**Application to Lease Space at**

**UH Innovation Center & Labs**

**Part 2 – Risk Assessment**

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Instructions

Fill out each section in accordance with the instructions below. Use this document to identify all anticipated hazard risks and plans to mitigate each risk. Complete your answers in red text to help distinguish answers from the questions. Use as much space as you need. These sections will be sent to EHLS to evaluate your risk management.

1. **Scope of Work:** Provide a one-page or less Scope of Work describing the type of activities that will be performed in the lab using terms that non-scientists can comprehend. This information will be used to provide context for UH’s Environmental Health & Life Safety (EHLS) as they evaluate the hazard risks.
2. **Review of Biohazardous Materials and Recombinant or Synthetic Nucleic Acid Molecules Experiments:** Answer the questions as given. Only complete this section if biological hazards are being used. Otherwise, answer question 1 in this section with “No Biological Hazards” and skip to section D.
3. **Protocols Using Biological Material:** Describe all unique protocols by answering the questions given. Do not share any trade secrets. Rather, focus on identifying the hazard risks and plans to mitigate each risk.

1. **Review of Chemical Hazards:** Answer the questions as given.
2. **Complete Chemical Inventory:** Provide an inventory of all chemicals that will be used in the lab, including flammable chemicals and particularly hazardous substances, using the template provided. Include the CAS number, chemical name, where you will would plan to store it (*e.g.* flammables cabinet, acids cabinet, chemical shelf, etc.), anticipated quantity stored, and the hazard statement as given in the SDS (cut and paste exactly as it is given in the SDS).
3. **Flammable Chemicals:** Provide an inventory of all flammable chemicals that will be used in the lab using the template provided. Provide the same information as needed for the ‘Complete Chemical Inventory’, but also include the flammability class for each chemical. A flammability classification table can be found in section D.
4. **Particularly Hazardous Substances:** Provide an inventory of all particularly hazardous substances that will be used in the lab using the template provided. Provide the same information as needed for the ‘Complete Chemical Inventory’. A list of chemicals that qualify as a particularly hazardous substance can be found in section D.
5. **Review of Hazardous Waste Protocols:** Answer the questions as given.
6. **Review of Radiation Risks:** Answer the question as given.
7. **Equipment List:** Answer the question as given.
8. **Innovation Lab Floor Plan with Proposed Location of Company:** CIP will complete this section.

# **Scope of Work**

1. **Review of Biohazardous Materials and Recombinant or Synthetic Nucleic Acid Molecules Experiments**

*IMPORTANT: Use the BMBL as a guide in the link below to help complete Section B.* <https://www.cdc.gov/biosafety/publications/bmbl5/bmbl.pdf>

1. Provide a general description of any work involving biological material. If your work doesn’t involve biological material, input “No Biological Hazards” and skip to Section D.
2. This project will use:

🞎 Biohazardous Material 🞎 Biological Toxins

🞎 Recombinant/Synthetic Nucleic Acid Molecules

🞎 None of the above

Biosafety Level \_\_\_\_\_\_\_

1. Describe procedures for all biological protocols using the space provided in Section C. In each protocols:
	1. Describe the objective(s).
	2. Describe the general summary of your protocol(s).
	3. Describe where safety exposure risks could occur.
	4. Explain the manipulation of experimental/biological material in this protocol as it relates to safety (consider toxins and/ or biological agents).
2. How will samples be manipulated?

🞎 Centrifugation 🞎 Dissection 🞎 Filtration 🞎 Mixing 🞎 Pipetting 🞎 Precipitation

🞎 Sonication 🞎 Other ­­­­­­­­­­­­­­­­­­­­­­­­­­\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

🞎 None of the above

1. Will work include attempts to obtain expression of genes or gene products (including siRNA), other than those used for selection purposes, *i.e*. Ampicillin resistance? 🞎 No 🞎 Yes
	1. If yes, list target protein(s):
	2. In the table below, list the prokaryotic/eukaryotic strains intended for use:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Strains** | **Vector** | **DNA Insert** | **Relevant Section of NIH Guidelines** | **Biosafety Containment Level** |
|  |  |  |  |  |
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1. If viral vector is to be used, will infectious virus be generated? 🞎 No 🞎 Yes
2. In the tables below, list each pathogenic and non-pathogenic microorganism and/or toxin intended for use.

|  |  |  |  |
| --- | --- | --- | --- |
| **Strain** | **Pathogenic (Y/N)** | **Volume Used** | **Risk Group** |
|  |  |  |  |
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|  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **Toxin** | **Volume Used** | **Risk Group** |
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1. Describe the types of animal tissue and/or animal cell lines intended for use.
2. Describe the types of human derived samples intended for use.
3. Type of human samples manipulated:

🞎 Cell lines 🞎 Blood 🞎 Tissues 🞎 Urine 🞎 Spinal Fluid 🞎 Serum 🞎 Feces

🞎 Semen 🞎 Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

🞎 None of the above

1. What volume will be maintained at any given time?
2. How long will the samples be maintained?
3. Describe the laboratory specific training that will be provide.
4. Describe the security plan required as it relates to biological safety.
5. Describe any specific laboratory practices that will be used.
6. List the type of personal protective equipment (PPE) that will be used.
7. List the containment equipment that will use and when they were last certified (if known).
8. Describe where containment equipment will be located in the lab.
9. Describe any decontamination procedures that will be used.
10. Describe any spill clean-up procedures that will be used.
11. How will biohazards be transferred and/or transported between/outside the lab?
12. Will ship biohazardous material? 🞎 No 🞎 Yes
13. Will generate biohazardous waste? 🞎 No 🞎 Yes
14. **Protocols Using Biological Material**

For each protocol:

1. Describe the objective.
2. Describe the general summary of your protocol.
3. Describe where safety exposure risks could occur.
4. Explain the manipulation of experimental/biological material in this protocol as it relates to safety (consider toxins and/ or biological agents).
5. **Review of Chemical Hazards**
6. Provide a complete intended Chemical Inventory using the template provided in Section E. Separate inorganic from organic chemicals. Include any gas cylinders.
7. From the Chemical Inventory, list any flammable chemicals using the template provided in Section F. Include their flammability classification based on the table below.

|  |  |  |
| --- | --- | --- |
| **Class** | **Flash Point** | **Boiling Point** |
| IA | less than 73°F | less than 100°F  |
| IB | less than 73°F | equal to or greater than 100°F   |
| IC | equal to or greater than 73°F, but less than 100°F | NA |
| II | equal to or greater than 100°F, but less than 140°F | NA |
| IIIA | equal to or greater than 140°F, but less than 200°F | NA |
| IIIB | equal to or greater than 200°F | NA |

1. From the Chemical Inventory, list any particularly hazardous substances (PHS) using the template provided in Section G. The link below is a list of PHS material to cross reference with the chemical inventory.

<http://www.ehs.ucsb.edu/files/docs/chp/2018_particularly_hazardous_list.pdf>

1. Provide an SOP for each PHS identified using a template provided by CIP. (Not included in this packet.)
2. Describe any security needs/plan required as it relates to chemical safety.
3. Describe the chemical personal protective equipment (PPE) that will be used.
4. Describe the type(s) and protocol(s) of spill kit(s) that will be used.
5. Describe any other safety equipment, not already discussed, that will be required.
6. Describe any major chemical risks that will be used in operational procedures.
7. Describe plans to mitigate the major chemical risks in operational procedures.
8. **Complete Chemical Inventory**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **CAS number** | **Chemical Name**  | **Location** | **Quantity** | **SDS Hazard Statement** |
| example: 64-17-5 | Ethyl alcohol | flammable cabinet | 1L | **Warning!** Causes severe eye irritation. **Flammable liquid and vapor.** Causes respiratory tract irritation. This substance has caused adverse reproductive and fetal effects in humans. May cause central nervous system depression. May cause liver, kidney and heart damage. Causes moderate skin irritation. |
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# **Flammable Chemicals**

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| --- | --- | --- | --- | --- | --- |
| **CAS number** | **Chemical Name**  | **Location** | **Quantity** | **SDS Hazard Statement** | **Class** |
|   |   |   |   |  |  |
|   |   |   |   |  |  |
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1. **Particularly Hazardous Substances**

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| --- | --- | --- | --- | --- |
| **CAS number** | **Chemical Name**  | **Location** | **Quantity** | **SDS Hazard Statement** |
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1. **Review of Hazardous Waste Protocols**
2. Describe any chemical hazardous waste. How will it be disposed of?
3. Describe any biological hazardous waste. How will it be disposed of? Will any biohazardous waste be generated that cannot be decontaminated by autoclave or bleach? If yes, how will that waste be managed?
4. **Review of Radiation Risks**
5. Describe any work where radiation and radioactive material may be involved.
6. **Equipment List**
7. Provide a list of equipment intend for use. Include any special power requirements, dimensions, and other needs.
8. **Innovation Lab Floor Plan with Proposed Location of Company**