

## Multiphoton Research Core Facility Policies

The Multiphoton research core facility contains expensive and delicate equipment that is shared between many labs on campus. The following policies are intended to ensure that the facility operates as smoothly as possible to the benefit of all users. The cost of maintaining the facility is also shared between users through user fees. By observing these policies you will be helping to ensure the quality of every user's imaging and keep the system maintenance costs as low as possible. It is the responsibility of each user to become familiar with these policies, and to ask facility staff in case of uncertainty. Suggestions for policy improvements may be submitted to Yurong Gao (yurong\_gao@urmc.rochester.edu) for consideration.

Failure to adhere to these policies will result in additional charges to your account as well as loss of access to the facility. Access will be restored after meeting with Yurong Gao. Persistent offenders (more than three violations in a calendar year) will be required to undergo training and additional requirements as determined by the core staff.

### Training and Certification:

All users must complete required trainings in order to be certified by facility staff to use the system. Training of new users by previous users is NOT permitted.

1. **Laser Safety Training (1/2 hour):** the system uses class IV lasers, and users must document that they have taken the UofR online laser safety training course (Blackboard/Mypath EHS Laser Safety Training). This training is required in order to become certified to access the lab.
2. **Two-Photon Microscopy Basics Online Lecture (1/2 hour):** a lecture about two-photon microscopy principles taught by Kurt Thorn from UCSF is available online (<https://www.ibiology.org/talks/two-photon-microscopy/>). This training is required before taking the Olympus FVMPE-RS Basics Hands-on Tutorial training.
3. **Olympus FVMPE-RS Basics Hands-on Tutorial (3-4 hours):** a hands-on introductory training for the Olympus FVMPE-RS system is provided at no charge. The introductory session covers the microscope and associated hardware, plus orientation on the Fluoview software. Test slides are supplied for training sessions. Users are also welcome to bring in their own samples. At the end of the training, users must be able to acquire time-series and z-stack images on their own using the provided test slide. This training is required in order to gain *Novice access* to the microscope. Users are required to re-take this Basics Hands-on Tutorial if no imaging is conducted within two weeks after the training or if the user failed to operate the system with basic functions, and the equipment time and staff time will be charged.
4. **Olympus FVMPE-RS Advanced Hands-on Tutorial:** advanced function training for the Olympus FVMPE-RS system can be requested based on needs, which includes but not limited to tiling, sequence scanning, stimulations, etc. Users must be able to image independently using the basics functions covered in the basics hands-on tutorial before requesting this advanced hands-on tutorial session. Equipment time will be charged for this advanced training.

### **Scheduling Policies:**

1. Users must be trained and certified before they can book time on the system.
2. All usage must be booked through the online scheduling system (even if the booking is made at the last minute and the system appears to be otherwise unoccupied). Bookings may be made at the following website: <https://ppms.us/urmc/login/?pf=3>
3. Go to the website ([http://coredbserver3.urmc-sh.rochester.edu/fmi/webd/SRL\\_Forms](http://coredbserver3.urmc-sh.rochester.edu/fmi/webd/SRL_Forms)) to register or change an account if you are a new user or if you want to update your information.
4. The MP Core is open during normal business hour (9am to 5pm) from Monday through Friday. Users with *Novice access* can only book the system during normal business hour. *Autonomous access* (after-hour privilege) is granted by core staff to experienced investigators that have completed the Basics Hands-on training, and have accumulated more than 20 hours usage time within the previous 4 months.
5. Since the two-photon microscopes have two lasers, users must indicate in the scheduling entry which lasers they will use. For each booking, users must indicate whether they plan to do two-photon imaging and/or stimulating (SIM scanner), and the laser they plan to use for stimulation (405nm laser or MaiTai laser).
6. Booking on behalf of other individuals who are not themselves certified users is not permitted, and may lead to loss of user privileges.
7. Bookings should only be made for actual planned experiments, not on a contingency basis.
8. Users must book sufficient time to allow for data backup and cleaning of the work station within their scheduled time slot.
9. Time slots are booked in 30 min increments.
10. The person cancelling a slot (whether or not within 48 hrs) is responsible for (i) entering the cancellation in the scheduling system, and (ii) sending an email to the user group email list (MPCORE\_USERS@URMC.Rochester.edu), notifying other users that a slot is unexpectedly available. Similarly, if a session ends unexpectedly early, the user is expected to announce the availability.

### **Instrumentation Usage:**

1. There are 8 filter cubes for selection based on user's imaging needs. It is every user's responsibility to change the labels of the filter cube on the cover of the microscope respectively whenever there is a change of filter cube. Keep the filter cubes inside the microscope after each imaging session.
2. Do not change the current available filter cubes configuration without first discussing changes with the MP core staff.
3. Non-Olympus objective cannot be used on the system.
4. No other objectives can be on the system at the same time when the 25x objective is on the system.
5. Users cannot remove/change the objective by themselves. If a user needs a different objective other than the 25x objective the core provides, the user must contact core director to justify the needs. In the case when a different objective is needed, the director or other core personnel must be confirmed to be available to change the objective for the user before an imaging session.

August 16, 2018

6. The core provides system start and end protocols for users to refer to. Specific imaging function protocols will not be provided at the core. Users are welcome to copy and read the Olympus official system manual available at the core.
7. It is the user's responsibility to configure the equipment to imaging needs. The configuration for a specific experiment can be optimized and set up together with Core staff during training and saved as an "ObservationMethod" file for later use.
8. It is not permitted to wear gloves when changing filter cubes or using the computer.
9. Groups who use isoflurane for animal anesthesia should bring their own isoflurane with UCAR protocol number label on the isoflurane bottle. For safe handling of isoflurane, users are required to follow their own UCAR protocol as well as the *MPCore's Guidance of Using Isoflurane* (if using the core's vaporizer).
10. Follow all posted cleaning guidelines after imaging session, which include but are not limited to objective cleaning, stage cleaning, and work station cleaning. Guidelines are posted near the instrument and also available online.
11. At the end of the imaging session, check PPMS calendar to see if there are users afterwards. If there is another user within 2 hours, leave the Software, Hardware, and Laser ON. If there is no user within next 2 hours, follow all posted system shutting down guideline. Guidelines are posted near the instrument and also available online.
12. If the instrument maintenance policies are not followed, there will be a \$43 fee charged. Policies include but are not limited to cleaning protocols, instrument shutting down, etc.

#### **Data Handling:**

1. Data and observation method must be saved to proper folder in D: drive for temporary storage during imaging. No files can be saved to C: drive or desktop.
2. At the end of imaging session, users must transfer data to the data server (smdnas:\URMC-MP). No other data transfer methods are allowed. USB plugin is highly prohibited on the imaging computer.
3. The image files in Data folder will be deleted off the local computer at the end of the month. It is user's responsibility to properly save and transfer the data. The "ObservationMethod" files will be permanently saved on the computer for easy access.

#### **Billing:**

1. Time charged will be based on the time reserved OR the reserved time plus time used past the reservation.
2. Users must log in with the same ID provided when come to use the instrument.
3. Users are expected to properly budget time (at least 10 minutes) before the end of their session for carefully cleaning the objectives, cleaning in vivo equipment if applicable, and for returning the scope to its default condition.
4. Cancellations must be made at least 48 hours in advance of the scheduled start time, to avoid being charged for that time. Cancellations with less than 48 hours notice will be charged, unless the slot is entirely filled by another user. In addition to being charged, users who repeatedly cancel their scheduled slots at short notice may have their access privileges suspended.
5. First hands-on tutorial is free. After the training, the first two times usage will be assisted by core staff without extra charge. If assistance for setting up imaging is needed after first two

August 16, 2018

sessions, extra \$32 surcharge will be charged. Additional trainings will be charged at the equipment original rate plus \$32 surcharge.

6. If an imaging session is failed due to core instrument malfunction, users must notify core staff as soon as possible. The charge for the session will be waived.
7. At the end of each month, the amount of time reserved versus the amount of time used for each reservation is checked. The greater of the two is billed for. The total amount of time used each month is then listed by user and sent to the PI and department for bills the first business day of the next month.
8. The investigator has 5 business days to check on the bill. All inquiries must be directed to (SRL\_PPMS\_Inquiries@URMC.Rochester.edu).
9. The bill will then be finalized after 5 business days and the amount of money will be deducted from the PI's account. No change can be made after a bill is finalized.

<b>Instrument</b>	<b>Rate</b>	<b>Note</b>
<b>Olympus FVMPE-RS system training (first time)</b>	\$0/hour	System first hands-on tutorial training
<b>Olympus FVMPE-RS system training (additional)</b>	\$92/hour	System additional trainings after the first training
<b>Olympus FVMPE-RS system (unassisted)</b>	\$60/hour	Without assistance or first 2 times usage
<b>Olympus FVMPE-RS system (assisted)</b>	\$92/hour	With full assistance for setting up after first 2 times
<b>Image analysis</b>	\$20/hour	Free of charge August 2018-January 2019