Clear Form

Georgia Institute of Technology
Biological Risk Assessment Form

Part 1: Laboratory Information

Principal Investigator:		
Department:		
PI phone #:	PI email:	
School:		
Location (building/room):	Building:	Room:
	Building:	Room:
Departmental Safety Officer:		

The PI must conduct a laboratory risk assessment specific to activities in their laboratories prior to beginning work in a laboratory. The risk assessment must be reviewed annually by the PI or when a new project is initiated to ensure that the assessment is complete and current. The Risk Assessment identifies hazards to personnel and specifies mitigations to reduce the impact of these hazards. All laboratory staff must be familiar with the risk assessments for the work they will be involved with. The person conducting the assessment must verify at that end that it is complete and reflective of activities in their laboratories.

The majority of PI's will only have one "laboratory" which may encompass multiple rooms but fall under the same scope of work and share the same hazards. In some cases, a PI may have multiple laboratories with substantially different hazards and will need to have a separate risk assessment for each laboratory.

EH&S personnel are available to assist with completing the Risk Assessment form and will review it once it has been completed.

Part 2: Laboratory Hazard Assessment

The work described includes (check all relevant boxes):

Laboratory Hazard	Yes	No
Biological Materials	☐	☐
Particularly Hazardous Chemicals	☐	☐
- If yes, list:		
Radiation Hazards	☐	☐
- if yes, list:		

Part 3: Biological Risk Assessment

3.1 Biological Materials:

Microorganisms:

Risk Group[1]	Common Name	Route(s) of Transmission[2]	Signs/Symptoms of Disease	History of LAI?[3]

[1] http://osp.od.nih.gov/office-biotechnology-activities/biosafety/nih-guidelines
[2] Inhalation, Ingestion, Mucous Membrane Exposure, Percutaneous
[3] Briefly describe the history of laboratory-acquired infection

Laboratory Animals: Yes ☐ No ☐

If yes, specify species: _____ IACUC Protocol #: _____

Recombinant/Synthetic Nucleic Acids/Viral Vectors: Yes ☐ No ☐

If yes, specify: _____ IBC Protocol #: _____

Cell Culture: Yes ☐ No ☐

If yes, specify: _____ Source Organism: _____

Human or Non-Human Primate Blood/Body Fluids: Yes ☐ No ☐

If yes, specify source: _____ Sample matrix: _____

Toxins: Yes ☐ No ☐

If yes, specify: _____ Source organism_____

LD50: _____ Maximum quantity in inventory: _____

3.2 Biological Activities:

Briefly describe the laboratory activities planned with these materials:
(Please provide a technical description of the lab activities, not the experimental goals)

Do Planned Activities Include:

Inactivation and Transfer?: ☐ Yes ☐ No Large Scale(≥ 10L)?: ☐ Yes ☐ No
Shipping?: ☐ Yes ☐ No

Equipment Used in Lab Activities with These Materials Include:

☐ Centrifuge	☐ Plate Washer	☐ Cytospin
☐ Sonicator	☐ Shaker	☐ Vacuum Concentrator
☐ Pipettes	☐ Cell Sorter	☐ Autoclave
☐ Sharps (needles, scalpels, etc.)	☐ Robotics	☐ Homogenizer
☐ Vortex	☐ Aerosol chamber	☐ Vacuum/Aspirator
☐ Grinder	☐ Bead Beater	☐ Other

3.3 Biological Risk Mitigation

Engineering Controls – Primary Barriers:

☐ Class II BSC	☐ Sample transfer container	☐ Downdraft table
☐ Safety Syringes	☐ ventilated animal cage	☐ PCR workstation
☐ Centrifuge Safety Cups	☐ Negative airflow	☐ Other:_____

Administrative Controls:

Training:

Please describe site-specific training provided to laboratory members (Do not include EHS-led training):

Please indicate which EH&S Trainings are required for your laboratory:

☒ General Biosafety	(required for work with biological materials)
☐ Bloodborne Pathogens	(required for work with human blood/body fluids)
☐ Recombinant DNA	(required for work involving recombinant or synthetic nucleic acids)
☐ Autoclave Training	(required for laboratorians who will be using an autoclave)
☐ Shipping Training	(required for anyone who will be shipping materials)

Medical Surveillance:

Enrollment in Respiratory Protection Program? ☐ Yes ☐ No

TB Screening? ☐ Yes ☐ No

Required vaccines? ☐ Yes ☐ No

Contingency Planning:

EPA-Approved Disinfectant: _____

Spill Kit Present (including instructions)?: ☐ Yes ☐ No

GT Emergency Lab Signage Posted?: ☐ Yes ☐ No

Personal Protective Equipment*:

☐ Lab Coat	☐ Wrap-around Gown	☐ Face Shield
☐ Safety Glasses	☐ Nitrile Gloves	☐ N-95
☐ Latex Gloves	☐ Double Gloves	☐ Shoe covers

☐ Other:_____

Proposed Laboratory Biosafety Level(s):

☐ BSL1 ☐ ABSL1 ☐ BSL2 ☐ ABSL2 ☐ BSL3

Overall Biological Risk:

Using the table on pg. 5, determine the overall biological project risk of release or exposure to biological:

Consequence: ☐Insignificant ☐Minor ☐Moderate ☐Major ☐Critical

Probability: ☐Rare ☐Unlikely ☐Possible ☐Likely ☐Almost Certain

Inherent Project Risk: ☐Low ☐Moderate ☐High

Part 4: Risk Assessment Review

I agree to follow the guidelines outlined in the Georgia Institute of Technology Biosafety Manual as well as the recommendations outlined in the CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*. I certify that the information provided above is accurate to the best of my knowledge. My signature below indicates that I accept the risk as defined above.

_____

Principal Investigator Signature

RISK MATRIX

			CONSEQUENCE →				
			INSIGNIFICANT	**MINOR**	**MODERATE**	**MAJOR**	**CRITICAL**
			Near miss event No injury or illness	First Aid injury / illness Biological / Chemical Spill	Moderate injury / illness Reversible impairment Biological exposure	Serious injury /illness LTI Temporary Impairment* Dangerous Incident	Permanent Impairment Fatality / fatalities
↑ LIKELIHOOD ↓	**ALMOST CERTAIN**	Extremely likely	**MEDIUM**	**MEDIUM**	**HIGH**	**EXTREME**	**EXTREME**
	LIKELY	Will probably occur	**LOW**	**MEDIUM**	**HIGH**	**HIGH**	**EXTREME**
	POSSIBLE	Likely to happen but not certain	**LOW**	**LOW**	**MEDIUM**	**HIGH**	**EXTREME**
	UNLIKELY	Possible but not likely	**LOW**	**LOW**	**MEDIUM**	**MEDIUM**	**HIGH**
	RARE	Conceivable but extremely unlikely	**LOW**	**LOW**	**LOW**	**MEDIUM**	**HIGH**

Risk Assessment FAQ's & Information

Q. How many of these should I fill out?

A. That depends on the scope of your work. If you do the same general processes with the same type of material in 3 or 4 lab spaces, you can put everything on one risk assessment. If you have 2 very different projects with different risks and different organisms using separate rooms, you can fill out 2 risk assessments.

Examples:

A lab doing diagnostic assays with various risk group 2 biological materials that spread via the same route would easily be included on the same risk assessment because they have the same risks, same PPE, same precautions, etc.

A lab doing one project using human materials and recombinant DNA that require universal precautions and BSL2 containment/practices and another project that uses RG1 bacteria may consider filling out 2 risk assessments.

Q. Can I include more than one microorganism on the same row under section 3.1?

A. Yes, If you work with multiple strains of RG 2 bacteria or viruses that share the same signs/symptoms and LAI, you can include them on the same line. Don't combine organisms that have different risk groups or differ in their signs/symptoms or LAI.

Q. What type of information are you looking for under 3.2 Biological Activities?

A. This should include information about what you plan on doing with the microorganisms you listed. You should include basic assays, tests, methods, and anything relevant to how you will be working with the material.

Q. How do I know where my lab fits in on the risk matrix?

A. Use the top row of the matrix and select the consequence for the most severe possible outcome in your lab during routine work. This isn't covering unrelated incidents resulting from a personal health incident, acts of nature, etc. In the routine use of your lab what is the most likely worst consequence? Then, based on that selection, choose what the likelihood of that consequence occurring.

Examples:

a. Work with a RG1 bacteria at BSL1. Work involves sharps but no dangerous equipment or significant volume. Bacteria is extremely unlikely to cause disease, requires a large exposure event, and no/low incidence of LAI.

This would likely be a Minor consequence as the likely worst case scenario here would be a spill of bacterial material or sharps injury. Then we need to select a liklihood of one of those events happening. I would mark this as either likely or possible. This depends on the expertise of your team, experience, and how often they are using sharps/bacteria.

b. Work with a RG2 virus that spreads via aerosols/ocular routes. Work involves routine pipetting, some smaller volume centrifugation, and cell work. All work with live virus takes place in the BSC.

   This would likely fall under a Moderate consequence as there is a potential of moderate illness if a person is directly exposed. However, because all live virus is worked on in the BSC, the likelihood of a direct exposure event would either be rare or unlikely. This depends, again, on the expertise of your team, experience, and procedures for working with the material (transport to/from BSC, etc).