THE GEORGE WASHINGTON UNIVERSITY
WASHINGTON, DC

Office of Research Safety
2300 I Street, NW
Ross Hall, Suite B-05
Washington, DC 20037
202-994-8258 | labsafety@gwu.edu | researchsafety.gwu.edu

Biosafety Level One/Two (BSL-1/2) Inspection Checklist

GW's research and teaching laboratories that work with biohazards are required to have annual inspections by Office of Research Safety. These inspections are used to evaluate the implementation of appropriate laboratory principles and practices, identify any deficiencies, and provide guidance to assist lab personnel with creating a safer laboratory environment.

This inspection checklist is designed to help reduce potential exposures to biohazards. Biohazards may include: Agents that can infect and/or cause disease in humans, animals, or plants; biohazardous waste; experimentally-infected animals and animals naturally harboring zoonotic infectious agents; genetically-modified organisms; human blood, tissue, organs, cell lines, or other materials of human origin; recombinant and synthetic nucleic acid molecules; select agents and toxins; and transgenic plants and animals.

Please use this checklist to perform a self-inspection of your own laboratory. If you have any questions, please contact labsafety@gwu.edu

Lab Information		
PI:	**Inspection Date:**	**Inspected By:**
Lab Location (Bldg/Rm)	**College/Department:**	**Lab Phone:**
Lab Representative:	**Biosafety Level :**	
Lab Members:		
IBC Protocols:		
List of Agents that will be Used/Stored in Lab (List recombinant DNA, bacterial, viral, fungal, parasitic, prion, toxic, or other agents):		

Biosafety Manual				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
1. Does your Biosafety Manual contain a current copy of GW's Biosafety Manual?				
2. Does it contain lab contact information?				
3. Does it contain documented lab-specific training/manual?				

4. Does it contain emergency procedures, spill procedures, and exposureprocedures?				

Biosafety Manual (Cont.)				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
5. Does it contain a copy of approved IBC paperwork?				
6. Does it contain copies of training certificates for all lab members?				
7. Does it contain lab specific SOP's?				
8. Is it accessible to all lab members?				

Required Trainings				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
9. Have all lab members completed the Biosafety & Bloodborne Pathogens Training? ***Required for all individuals working with biohazard agents, toxins, and recombinant and synthetic nucleic acid molecule experiments or materials and for all individuals having occupational exposure to human blood, OPIM of human origin (cells/cell lines, unfixedtissues) or human BBP. Required annually by OSHA.****				
10. Have all lab members completed the in-person Laboratory Safety Training provided by HEMS? ***Required annually for all individuals working in a laboratory****				
11. Have all members completed the Biosafety Cabinet Training provided by the CDC? ***Required for all individuals working in a Biological Safety Cabinet (BSC). Required once.****				
12. If, you have an IBC protocol have all lab members completed the NIH/IBC Guidelines training? ***This training is required every 5 years for all lab members listed on an IBC protocol****				
13. Biological Shipping Training? ***Required if shipping biological materials and/or dry ice. Required for one lab member every two years by IATA.****				
14. N-95/PAPR Fit Test? ***Required for all individuals assigned to projects requiring the use of respiratory protection. Required annually by OSHA*Training is provided by HEMS.**				
15. Lentiviral Vector Training? ***Required for all individuals assigned to projects involving lentiviral vectors. Required once.****				

STANDARD PRACTICES				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
16. Does the supervisor limit access to the room in accordance with institutional policies? (Biosafety Manual)				BMBL: BSL-1, A1, p. 32; BSL-2, A1, p. 37; NIH G-II-A-1-a; NIH G-II-B-1-a
17. Do personnel wash their hands after handling potentially biohazardous materials, after removing gloves, and before leaving the laboratory?				BMBL: BSL-1, A9, p. 34; BSL-2, A9, p. 38; NIH G-II-A-1-f; NIH G-II-B-1-f
18. Is eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing food for human consumption prohibited in the lab?				BMBL: BSL-1, A10, p. 34; BSL-2, A10, p. 38; NIH G-II-A-1-e; NIH G-II-B-1-e
19. Is mouth pipetting prohibited and are mechanical pipetting devices used?				BMBL: BSL-1, A11, p. 34; BSL-2, A11, p. 38; NIH G-II-A-1-d; NIH G-II-B-1-d
20. Are written policies for the safe handling of sharps (such as needles, scalpels, pipettes, and broken glassware) followed and included in the laboratory-specific biosafety manual? (Sharps Safety)				BMBL: BSL-1, A12, p. 34; BSL-2, A12, p. 39
21. Are needle-locking syringes or safety hypodermic needles used when working with biohazards?				BMBL: BSL-1, A12, p. 34; BSL-2, A12, p. 39; NIH G-II-B-2-j
22. Do personnel understand that used disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated?				BMBL: BSL-1, A12b, p. 34; BSL-2, A12b, p. 39; NIH G-II-B-2-j
23. Are all syringes/needles/sharps disposed of in rigid, puncture-resistant, leak-proof containers?				BMBL: BSL-1, A12b, p. 35; BSL-2, A12b, p.39; 29 CFR 1910.1030(d)(2)(viii)(A) and (C)
24. Are re-usable sharps placed in a hard-walled container for transport to a processing area for decontamination?				BMBL: BSL-1, A12c, p. 35; BSL-2, A12c, p.39; 29 CFR 1910.1030(d)(2)(xiii)
25. Do lab personnel use mechanical means, such as a brush and dustpan, tongs, or forceps to clean up broken glassware?				BMBL: BSL-1, A12d, p. 35; BSL-2, A12d, p. 39
26. Are all procedures performed carefully in a manner to minimize the creation of splashes or aerosols?				BMBL: BSL-1, A13, p. 35; BSL-2, A13, p. 39; NIH G-II-A-1-g; NIH G-II-B-1-g
27. Are work surfaces decontaminated with an effective disinfectant on completion of work or at the end of the day, and especially after overt spills or splashes of biohazardous materials?				BMBL: BSL-1, A14, p. 35; BSL-2, A14, p. 40; NIH G-II-A-1-b; NIH G-II-B-1-b
28. Are all wastes that are contaminated with biohazardous materials autoclaved or decontaminated with an effective disinfectant before they are scheduled for pick-up? (Autoclave Procedures)				BMBL: BSL-1, A15, p. 35; BSL-2, A15, p. 40; NIH G-II-A-1-c; NIH G-II-B-1-c; NIH-G-II-B-2-i; 29 CFR 1910.1030(d)(2)(xiv)

STANDARD PRACTICES (CONTINUED)				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
29. Do all laboratory personnel receive training regarding their duties, safety policies, precautions and do they receive annual updates and additional training when changes in procedures or policies occur?				BMBL: BSL-1, A2, p. 32; BSL-2, A2, p. 37; 1910.1030(g)(2)
30. Have all personnel, and particularly women of childbearing age, been provided information regarding immune competence and conditions that may predispose them to infection? Are individuals encouraged to self-identify health conditions to their healthcare provider for appropriate counseling and guidance?				BMBL: BSL-1, A3, p. 33; BSL-2, A3, p. 37
31. Has everyone working in the laboratory completed a Lab-Specific Biosafety Training Checklist?				29 CFR 1910.1030

SPECIAL PRACTICES				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
32. Does the PI/supervisor inform personnel who work in the laboratory about the potential hazards and specific entry requirements (e.g., immunization)?				BMBL: BSL-1, A3, p. 33; BSL-2, B3, p.40; NIH G-II-B-2-c
33. Is a medical surveillance program in place for the laboratory?				BMBL: BSL-2, B3, p. 40
34. Are serum samples collected and stored from at-risk personnel?				NIH G-II-B-2-l
35. Has the PI/supervisor developed lab-specific biosafety procedures and incorporated them into either a Biosafety Manual or Standard Operating Procedures?				BMBL: BSL-1, A4, p. 33; BMBL: BSL-2, A4, p.37; NIH G-II-B-2-m
36. Have all laboratory personnel demonstrated proficiency in standard and special microbiological practices before working in the laboratory?				BMBL: BSL-2, B2, p. 40
37. Are cultures, tissues and other biohazardous materials placed in a container with a cover that prevents leakage during collection, handling, processing, storage, or transport?				BMBL: BSL-1, A15 p.35; BSL-2, A15, p. 40; NIH G-II-A-2-a; G-II-B-2-a
38. Is laboratory equipment routinely decontaminated, as well as after spills, splashes, and before repair, maintenance or removal from laboratory?				BMBL: BSL-2, B5, p. 41
39. Are spills involving infectious materials contained, decontaminated, and cleaned up by staff properly trained and equipped to work with infectious material?				BMBL: BSL-1, A14, p.35; BSL-2, A14, p. 40
40. Are incidents that may result in exposure to infectious materials immediately evaluated and treated according to procedures described in the laboratory-specific safety manual? (Biosafety SOP)				BMBL: BSL-2, B7, p. 41
41. Is the PI/supervisor immediately notified if there are spills and accidents that result in exposures to biohazardous materials? Are appropriate records maintained about the incidents and accidents?				BMBL: BSL-2, B7, p. 41
42. Are there written procedures for responding to exposure incidents?				BMBL: BSL-2, A4b, p.
43. Is medical follow-up obtained after spills, accidents, and potential exposures?				BMBL: BSL-2, Section VII,p.137
44. Are animals and plants not associated with the work prohibited from the laboratory?				BMBL: BSL-2, A17, p. 40

CONTAINMENT				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
45. If there is a biological safety cabinet in the lab, has it been certified within the past year? (Biological Safety Cabinets SOP)				BMBL: BSL-2, B4, p. 40; NSF 49
46. Is the biological safety cabinet free of equipment or supplies that can block the air grills and disrupt proper airflow?				BMBL p. 379; NSF 49
47. Is a biological safety cabinet used for all procedures with a potential for creating biohazardous aerosols or splashes? These may include: grinding,blending, vigorous shaking or mixing, sonic disruption, opening containers of biohazardous materials (especially whose internal pressures may differ from ambient pressures), inoculating animals intra-nasally, and harvesting infected tissues from animals or embryonated eggs. (Preventing Aerosol Production)				BMBL: BSL-2, B4a, p. 40
48. Is a biological safety cabinet used when high concentrations or large volumes of biohazardous materials are handled?				BMBL: BSL-2, B4b, p. 41
49. Is equipment (e.g., refrigerator, freezers) for use or storage of biohazardous materials labeled with a biohazard symbol?				29 CFR 1910.1030(g)(1)(i)(A)
50. If centrifuges are used, are sealed rotor heads or safety cups used and only opened in an approved biological safety cabinet or other ventilated containment device?				BMBL: BSL-2, B4b, p. 41
51. If an autoclave is used, are procedures posted? (Proper Use of Autoclave)				

PERSONAL PROTECTIVE EQUIPMENT				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
52. Do personnel wear lab coats whenever they are in the lab and remove them before leaving the lab? (Biosafety PPE)				BMBL: BSL-1, C2, p. 36; BSL-2, C1, p. 41; 29 CFR 1910.132; NIH G-II-A-1-h; NIH G-II-B-2-f
53. Are personnel prohibited from taking their lab coats home for laundering?				BMBL: BSL-2, C1, p. 41; NIH G-II-B-2-f
54. Do personnel remove gloves before touching "clean" surfaces (keyboards, telephones, elevators, etc.) and before leaving the lab?				BMBL: BSL-2, A7b, p. 38
55. Do personnel wear protective eyewear when performing procedures that have the potential to create splashes or microorganisms or other hazardous materials?				BMBL: BSL-1, C3, p. 36; BSL-2, C2, p. 41
56. When biohazardous materials must be manipulated outside a biological safety cabinet, do personnel use eye and face protection?				BMBL: BSL-2, B4c, p. 41 and C2, p.41
57. Do personnel wear gloves to prevent contact with biohazardous materials?				BMBL: BSL-1, A7, p. 34; BSL-2, A7, p. 38; NIH G-2-B-2-h; 29 CFR 1910.132

PERSONAL PROTECTIVE EQUIPMENT				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
58. Are alternatives to latex gloves available for personnel with latex sensitivity?				BMBL: BSL-1, A7a, p. 34; BSL-2, A7a, p. 38; 29 CFR 1910.132p.
59. Are gloves changed when contaminated, when glove integrity is compromised, or when otherwise necessary?				BMBL: BSL-1, A7c, p. 34; BSL-2, A7c, p. 38; 29 CFR 1910.132
60. Are hands washed after removing gloves?				BMBL: BSL-1, A9, p. 34; BSL-2, A9, p.38; 29 CFR 1910.132
61. Are disposable gloves prohibited from being washed or reused?				BMBL: BSL-1, A7d, p. 34; BSL-2, A7d, p. 38; 29 CFR 1910.132
62. Are contaminated gloves disposed properly?				BMBL: BSL-1, A7d, p. 34; BSL-2, A7d, p. 38; 29 CFR 1910.132
63. Are eye, face, and respiratory protection worn in rooms containing infected animals?				BMBL: BSL-2, C4, p. 41; 29 CFR 1910.132

LABORATORY FACILITIES				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
64. Is a BIOHAZARD sign posted on the lab entrance door, which includes the biosafety level, any required immunizations, emergency contact numbers, and any personal protective equipment that must be worn in the lab?				BMBL: BSL-1, A5 p. 33; BSL-2, A5, p. 38; NIH G-II-B-2-d
65. Do laboratories have doors for access control?				BMBL: BSL-1, D1, p. 36; BSL-2, D1, p. 42
66. Do laboratories have doors that are self-closing?				BMBL: BSL2, D1, p. 42
67. Does the lab have a sink for hand washing?				BMBL: BSL-1, D2, p. 36; BSL-2, D2, p. 42; NIH G-II-A-4-d; NIH G-II-B-4-d
68. Are carpets and rugs prohibited in the laboratory?				BMBL: BSL-1, D4a, p. 36; BSL-2, D4a, p. 42
69. Is furniture in the laboratory capable of supporting anticipated loads and uses?				BMBL: BSL-1, D5, p. 36; BSL-2, D5, p. 42; NIH G-II-A-4-c
70. Is the room clean and are spaces between benches, cabinets and equipment accessible for cleaning?				BMBL: BSL-1, D4b, p. 36; BSL-2, D4b, p. 42; NIH G-II-A-4-c; NIH G-II-B-4-c

LABORATORY FACILITIES (CONTINUED)				
71. Are bench tops impervious to water and resistant to moderate heat and the chemicals used to decontaminate the work surfaces and equipment?				BMBL: BSL-1, D5a, p. 36; BSL-2, D5a, p. 42; NIH G-II-A-4-b; NIH G-II-B-4-b
72. Are chairs and other furniture used in the lab covered with a non-fabric material that can be easily decontaminated?				BMBL: BSL-1, D5b, p. 36; BSL-2, D5b, p. 42
73. Are windows that open to the exterior fitted with screens?				BMBL: BSL-1, D6, p. 36; BSL-2, D6, p. 42; NIH G-II-A-4-e; NIH G-II-B-4-e
74. Are biological safety cabinets located away from doors, windows that can be opened, heavily traveled lab areas, and other potentially disruptive equipment?				BMBL: BSL-2, D10a, p. 42
75. If vacuum lines are used, are they protected with High Efficiency Particulate Air (HEPA) filters or liquid disinfection traps?				BMBL: BSL-2, D8, p. 42
76. Is there an eyewash station readily available in the lab?				BMBL: BSL-1, D3,p. 36; BSL-2, D3, p.42
77. Does the room provide an inward flow of air without recirculation to spaces outside the room?				BMBL: BSL-2, D9, p. 42
78. Is there a method for decontaminating waste available in the facility (e.g., autoclave, chemical disinfection, incineration, or other validated decontamination method)?				BMBL: BSL-2, B6, p. 41; NIH G-II-B-4-f

REQUIREMENTS FOR OSHA BLOODBORNE PATHOGENS				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
79. Have personnel been offered and received appropriate immunizations for the agents potentially present in the lab (e.g., hepatitis B)? Or declined in writing? (Bloodborne Pathogen Exposure Control Plan)				29 CFR 1910.1030(f)(1)(i)
80. Do personnel have access to the GW *Bloodborne Pathogens Exposure Control Plan?* (Bloodborne Pathogen Exposure Control Plan)				29 CFR 1910.1030(g)(2)(vii)(D)
81. Have personnel with the potential for exposure to bloodborne pathogens or other potentially infectious materials completed ORS's Biosafety & Bloodborne Pathogens Training?				29 CFR 1910.1030(g)(2)(i)

REQUIREMENTS FOR RECOMBINANT AND SYNTHETIC NUCLEIC ACID MOLECULES				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
82. Has the PI's recombinant/synthetic nucleic acid research been reviewed and approved by the Institutional Biosafety Committee?				NIH Sections IV-B-2 and IV-B-7
83. Does the laboratory have 10 or more liters of culture present?				NIH Section III-D-6
84. Is the PI familiar with which section of the NIH Guidelines their research falls under?				NIH Section III

REQUIREMENTS FOR RECOMBINANT AND SYNTHETIC NUCLEIC ACID MOLECULES				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
85. Does the laboratory have an emergency response plan for dealing with accidents, spills, or other incidents involving recombinant/synthetic nucleic acid molecules?				NIH IV-B-2-b-(6)
87. Are personnel familiar with the emergency response procedures for spills or exposures involving recombinant/synthetic nucleic acid molecules?				NIH IV-B-2-b-(6)
88. Do lab personnel have access to the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules?(NIH Guidelines)				NIH G-I
89. Do personnel have access to copies of procedures (e.g., SOPs) for recombinant/synthetic nucleic acid molecules?				NIH G-I
90. Are animals not involved in the research prohibited in the room?				NIH G-II-B-2-g
91. Are hypodermic needles and syringes used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles?				NIH G-II-B-2-j
92. Are only needle-locking syringes or disposable syringe-needle units (i.e., needle is integral to the syringe) used for the injection or aspiration of fluids containing organisms that contain recombinant or synthetic nucleic acid				NIH G-II-B-2-j
93. Is extreme caution used when handling needles and syringes to avoid autoinoculation and the generation of aerosols during use and disposal?				NIH G-II-B-2-j
94. Are spills and accidents, which result in overt exposures to organisms containing recombinant or synthetic nucleic acid molecules immediately, reported to the Biological Safety Officer and Institutional Biosafety Committee?				NIH G-II-B-2-k
95. Is an insect and rodent control program in effect?				NIH G-II-A-2-b; NIH G-II-B-2-e
96. Has a laboratory-specific biosafety manual been adopted? (Lab-Specific Manual)				NIH G-II-B-2-m
97. Are personnel required to read and follow the laboratory-specific biosafety manual? (Lab-Specific Manual)				NIH G-II-B-2-m

REQUIREMENTS FOR TOXINS				
Questions:	**Yes**	**No**	**N/A**	**Reference(s)**
98. Does the research involving working with or generating any toxins of biological origin? If yes, which toxin(s) and how many milligrams?				42 CFR 73
99. Does the laboratory have any toxins listed on the Select Agent and Toxin list? (Select Agents and Toxins)				42 CFR 73
100. Is an inventory control system in place for the toxins?				BMBL, Appendix I
101. Is all work with toxins conducted within a certified chemical fume hood or Biological Safety Cabinet?				BMBL, Appendix I

Equipment Inventory

Is there an autoclave present? (Y/N)					
If yes, please include the following information for each:					
	Model Number	Serial Number	Location	Last Certification Date	Certification Due Date
Autoclave (1)					
Autoclave (2)					
Autoclave (3)					

Is there a biological safety cabinet (BSC) present? (Y/N)					
If yes, please include the following information for each:					
	Model Number	Serial Number	Location	Last Certification Date	Certification Due Date
BSC (1)					
BSC (2)					
BSC (3)					
BSC (4)					
BSC (5)					