

ISEF Guidelines for Biosafety Level 2
Laboratory Facilities and Operations Self Assessment Checklist

Student Researcher _____ Region _____

- I. This form is intended to aid in assessing whether a laboratory is appropriate for **BSL2 studies in locations other than a registered research institution** (i.e. a high school laboratory). The following is based on “Biosafety in Microbiological and Biomedical Laboratories (BMBL)”, 5th edition, Center for Disease Control and National Institute of Health, 2007, and on “Laboratory Biosafety Manual”, 3rd edition, World Health Organization, 2004.

Please supply the following information and check all boxes that apply:

- Laboratory Supervisor/Qualified Scientist Teacher** _____
Signature
- This person must be educated, trained and qualified to supervise microbiological projects and possesses the qualifications listed below:
 - List qualifications. Add additional sheets if necessary.
- Laboratory Site (proposed BSL2 research site)** _____
Building _____ Room Number _____
- School Administrator** _____
Signature
- Person who conducted the self-assessment** _____
Signature / Position
- Date of self-assessment** _____

II. If you check any of the following boxes with “NO”, you should either redesign your research to fit a BSL1 facility or conduct your research in a recognized BSL2 facility.

A. Standard Microbiological Practices

YES NO

- 1. Is access to the laboratory limited or restricted when BSL2 experiments are in progress?
- 2. Do all personnel wash their hands after they handle viable materials and animals, after removing gloves, and before leaving the laboratory?
- 3. Are eating, drinking, handling contact lenses, and applying cosmetics forbidden in the laboratory?
- 4. Is mouth pipetting prohibited and only mechanical pipetting devices used?
- 5. Are all procedures performed to minimize the creation of splashes or aerosols?
- 6. Are work surfaces decontaminated with disinfectant when work is completed, at the end of the day and after any spill of viable material?
- 7. Are all contaminated cultures, stocks, glassware, plasticware and other biologically contaminated waste treated as biohazardous material to be autoclaved?
- 8. Are culture fluids and other contaminated liquid wastes autoclaved or decontaminated with a suitable disinfectant before disposal?
- 9. Are sharps discarded in puncture-resistant sharps disposal containers and treated as medical waste? Sharps include hypodermic syringes and needles, Pasteur pipettes, razor blades, contaminated broken glass, and blood vials.
- 10. Are materials to be decontaminated outside of the laboratory placed in a durable, leak-proof container and closed for transport from the laboratory?
- 11. Are there insect and rodent control procedures in effect?

B. Special Practices

YES NO

- 1. Are persons who are at an increased risk of acquiring infection or for whom infection may be unusually hazardous (e.g., immunocompromised, immunosuppressed, or pregnant) not allowed to enter the laboratory when BSL2 work is in progress?

YES NO

- 2. Has the laboratory supervisor developed an annually reviewed and updated BSL2 biosafety manual that is posted in the lab?
- 3. Is there documentation that students are trained and made aware of hazards and appropriate precautions before working in the laboratory?
- 4. Are there established policies and procedures which limit entrance to the lab to individuals who are advised of the potential hazards and are appropriately trained?
- 5. Is a hazard warning sign (e.g., biohazard warning symbol) posted on the access door to the laboratory? The sign should identify the biosafety level, the name and the telephone number of the laboratory supervisor or other responsible person(s), special requirements and items prohibited, and personal protective equipment required for entry.
- 6. Is a biohazard symbol placed on equipment (e.g., incubators, freezers) where biohazardous materials are used or stored?
- 7. Are spills and accidents immediately reported to the laboratory supervisor and an incident report submitted?
- 8. Are stock cultures, hypodermic syringes and needles, when not in use, secured (i.e., locking cabinet, drawer) against unauthorized access?

C. Safety Equipment (Primary Barriers)

YES NO

- 1. Does the laboratory have a properly maintained safety enclosure (Biosafety cabinet /hood) that must include **negative pressure (inward airflow) and controlled ventilation system (HEPA-filtered exhaust)**.

The Class 1 Biological Safety Cabinet is a negative-pressure, ventilated cabinet usually operated with an open front and a minimum face velocity at the work opening of a least 75 linear feet per minute (lfpm). All of the air from the cabinet is exhausted through a HEPA filter either into the laboratory or to the outside. The Class 1 BSC is designed for general microbiological research with low- and moderate-risk agents, and is useful for containment of mixers, blenders and other equipment. These cabinets are not appropriate for handling research materials that are vulnerable to airborne contamination, since the inward flow of unfiltered air from the laboratory can carry microbial contaminants into the cabinet.

The Class II Biological Safety Cabinet is designed with inward air flow at a velocity to protect personnel (75-100 lfpm), HEPA-filtered downward vertical laminar airflow for product protection, and HEPA-filtered exhaust air for environmental protection.

YES NO

- 2. Are the biological safety cabinets certified annually, when cabinets are moved, or when HEPA filters are changed?
- 3. Is face protection (goggles, mask, face shield or other splatter guards) used for anticipated splashes or sprays of infectious or other hazardous materials to the face?
- 4. Are protective laboratory coats worn while in the laboratory and then removed and left in the laboratory after use? These coats are never taken home for laundering. They are either disposed of or laundered by the school.
- 5. When required, are suitable gloves (e.g., latex, nitrile, vinyl) worn and appropriately disposed of after use?

D. Laboratory Facilities (Secondary Barriers)

YES NO

- 1. Does the laboratory have a sink for hand washing?
- 2. Is the laboratory designed so that it can be easily cleaned and decontaminated?
- 3. Are bench tops impervious to water and resistant to moderate heat, acids, alkalis, organic solvents, and chemicals used to decontaminate the work surface?
- 4. Is the laboratory furniture sturdy and capable of supporting anticipated loads and uses?
- 5. Are the spaces between benches, cabinets, and equipment accessible for cleaning?
- 6. Is storage space adequate to hold supplies for immediate use and thus prevent clutter on bench tops and in aisles?
- 7. Is the long-term storage space available outside of the laboratory work area?
- 8. Are vacuum lines, if present, protected with liquid disinfectant traps, or HEPA or hydrophobic filters?
- 9. If the laboratory has windows that open, are they fitted with fly screens?
- 10. Is the laboratory designed so that it can be easily cleaned and decontaminated?
- 11. Is the laboratory locked when not in use?
- 12. Is an autoclave available for your use?
- 13. Is an eyewash facility readily available within the laboratory?