

UMD Imaging Core Standard Operating Procedures

1. Faculty, staff and students who wish to use the microscope should contact the facility director, Amy Beaven (phone: 301-405-7238, email:abeaven@umd.edu) to schedule a training session (typically 2 – 3 hours). Each individual user of the 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 main lab area, 0107, operates as a BSL-1 facility. Rooms 0107H, 0107F, 0107E, 0107K, 0107L of the Microbiology Building can be increased to Biosafety Level 2 (BSL-2) level laboratories on a temporary basis. Safety for all users and cCore 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 microscopes and computer workstations is performed online using Google Calendar (www.google.com/calendar).
5. Scheduling procedures for the Leica SP5 X/DeltaVision/Zeiss LSM710/AxioObserver/Nikon Eclipse:
 - 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. 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. 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.
7. 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.
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. The director reserves the right to bill for unused time at the regular rate.
11. 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.
12. 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 director.
13. 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.
14. No food or drink is permitted in the microscope room.
15. Access to the Imaging Core, is controlled with a card lock that grants access by reading the barcode of a UMD identification card. The lock 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.
16. The microscope computer may be used for temporary data storage only. Each individual user is responsible for his or her own data. No files should be left on the computer any longer than necessary for data acquisition or analysis.
17. Users are expected to pay the current Imaging Core rate for the use of the confocal microscope.
18. 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.
19. Appeals to this policy are to be submitted in writing to the faculty supervisor of the facility (Dr. Delwiche, email: delwiche@umd.edu).

BSL-2 Protocol for Safe Use of Imaging Core

The main lab area, 0107, operates as a BSL-1 facility. Rooms 0107H, 0107F, 0107E, 0107K, 0107L of the Microbiology Building can be increased to Biosafety Level 2 (BSL-2) level laboratories on a temporary basis. 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 to 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.

Imaging Core guidelines: Protocol for Safe Imaging of BSL-2 Live Samples

1. Prior to training, each user must provide an appropriate protocol and IBC approval letter for their BSL-2 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. The main laboratory space of 0107 is BSL-1. The following rooms can be increased to BSL-2 on a temporary basis: 0107H (Leica SP5 X), 0107F (DeltaVision), 0107E (Zeiss LSM 710), 0107K (Zeiss fluorescence microscope), and the CO2 incubator in 0107L.
3. All BSL-2 agents must be clearly marked, declared, and approved in advance by the director of the facility (Amy Beaven). Admission to the BSL-2 areas is restricted to authorized personnel when work with BSL-2 samples is in progress. The provided sign on each door must indicate the current biosafety level of the room at all times.
4. There is no biosafety cabinet (BSC) available in the Imaging Core for sample preparation. BSL-2 samples must be prepared in the investigator's lab using appropriate protocols and safety procedures.
5. BSL-2 samples must be carried with bare hands (no gloves) to the Imaging Core room (and, if applicable, between the CO2 incubator room and the microscope room) in a closed, decontaminated, secondary container with absorbent materials in the bottom of the container. A BioTransport container is available for rent from the Imaging Core if needed.
6. 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.
7. When storing BSL-2 samples in the CO2 incubator, mark the incubator with the provided biohazard sticker.
8. Each user must supply their own personal protective equipment, including, but not limited to: lab coat, safety glasses, and gloves.
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. Do not transport any cloth/upholstered chairs into rooms 0107H, 0107F, 0107E, 0107K when working with BSL-2 samples. Use only the self-skinned urethane chairs that have been provided.
11. After imaging BSL-2 samples, the microscope stage must be wiped down with a tissue soaked in 70% ethanol or an appropriate disinfectant that is effective against the agent being used.
12. Notify the Director immediately of any BSL-2 spills. Any BSL-2 spills must be cleaned immediately with 1:10 dilution of household bleach, or an appropriate disinfectant that is effective against the agent. If the agent was spilled on the microscope itself, contact the Director of the facility before attempting to clean the microscope. All spills must be recorded in the accident log book and reported to the director of the facility (Amy Beaven).
13. All PPE must be removed prior to leaving the laboratory.
14. Hands must be disinfected with appropriate hand sanitizer (e.g., Purell) before leaving the microscope room and washed with soap and water at the sink in the main lab space, 0107.
15. All liquid and solid waste (from BSL-1 or BSL-2) must be removed (transported in secondary containment as indicated above) from the Imaging Core and taken back to the host lab for proper disposal. Autoclave bags are available for purchase from the Imaging Core if needed.
16. The director of the facility will wipe down counters on an as-needed basis with Coverage Spray TB Plus disinfectant.
17. No eating or drinking is permitted inside the Imaging Core at any time.
18. Observe the following laser safety guidelines while imaging: never look into the laser beam or insert anything reflective into the beam path.