

UMD Imaging Incubator

Standard Operating Procedures

General Policies

1. Faculty, staff and students who wish to use the microscope should contact the director of the facility, Stephan Brenowitz (phone: 301.314.0268, email: sb17@umd.edu) to schedule a training session (typically 2 – 3 hours). Each individual user of the confocal microscope must receive instruction in the use and care of the microscope, regardless of whether the user has prior experience with a similar microscope.
2. The microscopes are available to trained, eligible users on an equal basis. Users with less than 15 hours of experience must make an appointment with the director during regular business hours (8am-4:30pm) for assistance with microscope operation.
3. The Imaging Incubator in B0118 PSC operates as a Biosafety Level 2 (BSL-2) level laboratory. Safety for all users and Core personnel is a priority. Please see the following section on the “BSL-2 Protocol for Safe Use of Imaging Core” for additional information.
4. Scheduling for the microscopes is performed online using Google Calendar (www.google.com/calendar).
5. Scheduling:
 - a. From 8am to 6pm M-F, each user may sign up for a total of four hours at a time.
 - b. Users may sign up for an additional 6 hours of microscope time during off-peak hours (after 6pm M-F, weekends and holidays).
 - c. In addition, the hours from 6pm to 6am M-F may be reserved up to 14 hours at a time for live-cell imaging experiments
 - d. The facility director reserves the right to modify any calendar entry that does not adhere to policy. Any user who violates scheduling policy more than 3 times will lose access to the instrument calendar.
6. Reservations are guaranteed to a user for a period of 30 minutes after the beginning of the time reserved. After 30 minutes, the microscope, if not in use, becomes available to any other user.
7. The director reserves the right to bill for unused time at the regular rate.
8. Users may only sign up for time on the microscope using their own name. The user who reserved time on the microscope must be present for the entire length of the confocal appointment. Under no circumstances may a user sign up for time using another person's name.
9. Cancellations made less than 24 hours in advance without prior approval will be billed at the regular rate.
10. Users who have reserved time on the microscope are responsible for reporting for their scheduled session.
 - a. First time no-shows will be billed at the full rate and receive a warning.
 - b. Repeat no-shows will lose their microscope privileges.
11. Users are responsible for ensuring the microscope is shut down properly. If the microscope is not scheduled to be used again for at least 1 hour following a session, all components of the microscope should be shut down according to the posted shutdown procedure.
 - a. If the microscope is not shut down properly and any component of the microscope (i.e. lasers, computer or mercury bulb) is left on for an extended period of time, users will be charged for this time at the regular rate.
 - b. On any subsequent offenses, users will be subject to further penalties (potentially including permanent loss of access to the microscope) at the discretion of the facility manager.
12. Users are responsible for ensuring the microscope and surrounding area are kept clean and organized. Microscope objective lenses should be handled with care and cleaned after each use with the provided lens paper and lens cleaning solution.
13. No food or drink is permitted in the microscope room.
14. Access to the Imaging Incubator is controlled with the Keywatcher System. The system allows entry at any time of the day, and maintains a record of all entries into the facility. The outer door of the facility should never be left open for any reason. Anyone requiring entry into this area should contact the facility director for access. Users are responsible for the activities of anyone they provide with access to the facility.
15. The microscope computer may be used for temporary data storage only. Each individual user is responsible for his or her own data.
16. Users are expected to pay the current Imaging Incubator rate for the use of the confocal microscope.
17. Failure to follow training and standard procedures will be subject to penalty at the discretion of the facility director. In general, users will be expected to cover the expenses incurred by any misuse of the microscope. However, if mistakes are made in good faith and reported promptly, these will be considered as mitigating factors.
18. Appeals to this policy are to be submitted in writing to the Faculty Supervisor (Dr. Delwiche, email: delwiche@umd.edu).

BSL-2 Protocol for Safe Use of Imaging Incubator

The UMD Imaging Core operates as a Biosafety Level 2 (BSL-2) level laboratory. The guidelines presented below will ensure you and all other users of the Imaging Core are safe when such experiments are carried out. All necessary precautions must be taken to prevent exposure of others. These rules (below) are reviewed and revised as necessary each year and each facility user is responsible for reviewing them on a regular basis to ensure they are in compliance.

Overview

There are different Biosafety Levels (BSL) for live samples used in research:

BSL-1: Includes yeast, non-pathogenic *E. coli* and other organisms not known to cause disease in humans.

BSL-2: Includes agents that pose moderate hazards to personnel and the environment, including all human cells (including cultured cell lines like HeLa) which may contain pathogens (eg HIV or HBV), nonhuman primate cells, recombinant organisms, and Lentivirus.

(BSL-3 & -4: Includes very dangerous airborne pathogen or those that are exotic with limited treatments. You CAN NOT image such samples in the Imaging Core).

Standard operating procedure for samples manipulated at BSL-2:

- 1. Prior to training, each user must provide an appropriate protocol for their agent. The protocol must include safe containment and cleanup procedures for the agent. (Contact the Biosafety Office at biosafety@umd.edu if you need assistance determining this information.)**
- 2. Admission to the laboratory is restricted to authorized personnel when work with BSL-2 samples is in progress.**
- 3. No eating or drinking is permitted inside the Imaging Incubator at any time.**
- 4. There is a biosafety cabinet (BSC) available in room B0112 for sample preparation. Samples must be prepared there, or in the investigator's lab using appropriate protocols and safety procedures.**
- 5. All BSL-2 agents must be clearly marked, declared, and approved in advance by the director of the facility.**
- 6. Samples must be carried with bare hands (no gloves) to the Imaging Incubator room in a closed, decontaminated, secondary container with absorbent materials in the bottom of the container.**
- 7. Each user must supply their own personal protective equipment, including, but not limited to: lab coat, safety glasses, and gloves.**
- 8. All imaging materials (including microscope slides and culture dishes) must be properly sealed to minimize the risk of spills. The outside of all materials must be wiped with an appropriate disinfectant that is effective against the agent being used.**
- 9. Use appropriate personal protective equipment (including lab coat, safety glasses, and gloves) when moving the dish onto the stage. Remove and discard gloves and wash hands before touching the microscope or computer.**
- 10. After imaging, the samples must be removed from the microscope. The microscope stage must be wiped down with a tissue soaked in 70% ethanol, 1:10 dilution of household bleach (followed by 70% isopropanol) or an appropriate disinfectant that is effective against the agent being used.**
- 11. Any spills must be cleaned immediately with 1:10 dilution of household bleach, or an appropriate disinfectant that is effective against the agent. All spills must be recorded in the accident log book and reported to the director of the facility (Amy Beaven).**
- 12. All liquid and solid waste must be placed in the available burn boxes or removed (transported in secondary containment as indicated above) from the Imaging Incubator and taken back to the host lab for proper disposal.**
- 13. All PPE must be removed prior to leaving the laboratory.**
- 14. Hands must be washed after handling biohazardous materials and before leaving the laboratory.**
- 15. Observe the following laser safety guidelines while imaging: never look into the laser beam or insert anything reflective into the beam path.**

Adherence to University guidelines must also be followed. All personnel who work in the laboratory must receive adequate instruction from their faculty supervisor prior to beginning work. Some training is required annually.