Guidelines for the Core Facility Bioimaging at the BMC

(Version 2026)

The Core Facility Bioimaging (cf bim) at the Biomedical Center (BMC) of the Ludwig-Maximilians-Universität München provides access to and advice on high-end light microscopy equipment and to selected image processing software as well as advice on sample preparation. Usage of the hardware is subject to usage fees.

The three main rooms with together over 100 m^2 are located on the second floor of the east wing of the BMC, room numbers N.C.02.042, 043 and 044 (north side of the building). Some microscopes are located in additional rooms, see website for details.

For current contact information please see the webpage at:
https://www.bioimaging.bmc.med.uni-muenchen.de/contact/index.html

As of April 2016 the DFG confirmed that the cf bim with original guidelines comply with the "DFG Requirements for Terms of Use at Core Facilities" (now included in form 55.04) by listing the cfbim in the DFG RIsources data base (http://risources.dfg.de/detail/RI_00411_de.html)

It is therefore possible to apply for usage fees to be spent at the Core Facility in DFG grant applications according to the "Guidelines for Instrumentation-Related Usage Costs and Core Facilities" (http://www.dfg.de/formulare/55_04/index.jsp, Introduction and chapter on Light Microscopy).

§1 Access

The Core Facility provides bioimaging opportunities to scientific staff of the BMC, the University including Klinikum, and from other institutions.

To obtain access to any microscope, the following steps are required:

1. For new imaging projects, a consultation meeting of user, group leader and cf bim staff is recommended to determine the optimally suited approach concerning sample preparation by the user and microscope hardware to be used. All such discussions will be treated as confidential by facility staff.
2. The user and the respective group leader sign agreements in which they both accept the guidelines of the facility (see appendices).
3. The user signs up for the online booking system PPMS (link on our website). This can be done in parallel to the previous step.
4. Access for non-BMC projects may be prioritized or denied on reasons of capacity of the facility or scientific merit of the project. We might ask for a 1 page project summary for external projects.
5. For hands-on training see below, introduction to instruments.
6. After successful training, the user can book the respective instrument via the online booking system (PPMS). Using Core Facility equipment is subject to usage fees. Booking and not using it (no-show) is also subject to fees. See below for details. New users can book the machines during office hours of the facility staff so that we are available if help is required.
7. Experienced users who have a transponder for the BMC can have their transponder activated for the respective facility room and will have access 24/7.

§2 Responsibilities of users and group leaders

Responsibilities of the user and the respective group leader are described in these guidelines, including the Appendices. Failure to follow these rules may result in temporary or permanent loss of usage privileges for the user or the respective group, at the discretion of the facility staff.

The user must not share his login credentials with others and will not let others who do not have valid booking rights for that microscope operate the system or change settings, no matter how experienced those others may be with other systems! This prohibition also applies to members from the same group. Violation of this guideline will lead to temporary or permanent loss of usage privileges.

Users who operate microscopes for which they have no training or no booking rights may be banned temporarily or permanently from the facility.

The user and the respective group leader are responsible for data storage and the scientific integrity of the data. The facility recommends to store all original data in the proprietary file format of the microscope manufacturer, since these file formats contain information such as exposure times, selected filters, etc. It is, however, the user's responsibility to confirm which information is stored automatically and which must be noted in the lab journal. Data transfer from microscope computers is allowed only over the network. The user needs to have access to a storage space that can be reached via network (e.g. LRZ Sync and share). No USB devices may be attached to the microscope computers.

No backups are performed on data partitions of microscope computers. The user is responsible for transferring their data to other systems, for securing that the transfer was successful, for ensuring that data were not corrupted during transfer, and for backups.

Long-term storage of data for ten years after publication is generally recommended or requested by grant agencies and publishers. The BioImage Archive is a free, publicly available online resource from EMBL for all image data associated with a peer-reviewed publication up to single file sizes of 2 Terabyte (June 2026). It allows reuse of data by others and thus fulfills the FAIR data principles (findable, accessible, interoperable, reusable).

§3 Equipment

The current list of available equipment can be found on the facility website at https://www.bioimaging.bmc.med.uni-muenchen.de under "Instrumentation". The website also provides a link to the booking system.

§4 Usage fees

Instrument usage fees paid by academic users are required for running costs of the facility. They do not cover costs for instrument acquisition. Usage fees may be different for different user groups. The current table of fees is on our website under "Instrumentation", www.bioimaging.bmc.med.lmu.de/instrumentation/fees/

See introduction concerning the possibility to apply for usage fees with DFG grants. Usage fees can also be applied for in BMBF or EU grants.

§5 Introduction to instruments

Usage of any microscope requires training by cf bim staff. Untrained persons are not allowed to operate facility equipment in any way. This also applies if a trained user is present at the same time.

Training focusses on the practical aspects of handling the system. For time reasons it cannot include the theory behind the various approaches. We strongly recommend that each user should strive to understand some basic theory of the applied microscopic technique, e.g. how a confocal microscope is working. “Learning & Teaching” on our web site lists books and web sites for this purpose. The facility staff will be happy to assist with the selection. Some basic theoretical and practical information is provided by our online video tutorials. The user will watch the respective video prior to the first training session.

Facility staff and the user will schedule a training session on the respective instrument together. Practical training may consist of one or multiple sessions. It may take 30 min on very simple machines, 2x 3 hours for confocal microscopy and more for high-end approaches, depending on the complexity of the project and previous knowledge. Duration and successful completion is determined by the cf bim staff.

Applicable fees for trainings are detailed on this webpage
https://www.bioimaging.bmc.med.uni-muenchen.de/instrumentation/fees/

§6 Booking, logging, and billing of usage fees

Online booking of instruments is usually possible two weeks in advance. If earlier reservation is required, e.g. for student courses or long-term experimental planning, please contact the cf bim staff. The facility staff may prioritize certain projects, such as images for manuscripts under revision, if necessary.

For heavily booked equipment, the facility staff can set limitations to bookings per week or during certain day times for individual users or users from a group or from an institute. Even if no such limitations are in place, cf bim staff may cancel excessive bookings (e.g. several days in a row). If intense booking is experimentally required, please contact the facility staff in advance. On heavily booked equipment, the facility may restrict booking to certain time slots (e.g 9-12, 12-15, 15-18) to optimize usage time.

Computers at the facility mostly have an automated logging and monitoring of usage times. These data will be used to calculate usage fees, in addition to booked times. Booked times are charged also if a session began late or ended early.

Booking is highly recommended to reserve the respective instrument, but not required. A microscope that is not booked by others may be used, e.g. to extend a session. However, the user must log in to Windows, so that usage can be tracked and billed. Exception: for the MACSima booking is mandatory!

A user may use a microscope or a computer until the next user is actually showing up at the facility or is calling in to announce her/his immediate arrival (see website for phone numbers of the facility rooms). The usual usage fees apply.

§7 Cancelation of bookings

Booked times or times canceled less than 24h before the reservation will be charged fully even when the machine was not used by the user (no-show), except if another user was using the equipment.

For all cancelations, the user should alert other frequent users on the same machine to the freed time.

Frequent cancellations by a user or a group may result in revoking of user privileges.

If cancellation is a not-so-unlikely outcome of demanding experiments, e.g. with living samples, please discuss the situation with the facility staff to find a solution.

§8 Help with publishing microscope data

The facility staff is available to read, comment and help on the imaging part (including methods) of respective manuscripts, to ensure a faithful and reproducible description of the applied techniques.

We strongly recommend to take the following publication into account: Better reporting is better science: Community-defined minimal reporting requirements for light microscopy. J Cell Biol, 2026. doi: 10.1083/jcb.202601032.

Please see above for a link to the Bioimage Archive where image data can be made available to comply with FAIR principles.

§9 Acknowledgement of the Core Facility Bioimaging in publications

The cf bim will be evaluated by funding bodies. Thus, it is of high importance for the future of the facility that it is visible in the published record. By using the facility, users and their group leaders commit to explicitly acknowledge the Core Facility Bioimaging of the BMC in any publication that contains data recorded or processed on facility equipment and/or where significant advice of the facility staff was obtained. Such publications include bachelor, master and doctoral theses.

Example Text: “We acknowledge the Core Facility Bioimaging at the Biomedical Center, Ludwig-Maximilians-Universität München, for access to the microscope (specify) / training / expertise / assistance with data analysis.” (Use all that apply).

The user and/or group leader informs the facility staff of all such publications. Ideally, the Core Facility user enters the publication in the PPMS booking system and provides a digital copy of each publication to the facility staff for archiving.

§10 Co-authorship regulation

The Core Facility Staff does not expect to become coauthor for a mere training on a given system. Autonomous usage of our equipment also will not lead to co-authorship of Facility staff. (But please acknowledge, see previous paragraph).

If Core Facility Staff becomes more involved in a project and makes significant contributions, this usually will entitle to co-authorship. Examples for such contributions by facility staff include

- Significant contribution to the conception or design of the project.
- “Non-routine” training, consultation, or services, for example multiple joint microscopy sessions.
- Autonomous recording or processing of images or data analysis by facility staff.
- Development of: novel procedures or models for data acquisition or -analysis, experimental approaches, adaptation of protocols to suit samples or material.
- Significant contributions to the manuscript. (A simple manuscript check as outlined above under “help with publishing microscope data” is not considered a significant contribution in this sense.)

User and group leader should proactively seek discussion with Core Facility staff at an early stage of the project if one of the above points possibly may apply, to avoid misunderstandings.

As co-authors, Core Facility scientists will contribute to writing the manuscript, approve the final version and take responsibility for the intellectual content of their contribution to the manuscript.

Co-authorship is in no case precluded by paying usage fees. The usage fee is to finance the usage of the instrument, not for staff contributions to a project.

The intellectual property of any data is owned by those who generate it. Exception: Core Facility staff does not claim ownership of data recorded during a dedicated training session.

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These guidelines are an update of the original version from 2016 and take effect in June 2026. Clarifications and updates to reflect current policies were made at several sites in the document. A paragraph on co-authorship was added, as required by current DFG guidelines.

June 2026, Steffen Dietzel, Head of the Core Facility Bioimaging.

Appendix 1: Agreement between user, group leader & Core Facility Bioimaging

The signees declare that they accept the complete guidelines of the Core Facility bioimaging including the following rules:

- The group leader agrees to cover for the usage fees caused by the user. See web site for current fees. The user may also obtain consumables (e.g. cover slips, microscopy compatible culture dishes, antibodies) from the facility.
- All above paragraphs and specifically those on Acknowledgement and Co-authorship are understood and accepted.
- Data storage on facility devices is for short-term periods only. The user will delete all files as soon as they are safely available on other systems. It is strongly advised to keep all original image data at least twice, on independent devices, to avoid data loss in case of hardware failure (hard drive crash; encryption by Trojan…). Facility staff may delete data left on facility devices after one week.
- The user and the respective group leader are responsible for the scientific integrity of the data and for long-term storage of the original data. The facility recommends to store all original data in the proprietary file format of the microscope manufacturer, since they often contain information such as exposure times, selected filters, etc. It is, however, the user's responsibility to confirm which information is stored automatically and which must be noted in the lab journal. Long-term storage of data for ten years after publication is generally recommended or requested. The BioImage Archive is a free, publicly available online resource from EMBL for image data associated with a peer-reviewed publication.
- For damages caused by improper usage, the user and his group and institution are responsible and must cover cost for repairs. For external users it is strongly recommended to negotiate a professional liability insurance.
- All animal experiments must comply with local regulations (Nutzerordnungen), in particular concerning cleaning and disinfection after the experiment. User and group leader are responsible for not bringing any vertebrate animals or live tissues from outside into the building without the explicit permission by the head of the in-house animal facility.
- All experiments with human material must comply with local ethics regulations.
- The cf bim rooms have a clearance for S1- or S2 genetically altered organisms. User and group leader assure that the user obtained "Schulung nach dem Gentechnikgesetz" before working in the facility and then will adhere to the respective rules in the facility. This also applies to users who are not working with genetically altered organisms.
- Documentation for any genetically altered living organisms brought into the facility rooms must be available at our "Gentechnische Anlage". For most S1 cases this means that a copy of the respective documentation must be deposited with the Core Facility Bioimaging. This is the responsibility of the user and the respective PI, as is to make sure that the organism is indeed S1 (and not a higher security level). Introducing S2-organisms first must be cleared with Core Facility staff and the Regierung von Oberbayern (via University). .

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City, Date	Signature Group leader	Signature User

Names in READABLE Block Letters: …… ……

Appendix 2: Additional agreement between user and Core Facility Bioimaging

The signee accepts the guidelines of the Core Facility including the following rules:

- The user will not share his login credentials with others and will not let others who do not have valid booking rights for that microscope operate the system or change settings! This prohibition also applies to members from the same group. Violation of this guideline will lead to temporary or permanent loss of usage privileges.
- No USB devices will be attached to any microscope computer. File transfer is via network only. The user needs to have a storage space that can be reached via network (e.g. LRZ Sync and share).
- The user is responsible for the complete documentation of the experiments including applied imaging conditions, microscope settings and image manipulations. The cf bim staff is available to give advice on this documentation.
- If problems or unusual or improper behavior of the hardware or software are noticed, the user will inform the facility staff.
- The user has to handle all equipment with utmost care and according to instructions to avoid damage and expensive repairs. Cleaning of immersion objectives after each session is performed according to procedure explained during the introduction. When in doubt, the user will ask the cf bim staff for advice.
- The user is responsible to check the equipment for cleanness and obvious damage before starting to work. Any problems inherited from a previous user have to be reported to the facility staff or they will become the responsibility of the current user. At the end of the work, the equipment has to be left in a state as taught by the facility staff. This includes cleaning of immersion objectives by facility approved methods. No slides, cannulas or other left-overs will be left at the workplace. Left samples may be discarded by the facility staff.
- No dangerous chemicals or instrumentation may be brought into the facility without explicit consent of facility staff.
- In case of any accidents, e.g. leakage of liquids into the instruments or contamination of the workplace with chemicals, the facility staff will be immediately notified.
- Most facility microscopes have LEDs as fluorescence excitation source, but some microscopes (e.g. Cajal, Anti-Stokes), still work with Mercury based lamps. (The ‘metal’ in metal-halogenide lamps is Mercury!) Mercury high power lamps may explode and set free hot mercury vapors. Although this is extremely rare over the last years, it is a great health hazard if it does occur. In such a case the room is to be immediately evacuated and secured against entry by others for at least 30 minutes, to allow cooling and condensation of mercury vapors.

I agree to adhere to the guidelines including the rules above.
I am aware that usage of the microscopes is logged via the respective computers. For each login, the user name and on/off-times are recorded. I can find the data privacy policy in the booking software under “Documents”.

City, Date: Signature User:

Name in READABLE block letters: ……