**Standard Operating Procedures for SARS-CoV-2/CoVID19 Research** (Version 09.18.2020)

This document serves as a supplement to the general biosafety procedures (Good Standard Microbiological Practices) that should already be in place for your laboratory. The PI should delete any rows that do not apply to the proposed research, and add rows to the blue section at the bottom for additional procedures. Please note the building code and room number for each procedure. The completed document must be included with any Biosafety Protocol (BSP) application or amendment for research use of SARS-CoV-2 materials or exposure to CoVID19 research subjects during active infection.

**PI: BSP#**

**Disinfectant:**  **Contact time:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Procedure** | **Containment level** | **Location** | **PPE requirements** | **Safety precautions** |
| Specimen collection from infected subjects |  |  |  | * This section is currently under construction, please notify the Biological Safety Office if specimens will be collected by any research staff that is not involved with the standard of care treatment of these subjects. |
| Analysis of stool, whole blood, serum and urine | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Use of automated instruments and analyzers that have an aerosol containment features | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Staining and microscopic analysis of fixed smears | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Examination of bacterial cultures | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Pathologic examination and processing of formalin-fixed or otherwise inactivated tissues (inactivation methods must be validated) | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Molecular analysis of extracted nucleic acid preparations (NO nucleic acid extraction/isolation) | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Final packaging of specimens for transport to diagnostic laboratories for additional testing (specimens should already be in a sealed, decontaminated primary container) | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Electron microscopy with glutaraldehyde-fixed grids | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| FACS analysis of fixed samples | BSL2 |  | Surgical mask, gloves, lab coat, eye protection | * Access to the laboratory is restricted when work is being conducted * All procedures in which infectious aerosols or splashes may be created are conducted in a biosafety cabinet (BSC) * Centrifuge safety caps should be used to avoid exposure to aerosols * Surface decontamination at every step using EPA List N disinfectants and contact times * All contaminated items should be treated as biomedical waste |
| Aliquoting or diluting specimens | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Inoculating bacterial or mycological culture media | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Performing diagnostic lab tests that do not involve propagation of viral agents *in vitro* or *in vivo* | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Nucleic acid extraction procedures | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Preparation and chemical- or heat-fixing of smear for microscopic analysis | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Procedures with respiratory samples and secretions | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| FACS analysis of non-fixed samples | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Inactivated virus lysate | BSL2+/BSL2 enhanced |  | Surgical mask or N-95 respirator (for respiratory secretions), double gloves, disposable impervious gown, goggles/safety glasses with side shields/face shield | * All samples opened inside BSC in case of spills/leakage * Surface decontamination at every step using EPA List N disinfectants and contact times * Scheduled time for handling SARS-CoV-2 samples * Two person method to minimize withdrawing hands from BSC * Centrifugation of blood specimens in safety cups or sealed rotor, loaded and unloaded in BSC * All contaminated items should be disinfected before being removed from BSC and placed in biomedical waste container for disposal |
| Add any other procedures here |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

**Mandatory reporting of illness or biological spills/accidents/possible exposures:**

* All spills, injuries or exposures involving SARS-CoV-2 samples must be reported to the Principal Investigator and the Biological Safety Office
* Possible exposure events must also be reported to Employee/Student Health.
* Researchers must self-monitor for signs and symptoms of COVID-19; any illness must be reported to the PI. Signs and symptoms of COVID-19 include
  + Fever or chills
  + Cough
  + Shortness of breath or difficulty breathing
  + Fatigue
  + Muscle or body aches
  + Headache
  + New loss of taste or smell
  + Sore throat
  + Congestion or runny nose
  + Nausea or vomiting
  + Diarrhea

**EXPERIMENTS THAT REQUIRE BSL3 CONTAINMENT**

The following types of experiments require BSL3 containment and cannot be conducted at Augusta University at this time:

* Virus culture or isolation
* Initial characterization of viral agents recovered in culture
* *In vitro* or *in vivo* models of infection involving wild type virus
* High speed cell sorting
* Inactivation of viral cultures for transfer out of containment