

# WVU SHARED RESEARCH FACILITIES USER AGREEMENT FOR THE WVU USERS OF THE ELECTRON MICROSCOPY FACILITY

## MISSION

The WVU Shared Research Facilities (SRFs) are campus-wide resources that provide a research and learning environment for students, postdoctoral researchers and faculty. There are four separate facilities within the WVU SRF: Cleanroom, Materials Fabrication and Characterization Facility, Electron Microscopy Facility (EMF), and Bio-Nano Research Facility.

The Shared Research Facilities are faced with the challenge of balancing a learning environment with the needs of researchers to quickly and reliably gather data for publications and proposals. This user agreement sets out the expectations for Electron Microscopy Facility (EMF) usage and must be signed by the user, his or her advisor/supervisor and the department chair prior to any use of the facility.

## COST

**Effective July 1<sup>st</sup>, 2011, WVU users are charged an hourly rate of \$50 for each unassisted hour of use and \$65 for each assisted hour of use of the Transmission Electron Microscope (TEM). WVU users are charged an hourly rate of \$6 for each unassisted hour of use and \$21 for each assisted hour of use of the Scanning Electron Microscope (SEM).** These fees offset the costs of maintaining, servicing and training people on the instrument, and can be found at <http://sharedresearchfacilities.wvu.edu> under rates. Fees are reviewed annually and revised to reflect usage. Fees must be paid on a monthly basis.

A user whose fees from the previous month have not been paid will not be allowed access to the Electron Microscopy Facility equipment until payment is made.

The Electron Microscopy Facility provides standard tweezers, disposable gloves, carbon tape, copper tape, silver paste, SEM stubs, Kimwipes and knitted wipes. Each user is responsible for providing all other supplies, including (but not limited to) samples, TEM grids, and grid holders.

## TRAINING AND OPERATION

Electron microscopes are very sensitive tools, with initial costs that easily can be over a million dollars and repair costs that can run into the tens of thousands of dollars. Users will not be allowed to access any of the electron microscopes unattended until they have passed a 'driving test' administered by the Shared Facility Electron Microscopy Manager.

Introductory training covers the basics of how to properly use the transmission and the scanning electron microscopes and is free. This initial training includes the sample mounting and insertion, beam alignment, imaging, data acquisition and sample removal. After initial training, users can start using the instrument during working hours (8 AM – 5 PM) with the assistance of the electron microscopy manager.

Users will not be approved for unsupervised operation until they have passed a short written and/or practical 'driving test' to ensure that they understand how to use each feature of the instrument properly. Until mastery is demonstrated, the user must schedule electron microscope time with an approved staff member. This time can

(and should) be spent working with the user's sample so that he or she can learn and practice specific techniques that will provide the most accurate information possible for that particular type of sample.

Once approved for unsupervised operation, assistance will still be available by request. Users will be able to work at the instruments unassisted during work hours. All work done after hours or during weekends must be assisted by an electron microscope staff member.

Mandatory training on cleanroom protocols and chemical safety is required for all users before accessing the scanning electron microscope (SEM) in the cleanroom. All protocols are determined by Cleanroom staff and can be found at <http://sharedresearchfacilities.wvu.edu> under the training menu. Users may not attend training on the SEM until cleanroom training has been completed.

If a user has not used an instrument in the last 15 weeks, his/her access to the instrument will be terminated. Prior to regaining access to the instrument, the user must be retrained and operate the system while being supervised by an electron microscope staff.

## SAFETY POLICY

All users must attend general laboratory safety and chemical safety trainings prior to use of the Electron Microscopy Facility. A user can be trained on equipment after these initial safety trainings are completed. A user must request permission to bring a chemical or reagent not provided by the EMF into the Electron Microscopy Facility by submitting a Chemical Tracking Form. A MSDS sheet must be submitted, and proper chemical handling and disposal discussed with the Shared Research EMF Lead Technician before permission will be granted for outside chemical use.

Users are expected to follow policies and procedures defined in the Chemical Hygiene Plan for each lab, and safety protocols established during the trainings. The Chemical Hygiene Plan for the EMF is posted in each lab in a clearly labeled binder. Users must work together to maintain a clean and safe lab environment. Any user not adhering to policy, procedures, protocols or safety requirements will be suspended from all Shared Research Facilities usage immediately.

Users are expected to obey all procedural and safety rules, including verbal instructions from Facility staff members. Violations of these rules are not acceptable. The determination of whether there has been a violation of sufficient severity to warrant action will be made by the Facility Lead Technician in consultation with the user's advisor/supervisor. These infractions include:

- Failure to properly fill out log books and/or notify Electron Microscopy Facility staff when there are problems with equipment
- Failure to follow the instructions of Shared Research Electron Microscopy Facility staff
- Improper handling of chemicals, including
  - Not wearing gloves when handling appropriate samples and chemicals
  - Leaving chemical processes unattended
  - Improperly disposing of chemicals or not using waste jars when appropriate
- Not wearing face shield, gloves or apron when handling liquid nitrogen
- Not properly disposing of pipettes, broken glass or sharps
- Improper handling of gas cylinders
- Opening high voltage panels
- Eating or drinking in the lab
- Failure to log in/out of the FOM system and/or logging in for someone else

In case of a violation:

- A first violation of a safety rule will result in a warning to the user, copied to his or her advisor/supervisor.
- Second Violation
  - A second violation of a safety rule will result in the user being excluded from all Shared Research Facilities for a period of one to three weeks, depending on the severity of the violation, and being denied access to the Shared Research Facilities until the appropriate safety training (determined by the Facility Lead Technician) has been completed.
- Third Violation
  - A third safety violation will result in the user being excluded from all Shared Research Facilities for a period of three weeks or more. A consultation with the user's advisor/supervisor will determine the conditions under which the user may return to the Shared Research Facilities, if at all.

## EQUIPMENT RESERVATION AND BILLING

Users must reserve time in advance for each piece of equipment in the EMF using the FOM software, which can be accessed through the Shared Research Facilities website <http://sharedresearchfacilities.wvu.edu>. **Logging in and out of the FOM is required for each operating session.** The user's scheduled session can be terminated earlier by logging out on FOM software. If a user cannot make a scheduled appointment, he or she must cancel his or her time on the FOM a minimum of 24 h in advance. If a user cannot cancel the appointment with a minimum of 24h in advance, or if the user cannot cancel the appointment at all, he or she must contact the Shared Facilities staff as soon as possible.

- All reservations require a 24 h advance cancellation to avoid penalties described in the reservations policy section of this agreement.
- If you do not show up for your reserved time within fifteen minutes of the scheduled session, your session will be cancelled. You will not be allowed to remove any new user from the equipment once your session was cancelled.
- You may work past your scheduled time **ONLY** if no one else has reserved that time. If another user is scheduled, he or she has priority.
- If the desired equipment in the EMF is not scheduled and you would like to use it, you must reserve the time via FOM before you start your session.

## RESERVATIONS POLICY

Users are expected to honor equipment reservations. If you know you will not be able to use time you have previously booked, you must cancel it no later than 24 hours before the start time to ensure that other users have access to the instrument. If you cannot cancel the time yourself, you must call or email the facility Lead Technician and ask him or her to cancel the time. Whether the violation is severe enough to result in a penalty will be determined by the facility manager in consultation with the user's advisor.

- A first violation will result in a warning to the user, copied to his or her advisor/supervisor.
- Second Violation:
  - A second violation will result in the user being excluded from all Shared Research Facilities for one week.
- Third Violation:
  - A third violation will result in the user being excluded from the Shared Research Facilities for three weeks.

Subsequent violations will be dealt with by the Lead Technician in consultation with the user's advisor/supervisor. Penalties may include being disallowed from the Shared Research Facilities for longer periods of time, limitations on ability to reserve equipment, being prohibited from using the equipment until he or she has completed re-training, and/or other actions as deemed appropriate.

## EQUIPMENT MAINTENANCE AND REPAIR

Users must work together to ensure that the electron microscopes and other facility equipment stays in good condition. Users must not use the electron microscope or any other equipment if they suspect it is not operating correctly. **If there is *any* concern that the equipment is not operating properly or if the equipment is damaged during use, IMMEDIATELY contact the Electron Microscopy Lead Technician AND record the details in the logbook that is located right next to the equipment. Extra copies of the Tool Service Request form are kept inside the logbook.** Uninformed attempts to fix the electron microscope or any other instrument of the facility may produce further damage.

The user's advisor/supervisor is responsible for repair of the instrument if it is damaged under any of the following circumstances:

- The user attempts to operate the machine unsupervised before being qualified by the EMF staff.
- The user fails to report damages or abnormal machine operation to the EMF staff.
- The user operates the equipment or continues to operate the instrument when it is demonstrating abnormal conditions.
- The user fails to follow safety procedures.
- The user fails to operate the instrument using the established standard operating protocols kept in the immediate vicinity of each instrument.
- The user leaves the machine active and unattended.
- The user does not leave the machine in appropriate idle state when finished.
- The user shows willful disregard for instruction.
- The user purposefully or knowingly damages the equipment.

The cost of the repair will be determined by the Electron Microscopy Lead Technician and communicated to the user and her or his advisor/supervisor.

A user who damages the equipment under any of the above conditions may be subject to retraining, supervised operation, reevaluation of equipment mastery, temporary or permanent suspension of access to the Electron Microscopy Facility. Staff time will be charged for retraining sessions.

## REPORTING

Any publications or presentations of work done using Shared Research Facilities must contain an acknowledgment of Shared Research Facilities. This is critical to our future funding. The suggested wording is:

**"We acknowledge use of the WVU Shared Research Facilities."**

By using Shared Research Facilities, you agree to include an acknowledgment in all publications and presentations that use data acquired in the SRF. You also agree to provide the Lead Technician with a copy of any paper or abstract that acknowledges SRF use for our reporting to our cost-share partners and funding agencies.

**CERTIFICATION**

I have read and understand the requirements and responsibilities for using the Electron Microscopy Facility and agree to abide by the guidelines established by the EMF Manager and the Shared Research Facilities.

\_\_\_\_\_  
User Signature Date

\_\_\_\_\_  
Advisor/Supervisor Signature Date

\_\_\_\_\_  
Department Chair Signature Date

**TRAINING [TO BE COMPLETED BY SRF]**

User Agreement received by: \_\_\_\_\_  
Date

General Lab Safety Training by: \_\_\_\_\_  
Date

Chemical Safety Training by: \_\_\_\_\_  
Date

Instrument \ Date	Initial Training	Unsupervised Use
TEM		
SEM		

Please return signed form to: Dr. Marcela Redigolo, B60 Engineering Sciences Building, WVU.