rusted containers or broken bottles?
   d. Are all containers properly capped with a tight sealing lid?
   e. Are flammable solvents only stored in approved fridges or freezers?
   f. Are liquids stored in secondary containers (not stored directly on the floor)?
3. Are all containers of chemicals properly labeled in the lab?
   a. Are labels legible and easily read (not deteriorating or falling off)?
Chemical Safety, cont’d

b. If the lab is using abbreviations or chemical formulas, do they have an abbreviation sheet posted?
c. Are all chemicals labeled (no unlabeled containers)?

4. Are chemicals stored by compatibility?
   a. Are organic and inorganic chemicals kept separate?
   b. Are acids and bases segregated?
   c. Are corrosives separated from metals, flammables, and oxidizers?
   d. Are oxidizers separated from metals and flammable chemicals
   e. Are inorganic acids separated by compatibility?

5. Are proper dating/storage/use/disposal procedures followed for perchloric acid?
6. Are proper dating/storage/use/disposal procedures followed for peroxide forming compounds?
7. Are all transfers of liquid nitrogen done in a well ventilated area?
8. Are lab chemicals in use and within expiration dates (not unused or outdated)?
9. Is use of Chromic acid for cleaning glassware discouraged?
10. Is air quality in the lab acceptable (no particulates or chemical odors)?
11. Are cold rooms being used properly?
   a. Is cold room free of excess clutter and cardboard?
   b. Is the amount of flammables in the cold room kept to a minimum?

Compressed Gases
1. Are gas cylinders securely transported using a hand truck?
2. Are the UF Compressed Gas Rules posted in a prominent location?
3. Are cylinders stored away from heat sources?
4. Is the regulator connection leak tested after installation and before each use?
5. Are cylinders with no regulators capped (even when empty)?
6. Are contents of cylinders clearly labeled?
7. Are hydrostatic tests current (cylinders have not been stored more than 5-10 years)?
8. Are compressed gas cylinders adequately secured (even when empty)?
9. Are gas cylinders stored by compatibility?
10. If the lab has any high hazard gases is there an emergency plan in place?
11. Are highly toxic gasses kept in cabinets vented to the outside (not loose in the open room)?

Controlled Substances
1. Does the PI have a FL Department of Business and Professional Regulations medical exemption letter?
2. If controlled substances are used, is the DEA permit current?
3. Does the lab have an inventory of all in-use controlled substances?
4. Have all employees using controlled substances or novel compounds (neurotrophic or addicting) filled out an Employee Questionnaire?
5. Is the lab completing a biennial (every 2 year) inventory of all controlled substances?
6. Are controlled substances stored in a secure location?
7. Is the lab free of any outdated pharmaceutical products?
8. Are outdated or unwanted DEA substances disposed of appropriately?

Documentation
1. Is the lab's CHP complete?
   a. Does the lab have a CHP?
Documentation, cont’d

b. Is appendix D filled out and current?
c. Does the lab have sufficient SOPs?
d. Is the hazard assessment and PPE determination completed?

2. Does the lab have documentation of hazardous waste training for the lab’s waste manager?

3. Is the lab’s ChemTracker inventory compliant?
   a. Does the lab have an inventory listed in ChemTracker?
   b. Has the inventory been updated in the past 12 months?

4. Does the lab have SDSs for all of their chemicals in the lab?

5. Is the UF Laboratory Safety Manual readily accessible?

6. Does the lab have Voluntary Use forms for lab members using N95 type respirators voluntarily and they are being used correctly?

Electrical Safety

1. Is access to circuit breaker panel unobstructed?

2. Are openings on breaker panel, receptacle boxes, etc. sealed?

3. Are Ground Fault Circuit Interrupters (GFCI) used near sinks and wet areas?

4. Is the lab only using extension cords temporarily?

5. Are extension cords manufactured commercially (not shop made)?

6. Are electrical cords undamaged (not frayed)?

7. Is the lab free of electrical hazards?

8. Do extension cords, power strips, and surge protectors have long enough cords (not inter-connected or Daisy Chained)?

9. Are electrical panel covers secure? Are all unused openings in electrical enclosures and fittings appropriately plugged or covered?

10. Are power strips UL listed?

11. Are all electrical cords routed properly (not running through doors, walls or partitions, under rugs/matts, or above drop ceilings)?

12. Are power strips being used only for small electronics?

13. Are all power strips either mechanically affixed or resting on a flat surface?

Emergency

1. Is a fully stocked First-Aid kit compliant?
   a. Is the first aid kit complete and are all contents within their expiration dates (unexpired)?
   b. Is a first aid kit in evidence? (check no if they need a new first aid kit)
   c. Is the first aid kit easily accessible/unobstructed?

2. Is calcium gluconate available where hydrofluoric acid (HF) is stored or handled?

3. Is the overhead emergency shower(s) compliant?
   a. Is overhead emergency shower(s) working properly?
   b. Is overhead emergency shower(s) tested regularly?
   c. Is overhead emergency shower(s) unobstructed?

4. Is the emergency eye wash station(s) compliant?
   a. Is eyewash station working properly?
   b. Is eyewash tested regularly?
   c. Does eyewash station does have dust covers?
   d. Is eyewash unobstructed?
Emergency, cont’d

5. Are chemical exposures in the lab being reported appropriately?
6. Is lab staff trained in the lab’s emergency procedures?
7. Are fire extinguishers compliant?
   a. Is a Fire Extinguisher located near or in the lab?
   b. Have fire extinguishers been checked monthly by Fire Safety?
   c. Is fire extinguisher unobstructed?

Emergency (BioSafety)

1. Does the Principal Investigator report any greenhouse accident involving the inadvertent release or spill of microorganisms to the Greenhouse Director, Institutional Biosafety Committee, NIH/OBA and other appropriate authorities immediately (if applicable)?
   a. Is Documentation of any such accident prepared and maintained?
2. Are emergency and disaster recovery plans for man-made or natural disasters in place and reviewed annually?
3. Are biological spill kits and spill management procedures compliant?
   a. Is a Biological Spill kit available and fully stocked?
   b. 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.
   c. Are the spill and incident management procedures posted?
   d. Is the bleach in spill kit unexpired?
   e. Are infectious materials spills reported and evaluated?
   f. Is the biological spill kit kept segregated (in a separate container) from any chemical spill kits?
4. If any exposure incidents occurred, were they properly investigated/reported?
5. Are written records of spills, accidents and exposure incidents maintained?
6. Is medical evaluation and treatment following an exposure incident provided as appropriate?

Equipment

1. Do you see contaminated laboratory equipment?
2. Has equipment been removed from the lab or repaired without being decontaminated first?
3. Are centrifuge rotors/buckets used for infectious agents sealed?

Equipment (BioSafety)

1. Has equipment been decontaminated first before being removed from the lab or repaired?
2. Is use of equipment with sharp edges and corners avoided?
3. Is laboratory equipment safely operated and maintained in accordance with manufacturer instructions?
   a. Are vacuum lines protected with liquid disinfectant traps and HEPA filters/ Is the HEPA filter changed as needed?

Facility Design (BioSafety)

1. Is Facility Design compliant? Check NO to reveal initial (commissioning) checklist.
   a. Is an autoclave available for decontaminating materials within the greenhouse facility?
   b. A double-door autoclave is recommended (not required) for the decontamination of materials passing out of the greenhouse facility.
Facility Design, cont’d

c. Does the greenhouse contain a foot, elbow, or automatically operated sink, which is located near the exit door for hand washing?
d. Is there a hands-free hand washing sink available at the exit of the areas where infectious materials and/or animals are housed or manipulated and in other segregated areas?
e. Are windows closed and sealed?
f. Is glazing resistant to breakage (e.g., double-pane tempered glass or equivalent)?
g. Are cabinets and bench surfaces lab-grade material (impervious to water and resistant to heat, organic solvents, acids, alkalis, and other chemicals)?
h. Is the greenhouse facility surrounded by a security fence or protected by equivalent security measures?
i. Is there a hands-free hand washing sink available at the exit of areas where infectious materials and/or animals are housed or manipulated and in other segregated areas?
j. Are floor drains capped and sealed unless piped to an effluent decontamination system?
k. Is the greenhouse a closed self-contained structure with a continuous covering that is separated from areas that are open to unrestricted traffic flow?
l. Is the minimum requirement for greenhouse entry passage through two sets of self-closing locking doors?
m. If a growth chamber or growth room is in use, is it compliant with the PBSL level requirements? Greenhouse containment requirements may be satisfied using a growth chamber or growth room within a building provided that the location, access, airflow patterns, limitation of access and escape of micro and macro organisms, and provisions for decontamination of experimental materials and supplies meet the intent of the associated PBSL safety level requirements.

n. Is directional airflow from clean to dirty and a vestibule (double door entry) to contaminated areas? The minimum requirement for greenhouse entry shall be passage through two sets of self-closing locking doors.
o. Is an individual supply and exhaust air ventilation system provided?
p. Does the system maintain pressure differentials and directional airflow, as required, to assure inward (or zero) airflow from areas outside of the greenhouse?

q. Is the exhaust air from the greenhouse facility filtered through high efficiency particulate air-HEPA filters and discharged to the outside?
r. Are the filter chambers designed to allow in-situ decontamination before filters are removed and to facilitate certification testing after they are replaced?
s. Is the supply and exhaust airflow interlocked to assure inward (or zero) airflow at all times?

Fire Safety

1. Are large metal drums of flammable liquids grounded during transfer and storage?
2. Is no more than 10 gallons of flammable liquids stored in the open (outside of a flammables cabinet or safety can)?
3. Are sprinkler heads clear (i.e. at least 18 inch clearance)?
4. Are vents on flammable storage cabinets sealed?
5. Are flammable liquids stored in approved containers?
6. 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?
7. Is the lab free of any gasoline and/or any gasoline containers?
General Safety
1. Are vacuum pumps (with a belt/pulley) equipped with a belt guard?
2. Are walkways clear of obstructions?
3. Are work surfaces and benches free of clutter to reduce risk of spills and accidents?
4. Are mechanical pipetting devices used? Is mouth pipetting prohibited?
5. Are lab appliances properly labeled?
6. Do all older style vacuum pumps have oil traps inline of their exhaust?
7. Is water conserved as much as possible?
8. Are lab rooms all closed and locked when no personnel are in the lab?
9. Is food consumption or storage, smoking, drinking, handling of contacts, or applying cosmetics prohibited within the laboratory work area?
10. Is there no food for human consumption stored in lab fridges/freezers?
11. Is lab space being utilized safely?
12. Are workspaces un-crowded?
13. Are benches and shelves never overloaded?
14. Are chairs appropriate for laboratory environment?
   a. Are chairs non-porous and cleanable?
   b. Are chairs undamaged?
   c. Do chairs have a 5 star base?

Hazardous Waste
1. Is the current SAA sheet posted?
2. Is the current SAA waste manager listed?
3. Is the Laboratory Hazardous Waste Manager trained?
4. Have all staff completed Hazardous Waste Management Training?
5. Is waste compatible with the container?
6. Are waste containers in good condition?
7. Are waste containers closed?
8. Is waste properly segregated?
9. Is the SAA free of spills and leaks?
10. Are waste containers properly labeled?
11. Is all waste identified (no unknown present)?
12. Is waste being properly disposed of (not poured down sinks)?
13. Is waste stored at or near the point of generation?
14. Is waste under the control of the generator?
15. Are SAA waste totals under the limit?
16. Is all waste being stored in the SAA (not in additional points throughout the lab)?
17. Is the monthly SAA self-audit up to date and available?

Pest Management (BioSafety)
1. Are insect traps (black light, sticky board, etc.) used to monitor for pests or escaped insect vectors?
2. Is a program implemented to control undesired species (i.e. weed, rodent, or arthropod pests and pathogens), by methods appropriate to the organisms and in accordance with applicable state and Federal Laws.
PPE (BioSafety)
1. Is disposable clothing (e.g., solid front or wrap-around gowns, scrub suits, or other appropriate clothing) worn in the greenhouse if deemed necessary by the Greenhouse Director because of potential dissemination of the experimental microorganisms?
2. Is protective clothing removed before exiting the greenhouse and decontaminated prior to laundering or disposal?
3. Is eye and face protection compliant?
   a. 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?
   b. Is eye and face protection disposed of with other contaminated laboratory waste or decontaminated before reuse?
4. Are all project(s) personnel list(s) current?
5. Are packages of imported foreign material opened only in a biological safety cabinet?
   a. Is Packaging autoclaved before removal from the PBSL3 facility?
6. Are personnel washing their hands after removing gloves and before exiting the laboratory?
7. Are soap and paper towels available at wash station?
8. If experiments involving other organisms that require a containment level lower than the designated PBSL# are conducted in the greenhouse concurrently with experiments that require the designated PBSL# is all work conducted in accordance with the designated PBSL# practices?
9. Are arthropods and other motile macroorganisms housed in appropriate cages?
   a. If macroorganisms (i.e. flying arthropods or nematodes) are released within the greenhouse, are precautions taken to minimize escape from the greenhouse facility?
   b. When appropriate to the organism, are experiments conducted within cages designed to contain the motile organisms?
10. Are experimental plants, microorganisms, or small animals well identified with sturdy markers or labels that will hold up in a greenhouse environment?
11. Is a record kept of experiments currently in progress in the greenhouse facility?
12. Is a record kept of experimental plants, microorganisms, or small animals that are brought into or removed from the greenhouse facility?
13. Are aerosols from potting material/soil being prevented during watering, transplanting, and all experimental manipulations?
   a. Is a biological safety cabinet being used for this purpose (may be required by federal regulation)?
14. Are procedures performed to minimize the creation of splashes and/or aerosols?
15. Are effective measures taken to prevent the excursion of transgenic materials outside of the greenhouse or growth chamber?

Roster
1. Is the Lab Safety Manager assigned?
2. Is a Hazardous Waste Manager assigned?

Sharps
1. Are sharps handled and disposed of properly?
Sharps, cont’d
   a. Are non-disposable sharps placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving? [1049]
   b. Are containers of contaminated needles, sharp equipment, and broken glass decontaminated before disposal, and disposed of according to any local, state, and federal regulations?
   c. Are sharps containers conveniently located to the work being performed?
   d. Are sharps containers not overfilled?
   e. Are sharps properly segregated (gloves, paper towels or other 'soft' items are never in the sharps containers)?
   f. Are needles not bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal?
   g. 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?
   h. Are safety devices being chosen for sharps being used with infectious material/rDNA?
   i. Are sharps generated in the BSC being collected into sharps containers within (not outside) BSC?

Signs and Posting
1. Are the Notice Board (NB) with Emergency Call list and hazard warning labels compliant?
   a. Is the Notice Board posted at the lab entrance?
   b. Is the notice board legible? (check no if they need a new NB)
   c. Are the hazard stickers on the NB complete (none need to be added)?
   d. Does the emergency call list have two names with after hours phone numbers?
   e. Does the NB have a current emergency call list? (check no if they need a new ECL sticker)
   f. Does the lab have signage identifying the lasers present in the lab? [1036]
   g. If the NB has a privacy ECL, is it updated?
2. Is warning signage posted to alert entrants what PPE is required?

Signs & Postings (BioSafety)
1. Is Laboratory (Biosafety) Signage compliant?
   a. Does all laboratory equipment have the appropriate hazard stickers?
   b. If there is a risk to human health, is a sign incorporating the universal biosafety symbol posted?
   c. If organisms that have a recognized potential for causing serious detrimental impacts on managed or natural ecosystems are used, is their presence indicated on a sign posted on the greenhouse access doors?
   d. Is a sign posted to indicate that a restricted experiment is in progress. The sign indicates: 1) the name of the responsible individual, 2) the plants in use, and 3) any special requirements for using the area?
   e. When infectious materials or infected animals are present, is a hazard sign incorporating the universal biohazard symbol posted on all laboratory and animal room access doors?
   f. Are persons entering the lab required to read and follow instructions on practices and procedures?
   g. Are people entering the lab advised of hazards present?
   h. Are entry and exit procedures/requirements posted as appropriate?