LMIF User Policy

James Madison University
Light Microscopy
and Imaging

This policy governs the usage of the James Madison University (JMU) Biology Department's Light Microscopy and Imaging Facility (LMIF) and outlines basic procedures that are designed to protect the equipment, coordinate the needs of multiple users, and enable all users to perform their research efficiently and effectively. Violation of any of these policies may result in suspension of user privileges.

Training

Microscopes are not like other pieces of lab instrumentation: they do not make measurements for you like a pH meter, spectrophotometer, or DNA sequencer. Microscopes are sophisticated instruments that *enable scientists* to examine specimens and acquire data in the form of images. The scientist is an essential element of the process. Well-trained microscopists can acquire highly informative data and beautiful images; poorly-trained microscope "users" might generate good data and images, but might also generate poor, misleading, or even entirely false images. The purpose of our training is to help you become a good microscopist, not a "user" who just knows how to push the right buttons.

You must undergo training by the LMIF Director for each instrument that you wish to use. Until you complete your training, you will only be able to use the instruments under the supervision of the Director or a trained user. Ideally, you should start your training less *no more than one month before you plan to start your experimental imaging*. If you schedule too far in advance, you will forget everything between your trainings and your first use.

Training will generally involve the following steps. These steps will be modified if you need training/access to use non-microscopy equipment or if you are already fully trained and need additional training on a new technique or second instrument.

1. Email the LMIF Director to request training. Your email should include a description of your project (see the Training website for more details).
2. You will communicate by email with the director to set-up your first training session.
3. Before your first training:
    a. Read the LMIF User Policy (you're already doing it!)
    b. Complete a User Registration Form and bring it to your initial training
    c. Non-JMU users must also complete a liability release form
    d. You will be given a few short background readings to complete.
4. During the first training session, you will discuss your project with the Director, learn how to use the Microscope Facility (scheduling, rules, etc.), and be trained on the specific instrument(s) that you have requested.
5. Before your second training, you will complete a short reading and a worksheet about data management.
6. During your second training, we will discuss the data management material, review how to use the instrument, and learn additional procedures (if applicable). Ordinarily, two training sessions are sufficient; however, some users may require more training, depending on prior experience and the complexity of the instrument.

7. Schedule your first independent use of the microscope with the Director. You will meet and will begin by demonstrating how to use the microscope (a "driver's test"). Following a successful demonstration, you will proceed with your imaging session.
8. Upon successfully using the microscope by yourself, the Director will give you access to the Google Calendar booking system and add your name to an approved JACard access list. Your research mentor may then request JACard access via the Biology Department's online form.

Booking Time on the Equipment

JMU users will be granted access to the facility via their JACard; after-hours building access must be arranged by your faculty research mentor through the Biology Department. Non-JMU users ordinarily may only use the facility Monday-Friday, 8:00 a.m. – 5:00 p.m., but may discuss other access options with the Director.

Use the Google Calendar booking system to reserve time on the equipment. This is NOT optional. Even if the schedule is completely empty, you must sign-up. Having an accurate schedule of who has and will use the equipment helps all of us by avoiding double-bookings, helping track and troubleshoot problems, and showing the value of the LMIF and helping to justify its improvement and expansion.

Please be considerate of other people's needs. So that everyone has a chance to use the equipment when they need it, **you may not book more than three sessions in advance**. In periods of high instrument demand, the Director may prioritize user access in the following order: Biology Department > College of Science and Math > all other JMU users > non-JMU users.

If you cannot use your booking, are running more than 30 min. late, or finish more than 30 min. early **please change your booking** so that other users can see that the microscope is free. **If you do not show up within an hour of your start time, your session will be cancelled** so other users can book it.

Using the Equipment

If someone is signed-up for the microscope before you, ask the person before they are finished to leave the system running for you. This saves everyone time and also minimizes wear on the system. HOWEVER, do NOT leave the system running for someone after you if you haven't confirmed that they are indeed going to use it.

You may only use equipment for which you have been *fully trained* by the Director.

You must fill-in the paper log-sheet next to the microscope. This record, together with the booking calendar, helps us track and trouble-shoot problems.

Treat the instruments with utmost care. Objective lenses in particular are very delicate and expensive. On inverted microscopes, such as the Nikons, they are also prone to damage by immersion oil. Do not use excessive quantities of oil; it can run down the edges and enter the lens. If this happens, the objective will be unusable for several weeks while it is sent away for a very expensive cleaning.

Report any problems or accidents to the Director immediately.

Be considerate of the next user. Throw trash in the trash can, wipe up oil or other spills and leave the area as you would expect to find it. Clean oil off lenses using lens cleaner and lens paper. When you finish, check the booking calendar.

Any items left on the microscope tables will be discarded without warning. Contact the Director if you need dedicated storage space.

Saving and Storing Data

At the end of your session, you must **transfer all of your files** and remove them from the computer. **Files left on the Facility computers may be deleted without warning.** Files may be transferred via the Biology Department's internal servers, online services (Google Drive, OneDrive, DropBox, etc.), FTP link, or USB drive.

Safety and Liability

- **Safety:** All users are required to complete the Biology Department's Lab Safety Form.
- **IACUC and Biosafety:** Users must notify the Director if their experiments involve any animals regulated by IACUC or Biosafety Level 2 organisms and must provide appropriate documentation.
- **Liability:** Non-JMU users are required to sign a liability release document.

Attribution

Users must acknowledge the "JMU Biology Department's Light Microscopy and Imaging Facility" in all publications and presentations that include data acquired in the facility.