

## Biosafety level one and two inspection checklist

ASU's research and teaching laboratories that work with biohazards are required to have annual inspections by Environmental Health and Safety biosafety and biosecurity professionals. This checklist will be used during the annual inspections. Laboratory personnel should use this checklist to identify safety and regulatory deficiencies and address them before their annual inspection occurs.

This inspection checklist is designed to help reduce potential exposures to biohazards. Biohazards may include:

- Agents that can infect 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.
- Transgenic plants and animals.

Please use this checklist to perform a self-inspection of your own laboratory. If you check **no** to any of these questions, please correct this finding. In doing so, your laboratory will comply with regulations and make a safer working environment for everyone who works or enters your laboratory. If you have any questions, please contact EHS.

Date:	Lab location(s):
Investigator:	Inspector(s):

Sta	andard practices	1		1	
Qu	estions:	Yes	No	N/A	Reference(s)
1.	Does the supervisor limit access to the room in accordance with institutional policies? See <u>Biosafety manual</u> for reference.				B001; BMBL: BSL-1, A1, p. 30; BSL-2, A1, p. 33; NIH G-II-A-1-a; NIH G- II-B-1-a
2.	Do personnel wash their hands after handling potentially biohazardous materials, after removing gloves and before leaving the laboratory?				B002; BMBL: BSL-1, A2, p. 30; BSL-2, A2, p. 33; NIH G-II-A-1-f; NIH G-II-B-1-f
3.	Is eating, drinking, smoking, handling contact lenses, applying cosmetics and storing food for human consumption prohibited in the lab?				B003; BMBL: BSL-1, A3, p. 30; BSL-2, A3, p. 33; NIH G-II-A-1-e; NIH G- II-B-1-e
4.	Is mouth pipetting prohibited and are mechanical pipetting devices used?				B004; BMBL: BSL-1, A4, p. 30; BSL-2, A4, p. 34; NIH G-II-A-1-d; NIH G- II-B-1-d
5.	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? See <u>Sharpsfact sheet</u> for reference.				B005; BMBL: BSL-1, A5, p. 30; BSL-2, A5, p. 34
6.	Are needle-locking syringes or safety hypodermic needles used when working with biohazards?				B006; BMBL: BSL-1, A5, p. 30; BSL-2, A5, p. 34; NIH G-II-B-2-j
7.	Do personnel understand that used disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes or otherwise manipulated?				B007; BMBL: BSL-1, A5a, p. 30;BSL-2, A5a, p. 34
8.	Are all syringes, needles and sharps disposed of in rigid, puncture-resistant, leak-proof containers?				B008; BMBL: BSL-1, A5b, p. 31;BSL-2, A5b, p. 34; 1910.1030(d)(2)(viii)(C)

9. Are re-usable sharps placed in a hard-walled container for transport to a processing area for decontamination?		B009; BMBL: BSL-1, A5c, p. 31;BSL-2, A5c, p. 34; 1910.1030(d)(2)(xiii)
10. Do lab personnel use mechanical means, such as a brush anddustpan, tongs or forceps to clean up broken glassware?		B010; BMBL: BSL-1, A5d, p. 31;BSL-2, A5d, p. 34
11. Are all procedures performed carefully in a manner to minimize the creation of splashes or aerosols?		B011; BMBL: BSL-1, A6, p. 31; BSL-2, A6, p. 34; NIH G-II-A-1-g; NIH G- II-B-1-g
12. Are work surfaces decontaminated with an effective disinfectanton completion of work or at the end of the day, and especially after overt spills or splashes of biohazardous materials?		B012; BMBL: BSL-1, A7, p. 31; BSL-2, A7, p. 34; NIH G-II-A-1-b; NIH G- II-B-1-b
13. Are all wastes that are contaminated with biohazardous materials autoclaved or decontaminated with an effective disinfectant before they are scheduled for pick-up? See <u>Proper Use of Autoclave</u> for reference.		B013; BMBL: BSL-1, A8, p. 31; BSL-2, A8, p. 34; 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)
14. 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 orpolicies occur? See <u>Laboratory-Specific Biosafety Training</u> <u>Checklist</u> for reference.		B014; BMBL: BSL-1, p. 32; A11, BSL-2, A11, p. 35; 1910.1030(g)(2)
15. Have all personnel, and particularly women of childbearing age, been provided information regarding immune competence and conditions that may predispose them to infection? Are individualsencouraged to self-identify health conditions to their healthcare provider for appropriate counseling and guidance?		B015; BMBL: BSL-1, A11, 32; BSL-2, A11, p. 35
16. Has everyone working in the laboratory completed a Lab-Specific Biosafety Training Checklist? See <u>Laboratory-Specific Biosafety</u> <u>Training Checklist</u> for reference.		B016: ASU Biosafety Manual

Standard practices				
Questions:	Yes	No	N/A	Reference(s)
17. Does the PI or supervisor inform personnel who work in the laboratory about the potential hazards and specific entry requirements (e.g., immunization)?				B017; BMBL: BSL-1, A11, 32; BSL-2, B1, p. 35; NIH G-II-B-2-c
18. Is a medical surveillance program in place for the laboratory?				B018; BMBL: BSL-2, B2, p. 35
19. Are serum samples collected and stored from at-risk personnel?				B019; BMBL: BSL-2, B3, p. 35; NIHG-II-B-2-I
20. Has the PI or supervisor developed lab-specific biosafety procedures and incorporated them into either a Biosafety Manual or Standard Operating Procedures? See <u>Biosafety SOP</u> for reference.				B020; BMBL: BSL-2, B4, p. 35

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Questions:	Yes	No	N/A	Reference(s)
21. Have all laboratory personnel demonstrated proficiency in standard and special microbiological practices before working in the laboratory?				B021; BMBL: BSL-2, B5, p. 35
22. Are cultures, tissues and other biohazardous materials placed in a container with a cover that prevents leakage during collection, handling, processing, storage or transport?				B022; BMBL: BSL-1, A8a, p.31; BSL-2, B6, p. 35; NIH G-II-A-2-a; G-II-B-2-a
23. Is laboratory equipment routinely decontaminated, as well as after spills, splashes, and before repair, maintenance or removal from laboratory?				B023; BMBL: BSL-1, A8, p.31; BSL-2, B7, p. 35
24. Are spills involving infectious materials contained, decontaminated and cleaned up by staff properly trained and equipped to work with infectious material?				B024; BMBL: BSL-1, A8, p.31; BSL-2, B7a, p. 36

25. Are incidents that may result in exposure to infectious materials immediately evaluated and treated according to procedures described in the laboratory-specific safety manual? See <u>Biosafety</u> <u>SOP</u> for reference.		B025; BSL-2, B8, p. 36
26. Is the PI or supervisor immediately notified if there are spills and accidents that result in exposures to biohazardous materials?		B026; BSL-2, B8, p. 36
27. Are there written procedures for responding to exposures?		B027; BSL-2, B8, p. 36
28. Is medical follow-up obtained after spills, accidents and potential exposures?		B028; BSL-2, B8, p. 36
29. Are animals and plants not associated with the work prohibited from the laboratory?		B029; BSL-2, B9, p. 36

Yes	No	N/A	Reference(s)
			B030; BSL-2, C1, p. 36; NSF 49
			B031; p. 308; NSF 49
			B032; BSL-2, C2a, p. 36
			B033; BSL-2, C1b, p. 36
			B034; 29 CFR 1910.1030(g)(1)(i)(A)
			B035; ASU Biosafety Manual
			B036; ASU Biosafety Manual; 29CFR 1910.132

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Questions:	Yes	No	N/A	Reference(s)
<ol> <li>Do personnel wear lab coats whenever they are in the lab andremove them before leaving the lab? See <u>Biosafety PPE</u> for reference.</li> </ol>				B037; BMBL: BSL-1, C2, p. 32; BSL-2, C2, p. 36; 29 CFR 1910.132; NIH G-II-A-1-h; NIH G-II- B-2-f
38. Are personnel prohibited from taking their lab coats home for laundering?				B038; BMBL: BSL-2, C2, p. 36; NIH G-II-B-2-f; ASU Biosafety Manual
39. Do personnel <u>remove gloves</u> before touching clean surfaces such as keyboards, telephones and elevators and before leaving thelab?				B039; BMBL: BSL-2, C2, p. 36; ASU Biosafety Manual
40. Do personnel wear protective eyewear when performing procedures that have the potential to create splashes or microorganisms or other hazardous materials?				B040; BMBL: BSL-1, C3, p. 32; BSL-2, C3, p. 36
41. When biohazardous materials must be manipulated outside a biological safety cabinet, do personnel use <u>eye and face protection</u> ?				B041; BMBL: BSL-2, C3, p. 36; ASU Biosafety Manual
42. Do personnel wear gloves to prevent contact with biohazardous materials?				B042; BMBL: BSL-1, C4, p. 32; BSL-2, C4, p. 37; NIH G-2-B-2-h; 29 CFR 1910.132

43. Are alternatives to latex gloves available for personnel with latex sensitivity?		B043; BMBL: BSL-1, C4, p. 32; BSL-2, C4, p. 37; 29 CFR 1910.132
44. Are gloves changed when contaminated, when glove integrity is compromised, or when otherwise necessary?		B044; BMBL: BSL-1, C4a, p. 32; BSL-2, C4a, p. 37; 29 CFR 1910.132
45. Are <u>hands washed</u> after removing gloves?		B045; BMBL: BSL-1, C4b, p. 32; BSL-2, C4b, p. 37; 29 CFR 1910.132
46. Are disposable gloves prohibited from being washed or reused?		B046; BMBL: BSL-1, C4c, p. 32; BSL-2, C4c, p. 37; 29 CFR 1910.132
47. Are contaminated gloves disposed properly?		B047; BMBL: BSL-1, C4c, p. 32; BSL-2, C4c, p. 37; 29 CFR 1910.132
48. Are eye, face and respiratory protection worn in rooms containinginfected animals?		B048; BMBL: BSL-2, C5, p. 37; 29CFR 1910.132

## Laboratory facilities Yes N/A **Reference(s) Questions:** No B049; BMBL: BSL-1, A9 p. 31; 49. Is a **biohazard** sign posted on the lab entrance door, whichincludes BSL-2, A9, p. 34; NIH G-II-B-2-d; the biosafety level, any required immunizations, emergency contact ASU numbers, and any personal protective equipment that must be worn **Biosafety Manual** in the lab? B050: ASU Biosafety Manual 50. Does the lab have a current registration in EHSA? $\square$ $\square$ 51. Do laboratories have doors for access control? B051; BMBL: BSL-1, D1, p. 33; BSL-2, D1, p. 37 52. Do laboratories have doors that are self-closing? B052; BMBL: BSL2, D1, p. 37 53. Does the lab have a sink for hand washing? B053; BMBL: BSL-1, D2, p. 33; BSL-2, D2, p. 37; NIH G-II-A-4-d; NIH G- II-B-4-d 54. Are carpets and rugs prohibited in the laboratory? B054; BMBL: BSL-1, D3, p. 33; 4-d-2, D3, p. 37 55. Is furniture in the laboratory capable of supporting anticipatedloads B055; BMBL: BSL-1, D4, p. 33; and uses? BSL-2, D4, p. 37; NIH G-II-A-4-c 56. Is the room clean and are spaces between benches, cabinetsand B056; BMBL: BSL-1, D4, p. 33; equipment accessible for cleaning? BSL-2, D4, p. 37; NIH G-II-A-4-c; NIH G- II-B-4-c 57. Are bench tops impervious to water and resistant to moderate heat B057; BMBL: BSL-1, D4a, p. 33; and the chemicals used to decontaminate the work surfaces and BSL-2, D4a, p. 37; NIH G-II-A-4equipment? b:NIH G-II-B-4-b 58. Are chairs and other furniture used in the lab covered with a non-fabric B058; BMBL: BSL-1, D4b, p. $\square$ material that can be easily decontaminated? 33;BSL-2, D4b, p. 37 59. Are windows that open to the exterior fitted with screens? B059; BMBL: BSL-1, D5, p. 33; $\square$ $\square$ Π BSL-2, D5, p. 37; NIH G-II-A-4-e; NIH G- II-B-4-e B060; BMBL: BSL-2, D6, p. 38 60. Are biological safety cabinets located away from doors, windows that can be opened, heavily traveled lab areas and other potentially disruptive equipment? 61. If vacuum lines are used, are they protected with High Efficiency B061; BMBL: BSL-2, D7, p. 38; ASU $\square$ Particulate Air, or HEPA, filters or liquid disinfection traps? **Biosafety Manual** 62. Is there an eyewash station readily available in the lab? B062; BMBL: BSL-2, D8, p. 38; ASU **Biosafety Manual** B063; BMBL: BSL-2, D9, p. 38; ASU 63. Does the room provide an inward flow of air without recirculation to П **Biosafety Manual** spaces outside the room? 64. Is a method for decontaminating all waste available in the facility B064; BMBL: BSL-2, D11, p. 38; NIH (e.g., autoclave, chemical disinfection, incineration or other G-II-B-4-f; ASU Biosafety Manual validated decontamination method)?

Additional requirements for OSHA bloodborne pathogens							
Questions:	Yes	No	N/A	Reference(s)			
65. Have personnel been offered and received appropriate immunizations for the agents potentially present in the lab (e.g., hepatitis B)? Or declined in writing? ( <u>Bloodborne Pathogen Exposure Control Plan</u> ) ( <u>Hepatitis B Virus Consent Declination Form</u> )				B065; 29 CFR 1910.1030(f)(1)(i)			
66. Do personnel have access to the ASU Bloodborne Pathogens Exposure Control Plan? ( <u>Bloodborne Pathogen Exposure Control</u> <u>Plan</u> )				B066; 29 CFR 1910.1030(g)(2)(vii)(D)			
<ol> <li>Have personnel with the potential for exposure to bloodborne pathogens or other potentially infectious materials completed ASU's Bloodborne Pathogens Training? (<u>Lab Specific Biosafety</u> <u>Training</u>)</li> </ol>				B067; 29 CFR 1910.1030(g)(2)(i)			

Additional requirements for recombinant and synthetic nucleic acid molecules					
Questions:	Yes	No	N/A	Reference(s)	
68. Has the PI's recombinant/synthetic nucleic acid research been reviewed and approved by the Institutional Biosafety Committee?				B068; NIH Section III	
69. Does the laboratory have 10 or more liters of culture present?( <u>Large</u> <u>Scale Research Fact Sheet</u> )				B069; NIH III-D-6	
70. Is the PI familiar with which section of the NIH Guidelines theirresearch falls under?				B070; NIH IV-B-7	
71. Does the laboratory have an emergency response plan for dealing with accidents, spills, or other incidents involving recombinant/synthetic nucleic acid molecules?				B071; NIH IV-B-2-b-(6)	
72. Are personnel familiar with the emergency response procedures for spills or exposures involving recombinant/synthetic nucleic acid molecules?				B072; NIH IV-B-2-b-(6)	
73. Do lab personnel have access to the NIH Guidelines for Research Involving Recombinant or Synthetic Nucleic Acid Molecules? ( <u>NIH Guidelines</u> )				B073; NIH G-I	
74. Do personnel have access to copies of procedures (e.g., SOPs) for recombinant/synthetic nucleic acid molecules?				B074; NIH G-I	
75. Are animals not involved in the research prohibited in the room?				B075; NIH G-II-B-2-g	
76. Are hypodermic needles and syringes used only for parenteral injection and aspiration of fluids from laboratory animals and diaphragm bottles?				B076; NIH G-II-B-2-j	
77. 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 molecules?				B077; NIH G-II-B-2-j	
78. Is extreme caution used when handling needles and syringes to avoid autoinoculation and the generation of aerosols during use and disposal?				B078; NIH G-II-B-2-j	
79. 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?				B079; NIH G-II-B-2-k	
80. Is an insect and rodent control program in effect?				B080; NIH G-II-A-2-b; NIH G-II-B-2-e	
81. Has a laboratory-specific biosafety manual been adopted? ( <u>Lab-Specific Manual</u> )				B081; NIH G-II-B-2-m	
82. Are personnel required to read and follow the laboratory-specific biosafety manual? ( <u>Lab-Specific Manual</u> )				B082; NIH G-II-B-2-m	

Additional requirements for toxins				
Questions:	Yes	No	N/A	Reference(s)
83. Does the research involving working with or generating any toxinsof biological origin? If yes, which toxin(s) and how many milligrams?				B083; ASU Biosafety Manual
84. Does the laboratory have any toxins listed on the Select Agent and Toxin list? ( <u>Select Agents and Toxins</u> )				B084; 42 CFR 73
85. Is an inventory control system in place for the toxins?				B085; BMBL, Appendix I
86. Is all work with toxins conducted within a certified chemical fumehood or Biological Safety Cabinet?				B086; BMBL, Appendix I, ASU Biosafety Manual

## **Equipment inventory**

Is there an autoclave present? (Yes □, No □) 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)						

If you need additional space for more than (3) pieces of equipment, please use the blank table below.

Is there a biological safety cabinet (BSC) present? <b>(Yes</b> □, <b>No</b> □ <b>)</b> 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)						

If you need additional space for more than (3) pieces of equipment, please use the blank table below.

Is there a centrifuge present? (Yes □, No □)						
If yes, please include the following information for each:						
	Model Number	Serial Number	Location	Last Certification Date	Certification Due Date	
Centrifuge (1)						
Centrifuge (2)						
Centrifuge (3)						

If you need additional space for more than (3) pieces of equipment, please use the blank table below.

Is there a flow cytom If yes, please include					
n yes, please include	Model Number	Serial Number	Location	Last Certification Date	Certification Due Date
Flow Cytometer (1)					
Flow Cytometer (2)					
Flow Cytometer (3)					

If you need additional space for more than three pieces of equipment, please use extra blank sheets of paper.

Questions? Contact ASU Environmental Health and Safety at 480-965-1823 or email <u>asuehs@asu.edu</u>. Revision date 8/26/2021