

Microscopic Imaging Core Facility User Guidelines

Microscopy facility use is increasing each year with the availability of new instruments and technologies. While this demonstrates the success of our core facility as a valuable resource for a great diversity of research efforts, it also creates challenges for maintaining the imaging equipment in high working order and ensuring the availability of requisite supplies. For this reason, we ask that users take the time to review these policies and procedures and to adhere to the guidelines put forth with regard to training and handling of facility equipment and supplies.

Novel user training

It is the responsibility of the facility director(s) to circumvent incidents of improper microscope operation and to promote clean, highly efficient work stations. To this end, all users should receive training by a facility director before initiating equipment operation by themselves. Successful training will help prevent accidental damage to delicate imaging equipment and will also ensure that users get the highest possible quality images and results. A facility director is always available and happy to assist when users are unfamiliar or uncertain of how to use the microscopes and cameras to get high quality images.

For the facility as a whole, proper user training has the following benefits:

- 1) Equipment will be used and cared for in the proper way, maximizing its quality and longevity
- 2) The director will be familiar with all facility users to promote good security (controlled access) and to additionally promote inter-researcher collaborative project growth.
- 3) Users will know and be comfortable coming to the director for assistance
- 4) Users will be comfortable and familiar with microscopes and the process of image acquisition to generate high quality data
- 5) All users will rapidly be aware of changes, problems or abnormal circumstances related to equipment use – including upgrades and current equipment idiosyncrasies
- 6) The director can efficiently maintain a database of facility usage and document research publications as well as undergraduate\graduate student research projects associated with facility use
- 7) Users will maximize their understanding of microscopic techniques for these and future research endeavors and will be best positioned to select ideal imaging methodologies for particular research goals

Upon completion of training, new users will be given card access into the facility. Typical training sessions for a light microscope or the SEM will take approximately one hour, and confocal training approximately 2 hours. The facility director will typically shadow new users for their first few uses (see note below) until they have confidence in their skills. If a person is already a user of the facility and wants to begin using a new piece of equipment, then that person should initiate the appropriate training with the director. While many researchers are willing and capable of properly training others in the use of facility equipment, direct involvement and supervision of the director in the training process will better enable smooth operations of the microscopy facility.

****Novice user training needs to be completed within standard facility hours when facility managers can be present to assist as needed. This typically includes at least 3-4 imaging sessions after initial training for users to be competent troubleshooting basic problems with the advanced imaging systems.**

Use of facility supplies

Increasing utilization of the microscopy facility is also associated with increased demand for imaging supplies and consumables. Of particular note is consumable use (sputter coating foil) and the depletion of sample preparation materials for the SEM (sample pedestals/stubs and carbon tape). The microscopy facility will maintain supplies needed to perform SEM experiments but the supplies in the facility should not be the exclusive source of materials for individual lab research efforts. Instead, please view the supplies in the facility in the following way:

- 1) As available for users who are in the preliminary stages of an experiment or procedure
- 2) As available for those who are trying to test out preliminary or exploratory procedures to determine experimental feasibility before purchasing requisite supplies
- 3) As available if a lab is temporarily depleted of particular supplies/funding
- 4) Not to replace the need of a research lab to purchase sample preparation supplies for on-going projects

Removing inactive names from the microscopy facility card access list

To help ensure the security of research equipment and computer networks, it is important that only those persons with research or education related needs have access to the facility. To accomplish this, the list of individuals with card access must be actively updated. This can only be successfully done with the help of the faculty. When a student, technician, or post-doc is no longer working with you or no longer needs to use facility equipment, please notify the Director so that his/her name can be removed from the list of authorized users.

Good core facility behavior for a happy research environment

Please observe the following guidelines when using facility resources:

1. Utilize digital reservations for major equipment use
2. Turn off power to microscopes and light power sources (final user of the day)
3. Replace the dust cover when finished to help keep the optics dust-free
4. Put away all slides and materials when finished
5. Do not leave wet, oily, or sticky areas on prep areas or microscope stages
6. Clean the objectives, slides, and stage when using oil immersion (**always ask for help if unsure of proper methods**)
7. Report any problems or unusual equipment behavior to the facility director
8. Be punctual and do not exceed scheduled reservation times (when others are waiting)
9. Cancel appointments and inform the director with as much lead time as possible
10. Notify the director when facility supplies are running low or missing
11. Turn off the lights when you leave the facility (final user)
12. Always sign the physical log book

Publishing

- 1) Please cite our core as: "Wake Forest Biology Microscopic Core Imaging Facility"
- 2) At the beginning of the fiscal year, let the director(s) know which publication utilized the microscopy facility