Microscope Imaging of Biological Agents

This document describes the policy and procedures for imaging of biological agents with microscopes at MSU. Adherence to this policy will ensure that employees, students and members of the public are not exposed to biological agents.

Responsibility

Ensuring that microscopes are appropriately used, cleaned and decontaminated is the responsibility of the individual operating the microscope.

The MSU Biosafety Officer has established minimum requirements for proper decontamination of laboratory equipment that may have been exposed to biological materials, (see MSU Biosafety Manual.)

Procedure

1. BSL1 and BSL2 biological agents (excluding fungus and spore-forming bacteria) and viruses can be live imaged using appropriate disinfection protocols known to inactivate the biological agent. See step four for more information on disinfection.

2. Spore-forming bacteria and all fungus, regardless of their containment level, must be contained (leak proof containers) or fixed prior to imaging.

3. The minimum personal protective equipment (PPE) to wear when operating a microscope with a live BSL2 biological agent is a lab coat, gloves, and eye-protection. Additional PPE may be required depending upon the specific biological agent used.

4. All microscopes used to image biological agents must be decontaminated with an appropriate disinfectant for the biological agent that is also safe for the instrument.
   a. An appropriate disinfectant is one that has demonstrated decontamination efficacy with regard to the biological material of concern and has been shown to not create additional hazards during use.
   b. Additional information is available through MSU’s Pathogen Safety Data Sheets, the Biosafety Officer, or laboratory SOPs.