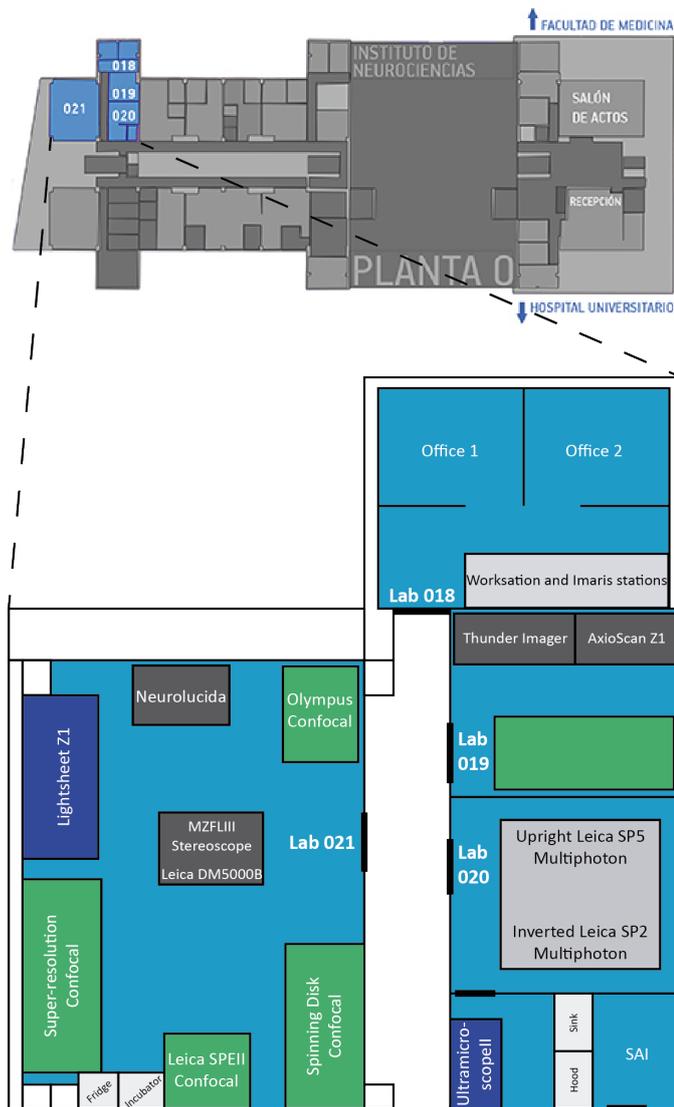


## Facility

The Imaging Facility is located in the south area of the IN ground floor. It has the following laboratories:

- Lab 018 Imaging Facility
- Lab 019 Confocal Microscopy
- Lab 020 Multiphoton Microscopy
- Lab 021 Super-Resolution Microscopy & Lightsheet

The following map illustrates the location of the equipment available in each room.



## Equipment

### - Multiphoton microscopes (Lab 020)

- **Leica SP2 inverted multiphoton microscope** with incubation system, temperature controller and CO<sub>2</sub>. It has a MaiTai HP DeepSee infrared laser tunable from 690nm to 1040nm for multiphoton acquisition and multiline argon laser (458, 476, 488, 496 and 515nm) for acquisition in confocal mode. It is equipped with a wide variety of objectives of different magnifications, immersion media and working distances.

- **Leica SP5 upright multiphoton microscope** with the necessary equipment to carry out *in vivo* and *in vitro* imaging experiments combined with electrophysiological recordings. It has a MaiTai HP DeepSee infrared laser tunable from 690nm to 1040nm and external high sensitivity hybrid detectors for multiphoton acquisition. For confocal acquisition mode it has a multiline argon laser (458, 476, 488, 496 and 515nm), laser diode 561nm and 633nm. The objectives most used in this equipment are 5x dry, 25x and 63x water immersion and long working distance.

### - Confocal microscopes:

- **Leica SPEII upright confocal microscope (Lab 021)** for fixed samples, with motorized stage for the acquisition of mosaic and multiposition images. With Navigator software module for performing irregular mosaics, focus maps of the sample in z and fast low resolution overview of the sample for selecting regions of interest. It has four diode lasers (405, 488, 561 and 635nm) and four lenses (dry 5x and 10x, oil 20x, 40x and 63x).

- **Olympus FV1200 (Lab 021)** inverted confocal microscope for fixed samples, with an XY motorized stage that enables multi-field imaging and tiling experiments. It is equipped with violet (405nm), multiline argon (458, 488 and 515nm), 559nm and 635nm lasers. It has objectives of 10x/0.30 and 20x/0.75 dry in addition to 20x/0.85, 40x/1.30 and 60x/1.42 oil.

- **Inverted super-resolution confocal microscope Zeiss LSM 880-Airyscan Elyra PS.1 (Lab 021)** with incubation system, temperature controller and CO<sub>2</sub> for conducting multidimensional imaging experiments with fixed biological tissue and with live biological samples (*in vitro*). It allows to acquire images both in confocal mode and super-resolution with Airyscan (resolution up to 140nm), SR-SIM (resolution up to 100nm) and PALM / dSTORM (up to 20-30nm). It is equipped with two sets of lasers: for confocal microscopy (405, 458, 488 and 514nm, 561 and 634nm) and super-resolution (405, 488, 561 and 640nm). It has the following objectives: 10x/0.45 dry, 25x/0.8 multi-immersion (water, oil, glycerol and silicone), 40x/1.2 water, 63x/1.2 water, and 63x/1.4 and 100x/1.46 oil (special for dSTORM).

- **Dragonfly spinning disk inverted confocal microscope (Lab 021)** for real-time capture of dynamic processes. It has incubation with temperature controller and CO<sub>2</sub>, and a motorized stage in XYZ for 3D / 4D multiposition and tiling experiments. Two Andor sCMOS Zyla 4.2 cameras. It has four laser lines (405, 488, 561 and 637nm). The optics consist of the following objectives: 10x/0.45 and 20x/0.75 dry, 20x/0.75 multi-

immersion (oil, glycerin and water), 25x/0.95 water immersion WD = 2.4mm, 40x/1.30 and 60x/1.40 oil. The software allows "on line" deconvolution and mosaic stitching.

## - Light sheet microscopes:

- **LaVisionBiotec Ultramicroscope II light sheet microscope (Lab 020)** for clarified samples. It has lasers for 488nm, 561nm and 635nm lines. The acquisition objective is 2x with 0.63x to 6.3x zoom, offering dynamic magnification from 1.26x to 12.6x.

- **Zeiss Lightsheet Z1 Microscope (Lab 021)** for live semitransparent samples allowing image acquisition with 360° rotation. It is equipped with 405nm, 488nm, 561nm and 635nm lasers. It has three objectives: a dry 5x/0.16 and two water immersion objectives (10x/0.5 and 20x/1.0).

## - Widefield microscopes:

- **Inverted microscope Leica Thunder Imager (Lab 019)** fully automated, for the capture of images with optical sectioning by Computational Clearing in fixed or live samples. Leica DFC 9000 GTC sCMOS monochrome camera. LED illumination with 8 lines (395nm, 438nm, 475nm, 511nm, 555nm, 575nm, 635nm and 730nm), filters for emissions type DAPI, CFP, GFP, YFP, Tomato, mCherry, Cy5 and Cy7. It has the following objectives: 5x/0.12 dry WD = 14mm, 10x/0.32 dry WD = 11.13mm, 20x/0.80 dry WD = 0.4 mm, 40x/1.30 oil WD = 0.22mm, 63x/1.40 PL APO CS2 oil WD = 0.14mm.

- **Zeiss AxioScan.Z1 slide scanner (Lab 019)**, fully motorized for automated brightfield and fluorescence acquisition of up to 100 slides. AxioCam 506 monochrome camera and Hitachi HV F202 color camera. LED illumination with 7 lines (385nm, 430nm, 475nm, 555nm, 590nm, 630nm and 735nm). Emission filters for DAPI, FITC, DsRed, Cy5, Cy7, CFP, YFP and mCherry. It has the following dry objectives: 5x/0.25, 10x/0.45, 20x/0.80 and 40x/0.95.

- **NeuroLucida System (Lab 021)** with NeuroLucida and StereoInvestigator software for the reconstruction and morphometric analysis of brain tissue and neurons. It is based on a Leica DM4000 B brightfield fluorescence microscope. It is equipped with filters for DAPI, GFP, Cy3 and Cy5. It has dry objectives 2.5x, 10x, 20x and 40x and immersion oil 63x and 100x. Detection can be done through a color camera (MBF CX9000) or a monochrome camera (QImaging).

- **Leica DM5000B (Lab 021)** upright fluorescence and brightfield microscope for viewing fixed samples. It is equipped with fluorescence filters for DAPI, GFP and Cy3. It has 2.5x, 5x, 10x, 20x and 40x dry objectives and a 63x oil.

- **Leica MZFLIII fluorescence stereoscope (Lab 021)**, fluorescence and brightfield for sample visualization. It is equipped with fluorescence filters for DAPI, GFP and Cy3.

## - Workstations:

- **Super-resolution workstation (Lab 021)** for image processing and analysis. Contains ZEN Black, ZEN Blue,

Huygens Professional, Leica Widefield LAS X Core, Imaris Viewer and ImageJ/Fiji software.

- **Lightsheet workstation (Lab 021)** for multidimensional image processing and analysis. Contains ZEN Black, ZEN Blue 3.3 Lite, Huygens Professional, Leica Widefield LAS X Core, Imaris Viewer and ImageJ/Fiji software.

- **Imaris I workstation (Lab 018)** for 3D and 4D image processing, analysis and quantification. It has Imaris, AutoQuant X3, Huygens Professional, ImageJ/Fiji, Olympus FV10-ASW Viewer, Leica LAS X Core, Zeiss ZEN Blue 3.3 Lite and LaVisionBiotec Terrastitcher InspectorPro software.

- **Imaris II workstation (Lab 018)** for 3D and 4D image processing, analysis and quantification. It has two processing hard drives to provide Windows and Linux operating systems. Windows disk has Imaris and Imaris Stitcher (Bitplane), ImageJ/Fiji 64 bit, Olympus FV10-ASW Viewer, Leica LAS X Core and Zeiss ZEN Blue 3.3 Lite software. Linux disk has both ClearMap and Huygens Core HRM software.

- **Workstation (Lab 018)** for image processing with ImageJ/Fiji, NeuroLucida Explorer, Olympus Viewer FV10ASW, ZEN Blue 3.3 Lite and Leica LAS X Core.

- **NAS server**, 224TB for temporary storage of files generated on super-resolution, light sheet, slide scanner AxioScan and Thunder microscopes, that require further processing with Imaging Facility scientific software.

The Facility has a senior technician specialized in microscopy, Verona Villar Cerviño ([vvillar@umh.es](mailto:vvillar@umh.es)), a technical manager, Giovanna Expósito Romero ([jexposito@umh.es](mailto:jexposito@umh.es)), and a scientific manager, Eloísa Herrera González de Molina ([e.herrera@umh.es](mailto:e.herrera@umh.es)).

## List of services offered

- Training and technical assistance for the use of all the devices and equipment provided in the Facility.
- Advice and guidance on experimental design.
- Training and assistance in image analysis and processing using the Facility's provided and freely available software.
- Guidelines elaboration and assistance in the writing of materials and methods for publications.
- Maintenance and improvement of the equipment and the entire infrastructure of the unit.
- Organization of workshops and demonstrations of new technologies related to image acquisition, processing and analysis.
- Guidance on equipment acquisition.
- Drafting justifying reports for new scientific-technical equipment calls for the Facility and for updating the existing ones.
- Preparation of documentation for the acquisition of new equipment for the Imaging Facility.
- Participation in outreach activities.

## General operating considerations:

1. Training requests will be made through our website ([http://in.umh-csic.es/es/si\\_servicios.aspx](http://in.umh-csic.es/es/si_servicios.aspx)).
2. Communications, questions, and appointment inquiries will be made preferably by email to: [microscopia@umh.es](mailto:microscopia@umh.es).
3. The Principal Investigator is the responsible for the correct use of the Facility equipment by any member of his/her team.
4. The user must know the basic handling instructions for each equipment that he/she uses, as well as the applicable regulations in each case.
5. It is mandatory for new users to receive the corresponding training by the Facility's staff before using any equipment. Moreover, during the first sessions they must be supervised by the Facility's staff or an experimented user, in order to prevent damage to the equipment.
6. The booking holder is responsible for the state of the equipment during that period.
7. The last booked user of the day is responsible for turning off the microscope and all its components.
8. The work area must always remain clean, especially at the end of the session.
9. If you are unsure about performing any task, no matter how simple it may seem, ask for help.
10. It is strictly forbidden to surf the internet, make software changes and the use of external memory devices on all computers in the Facility.

11. It is forbidden to store data on the computers of the facility. Users will be responsible for transferring their images once acquired or processes, as well as removing them from their user folder. The files that remain on the hard disk for more than a week can be deleted by the facility staff for the correct performance of the equipment.

12. All users must request their inclusion in the mailing distribution list [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es) by sending an email to [microscopia@umh.es](mailto:microscopia@umh.es). Through this list all the communications referring to the Imaging Facility will be made.

13. Microscopes and workstations will be always booked through the website: <http://in.umh-csic.es/>> Intranet> Room Reservation.

14. Users who, without a justified reason, do not use the slot they have booked electronically will be prohibited from using any equipment in the facility for the next two weeks. If this behavior is repeated, two more weeks will be added to the initial penalty.

15. In case of canceling a slot once the booking schedule has begun, you must communicate by e-mail to the rest of the users ([in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es)), in case another colleague can take advantage of it. Unjustified cancellations on the same booking day will be penalized with one week without access to the Facility equipment. If this behavior is repeated, one more week will be added to the initial penalty.

16. If any user skips the sanctions imposed, they will be prohibited from using the Facility for three months.

17. In the case of repeat offenders, the cause of the penalty will be reported by email to the Principal Investigator of the research group to which the user belongs.

## Equipment

### 1. Multiphoton microscopes

#### General considerations

1. The multiphoton microscopy room consists of both an upright and an inverted microscope powered by a common infrared pulsed laser. Each are equipped, furthermore, with visible lasers to work in confocal mode. An incubation system with temperature and CO<sub>2</sub> control is available in the inverted microscope, and the necessary equipment to carry out *in vivo* and *in vitro* imaging experiments combined with electrophysiological recordings in the upright microscope.

2. These microscopes are located on the ground floor, in laboratory 020, inside the Imaging Facility of the IN.

3. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's personnel.

#### Rules

1. Detailed instructions for multiphoton microscopy equipment use are contained in manuals that are regularly updated and that will be provided to users. It is essential that new users read and become familiar with these manuals.

2. The use of multiphoton microscopy equipment is assigned using the following criteria: (1) priority will be given to experiments that make specific use of multiphoton technology, and not just confocal lasers; (2) Slots will be assigned in a way that allows the sharing of equipment and possible configuration changes to be scheduled as efficiently as possible; (3) Priority will be given to users who book the microscopes in advance. To ensure this last point, and to allow the reservation of long sessions or with special hours, the Facility's staff sends by email a notice, regularly and with sufficient advance, so that interested users can book the equipment in advance. It is the responsibility of each user to request their inclusion in said email list. Once the booking requests have been received in response to each notice, the calendar is subsequently displayed on the institute's intranet. Slots that remain free can be booked at any time. Finally, it is also possible to use the microscopes without prior reservation as long as they remain free.

3. Given the multiplicity of modes of use of multiphoton microscopy equipment, it will be the responsibility of each user to find out about the operations to be carried out to start and end the sessions. This information can be requested to Facility's personnel.

#### File transfer

1. All user files must be saved in the D: \ drive, inside the "users" folder, in a folder with their name. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. The files are transferred over the UMHNET network. To do this, each user folder must be shared with its corresponding umh user.

2. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility

Guidelines. File transfer can be performed while the microscope computer is turned on.

3. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

### 3. Leica SPEII Confocal Microscope

#### General considerations

1. It is an upright confocal for fixed samples, with a motorized stage, which allows multiposition and mosaic image acquisition. The navigation module allows automating the acquisitions on a preview of the sample, as well as making focus maps to automatically adapt the z-stack to the focus point in different regions of the tissue.

2. It is equipped with 405nm, 488nm, 561nm and 635nm diode lasers, 5x /0.15 and 10x /0.30 dry objectives, 20x /0.60 multi-immersion, and 40x /1.25 and 63x /1.30 oil immersion.

3. It is located on the ground floor, in the laboratory 021, at the Imaging Facility of the IN.

4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility personnel.

5 The Imaging Facility has guidelines for users and technical staff to support all users.

#### Rules

The Leica SPEII confocal microscope will be used in **two-hour slots**, which can be reserved in advance through the room reservation system on the website <http://in.umh-csic.es/> >Intranet> Room Reservation> **SI\_ Microscopio Confocal SPE**, in accordance with the following standards:

1. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours). The group that has financed the purchase of the equipment has twelve fixed slots per week that can be consulted on the web.

2. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.

3. Within restricted hours, each laboratory will have a booking limit of 8 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).

4. Each group may not book more than two consecutive slots within the restricted hours.

5. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.

6. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
7. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
8. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.
9. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### Logbook

In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

### Instructions for the beginning of the session

1. Turn on the red switch on the power strip that is located on the left table leg (this will turn on the microscope and the PC).
2. Turn on the laser box using the green switch and then turn the laser switch to ON (I).
3. Turn on the LED fluorescence lamp.
4. Start the user session: LeicaSPEII\ (Laboratory Session) and laboratory password.
5. Start the LAS X program and verify that the power-up setting is Machine DM 5500.

### At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. To end the work session in Windows you must go to Start, user icon and select "Sign out".
3. The confocal microscope desk and the equipment must be in perfect condition and cleanliness. Any anomaly will be noted in the notebook and immediately notified to the Facility personnel.
4. To clean the lenses there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses are not scratched. The 5x and 10x objectives are NOT immersive, but the other objectives are. Be very careful not to smear this lens with immersion oil.
5. Always set the 5x objective at the end of the session and center the stage to avoid possible collisions. The lenses, stage and clamping system are very delicate.
6. If there are no booked users within the next 2 hours, shut down the equipment following the shutdown instructions.

### Shutdown instructions

1. Close the LAS X software.
2. Shut down the computer.
3. Turn the laser switch to OFF (O) and then turn off the green switch on the laser box.

4. Turn off the red switch on the power strip, which is on the left leg of the table.
5. Turn off the fluorescence lamp.

### File transfer

1. All user files must be saved in the D:\ drive, inside the "Users" folder, in a folder with their name. It is necessary to empty the generated files weekly, since the space of the D:\ partition is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 4. Olympus Confocal Microscope

### General considerations

1. The Olympus Fluoview FV1200 confocal microscope for fixed samples, has XY motorized stage allowing multi-position and mosaic acquisitions.
2. It is provided with 405nm violet, 458, 488 and 515nm multiline argon, 559nm diode and 635nm diode lasers. It has 10x and 20x dry objectives installed in addition to 20x, 40x and 60x oil immersion.
3. It is located in room 021 of the ground floor within the IN Imaging Facility.
4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.
5. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

The Olympus FV1200 confocal microscope will be used **in two-hour slots**, which can be booked in advance through the room reservation system on the website <http://in.umh-csic.es/>> Intranet> Room Reservation> **SI Microscopio Confocal Olympus**, in accordance with the following standards:

1. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours). The groups that co-financed the purchase of the equipment have two fixed slots per week from 8am to 4pm.

2. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
3. Within restricted hours, each laboratory will have a booking limit of 9 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).
4. Each group may not book more than two consecutive slots within the restricted hours.
5. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
6. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
7. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
8. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.
9. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### Logbook

1. In the microscope room there is a record of use notebook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.
2. Before starting the working session, each user should check that the microscope has not recently been turned off by the previous user. To preserve the argon laser and mercury lamp, the minimum time that must elapse between OFF and the next switch on is a minimum of 1 hour for the laser and 30 minutes for the mercury lamp. It is also very important to set the Argon laser potentiometer to the minimum when is not in use.

### Instructions for the beginning of the session

1. The air conditioning must always be switched on at a temperature between 22 and 24°C to maintain the temperature of the room.
2. Turn on the upper and lower positioned power stripes located on the left part of the desk pressing the black buttons.
3. Turn on the Argon laser by pressing the switch and after 10 seconds by turning the laser key to the ON position.
4. Turn on the FV10 unit (scanner, 405nm laser and 635nm laser).
5. Turn to ON the diode laser 561nm key.
6. Turn on the fluorescence lamp (X-Cite) and adjust the intensity with the black wheel.

7. Turn on the PC and login: User Name: OLY-FV-PC\Olympus; Password: olympus.

8. Start the FV10-ASW program with the corresponding user session.

### At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of each work session, the confocal microscope room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be recorded in the logbook and immediately notified by e-mail to the Facility's staff.
3. To clean the lenses, there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses do not rub off. The 10x DRY and 20x DRY objectives are NOT immersion. Be very careful not to smear these lenses with immersion oil.
4. Always set the 10x objective at the end of the session and center the stage to avoid possible collisions. The lenses, stage and clamping system are very delicate.
5. If there are no booked users within the next 2 hours, shut down the equipment following the shutdown instructions.

### Shutdown instructions

1. Close the Olympus FV10-ASW program and turn off the PC.
2. Turn off the X-Cite fluorescence lamp.
3. Turn the Argon laser key to OFF. Attention: leave the switch on for at least 10 minutes for the laser to cool down.
4. Turn off the FV10 unit.
5. Turn the 561nm laser key to OFF.
6. Turn off the lower and upper strips through the black buttons.
7. After at least 10 minutes, turn off the Argon laser switch.

### File transfer

1. All user files must be saved in the D:\ drive, inside the "Users" folder, in a folder with their name. It is necessary to empty the generated files weekly, since the space of the D:\ partition is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

### 5. Super-resolution confocal Zeiss LSM 880-Airyscan Elyra PS.1 microscope

#### General considerations

1. The super-resolution confocal microscope Zeiss LSM880-Airyscan Elyra PS.1 in addition to confocal incorporates three super-resolution techniques: Airyscan, SR-SIM (structured illumination) and SMLM (single molecule localization microscopy). Allows multiposition and mosaic acquisitions. The incubation system allows to carry out *in vivo* experiments with the different techniques that the equipment has.
2. It is equipped with two laser sets, one for confocal and Airyscan microscopy with violet (405nm), multiline argon (458, 488 and 514nm), diode 561nm, 594nm and 634nm lasers; and 405nm, 488nm, 561nm and 640nm high power lines for SR-SIM, PALM/dSTORM super-resolution microscopy. The objectives installed on the microscope are: 10x dry, 25x multi-immersion (water, oil, glycerol and silicone), 40x water, 40x water *dipping* and long working distance, 63x water, 63x oil and 100x oil (special for PALM/dSTORM).
3. It is located in room 021 on the ground floor, inside the IN Imaging Facility.
4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
5. The Imaging Facility has guidelines for users and technical staff to support all users.

#### Rules

1. The use of the microscope is assigned using the following criteria: (1) prioritize specific experiments using SR-SIM or PALM/dSTORM super-resolution technology first, secondly *in vivo* experiments, thirdly experiments using Airyscan technology and fourthly confocal microscopy applications; (2) slots will be assigned in a way that allows possible configuration changes to be scheduled as efficiently as possible; (3) priority will be given to users who book the microscope in advance. To ensure this last point, and to allow long sessions bookings or with special hours when required by the experiments, users will make their requests more than two weeks in advance by sending an email to [microscopia@umh.es](mailto:microscopia@umh.es). Once the booking requests have been received, a calendar is drawn up according to the priority criteria mentioned. This calendar will be subsequently displayed on the institute's intranet: <http://in.umh-csic.es/>> Intranet> Room Reservation> **SI\_Microscopio Superresolución Zeiss**.
2. Given the multiplicity of modes of use of the equipment, it will be the duty of each user to find out about the operations to be carried out to start and end the sessions. This information will be requested from the Facility staff.
3. Stand-alone users can make bookings **in two-hour slots** through the intranet booking system <http://in.umh-csic.es/>> Intranet> Room Reservation> **SI\_Microscopio Superresolución Zeiss**.
4. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).

5. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
6. Within restricted hours, each laboratory will have a reservation limit of 10 slots per week. The control of these bookings is done by the website booking system (<http://in.umh-csic.es/>).
7. Each group may not book more than two consecutive slots within the restricted hours.
8. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
9. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
10. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
11. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.
12. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

#### Logbook

1. In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.
2. Before starting the working session, each user should check that the microscope has not recently been turned off by the previous user. To preserve lasers and mercury lamps, the minimum time that must elapse between OFF and the next switch on is a minimum of 1 hour for the laser and 30 minutes for the mercury lamp.

#### Instructions for the beginning of the session

1. The air conditioning must always be switched on at a temperature between 22 and 24°C to maintain the temperature of the room.
2. Turn on "Main Switch" on the controller.
3. Turn on the HXP 120V fluorescence lamp.
4. Turn on the "System PC" switch.
5. Turn on the computer and wait for the BIOS window (black window) to appear.
6. Turn on the switch "Components".
7. Initiate the "LSM User " session with password: 1111.
8. Start ZEN BLACK software.

## At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of each work session, the room, as well as the equipment, must be in perfect condition of use and cleanliness. Any anomaly will be recorded in the logbook and immediately notified by e-mail to the Facility's staff.
3. To clean the lenses, there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses are not scratched. The 10x objective is NOT immersive, but the other objectives are. Be very careful not to smear this lens with immersion oil.
4. Always set the 10x objective at the end of the session and center the stage to avoid possible collisions. The lenses, stage and clamping system are very delicate.
5. If there are no booked users within the next 2 hours, shut down the equipment following the shutdown instructions.

## Shutdown instructions

1. Turn off the multi-argon laser through the software.
2. Close the ZEN BLACK software.
3. Shut down the computer.
4. Turn off "Components" switch.
5. Turn off the HXP 120V fluorescence lamp.
6. Turn off "System PC" switch.
7. Wait for the argon laser fan to turn off and then turn off "Main Switch".

## File transfer

1. All user files must be saved in the D:\ drive, inside the "Users" folder, in a folder with their name. It is necessary to empty the generated files weekly, since the space of the D:\ partition is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.
4. Those super-resolution files that are going to be processed in Imaging Facility's workstations can be temporarily saved on the NAS server. Ask the Facility staff about this resource.
5. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 6. Super-resolution Workstation

### General considerations

1. Super-resolution image processing and analysis computer located in the laboratory 021, next to the Super-resolution acquisition computer.
2. It has the following characteristics: 2 Intel (R) CPU ES-2623 v3 @ 3.00GHz processors, 192GB RAM, 4GB NVIDIA Quadro K2200 graphics card, 256GB SCSI processing disk and 3.39TB SATA storage disk.
3. Data can be transferred directly from the acquisition computer to the processing computer. They can also be processed without making the transfer, since from the processing there is access to the acquisition computer. There is also direct access to the NAS server volumes on the workstation's desktop.

### Rules

1. The workstation will be used by remote desktop or in person if combined with the acquisition of images in the super-resolution microscope. Those users interested in using this equipment remotely should contact the Image Facility through the email [microscopia@umh.es](mailto:microscopia@umh.es).
2. It will work **in two-hour slots**, which may be booked in advance through the room reservation system on the website <http://in.umh-csic.es/>> Intranet> Room Reservation> **SI\_Workstation SR**, in accordance with the following standards:
3. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).
4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
5. Within restricted hours, each laboratory will have a reservation limit of 10 slots per week. The control of these slots is done by the booking website system (<http://in.umh-csic.es/>).
6. Each group may not reserve more than two consecutive slots within the restricted hours.
7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
8. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
10. The user of the last slot of the day is responsible for shutting down the system.
11. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

## File transfer

1. All user files must be saved in the D:\ drive, inside the "Users" folder, in a folder with their name. It is necessary to empty the generated files weekly, since the space of the D:\ partition is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be done while the computer is turned on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 7. Dragonfly spinning disk inverted confocal microscope

### General considerations

1. The Dragonfly spinning disk confocal microscope is characterized by a high-speed acquisition and low sample bleaching and phototoxicity, making it ideal for *in vivo* experiments. The confocal spinning disk unit contains two pinhole sizes (25 and 40 $\mu$ m), with a maximum rotation speed of 400 frames per second.
2. It has four lasers (405, 488, 561 and 637nm) and two Andor Zyla 4.2 plus sCMOS cameras with acquisition speed of up to 100fps at maximum resolution. It has seven objectives: 10x and 20x dry, 20x multi-immersion (oil, glycerin and water), 25x immersion in water and long working distance, and 40x and 60x oil.
3. It is located in room 021 on the ground floor, inside the IN Imaging Facility.
4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
5. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

1. Priority will be given to *in vivo* experiments. To ensure this last point, and to allow long sessions bookings or with special hours when required by the experiments, users will make their requests more than two weeks in advance by sending an email to [microscopia@umh.es](mailto:microscopia@umh.es). The reservation calendar will be displayed on the institute's intranet: <http://in.umh-csic.es/> > Intranet> Room Reservation> **SI\_Microscopio Spinning Disk**.
2. Users who want to book the equipment for fixed samples may do so one week in advance through the intranet, in accordance with a continuous reservation system. For example, bookings for a Monday can be made from the previous Monday at 10am. Each

user will not be able to reserve more than two consecutive shifts within the restricted hours (8am to 8pm). Outside of restricted hours, there is no restriction on booking, although these must always be noted.

3. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
4. In any case, the booking of an unused slot is lost **30 minutes** after its beginning.
5. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.
6. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### Logbook

1. In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

### Instructions for the beginning of the session

1. Turn on the power strip located on the left side of the shelf.
2. Turn the laser box key to ON.
3. Turn on the power strip located on the right side of the microscope table.
4. Turn on the microscope controller (white box on the desk) and after about 5 seconds the microscope.
5. Turn on PC and Fusion software. The computer can be started at any time, the software only after all the components have been switched on.
6. Turn on the LEDs for epi-fluorescence by pressing the blue ON/OFF button on the CoolLed controller on the table, on the right side of the microscope.
7. For *in vivo* experiments turn on the shelf strip next to the Okolab box. Open the black CO<sub>2</sub> key (from the wall pressure reducer), as well as the air key (located on the transparent tube). Turn on the CO<sub>2</sub> and temperature controller screen on the table.

### At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of each work session, the room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be noted in the equipment log book and immediately notified to the Facility's staff.
3. To clean the lenses, there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses are not scratched.

4. Always set the 10x low objective at the end of the session and center the stage to avoid possible collisions. The lenses, stage and clamping system are very delicate.

5. If no one is booked in the next 2 hours, shut down the equipment following the shutdown instructions.

### Shutdown instructions

1. Close Fusion software before turning off any component. Also turn off the computer if it is not going to be used for data transfer.

2. Turn off the microscope and 5 seconds later its controller (white box on the desk).

3. Turn off the power strip on the right side of the table.

4. Turn the laser switch to OFF.

5. Turn off the switch on the power strip on the left side of the shelf.

6. If the in vivo system has been used close the CO<sub>2</sub> and air keys, turn off the controller screen and the power strip switch on the shelf next to the Okolab box.

### File transfer

1. All user files must be saved in the D:\ drive, inside the "Users" folder, in a folder with their name.

2. Users will take care to remove their files from the computer as soon as possible, as disk D is also used for the acquisition software cache. User files that remain on the hard drive for more than a week may be deleted by the Facility staff for the correct operation of the software.

3. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding umh user.

4. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.

5. Those files that are going to be processed in Imaging Facility's workstations can be temporarily saved on the NAS server. Ask the Facility's staff about this resource.

6. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 8. Light sheet Ultramicroscope II

### General considerations

1. The Ultramicroscope II light sheet microscope is a stereoscope designed for clarified samples imaging.

2. It is located in room 020 on the ground floor within the IN Imaging Facility.

3. It is equipped with the following laser lines: 488nm, 561nm and 635nm. It has a 2x 0.5 NA objective with 0.63x to 6.3x zoom.

4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.

5. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

The Ultramicroscope II will be used **in three hour slots**, which can be booked in advance through the room reservation system on the website <http://in.umh-csic.es/> >Intranet> Room Reservation> **SI Ultramicroscope II**, in accordance with the following standards:

1. The use of DBE as a medium for image acquisition is prohibited. Eci (Ethyl cinnamate) must be used instead.

2. Solid waste (gloves, paper, etc.) and liquids generated during the use of the Ultramicroscope II must be removed from the room and managed by users.

3. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.

4. The restricted use hours are from 9am to 9pm, Monday through Friday.

5. Within restricted hours, each laboratory will have a booking limit of 8 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).

6. Each group may not book more than two consecutive slots within the restricted hours.

7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.

8. Outside of restricted hours, there is no restriction on booking, although these must always be noted.

9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.

10. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.

## Incidents

All incidents found in the use of the equipment must be communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

## Instructions for the beginning of the session

1. Turn on the hood for sample preparation.
2. Turn on the PC and open the Ultramicroscope\User session (without password).
3. Turn on the power strip.
4. Turn on the lasers with the key (position 1).
5. Open ImSpectorPro software.

## At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of each work session, the microscope room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be immediately notified to the Imaging Facility's staff.
3. To clean the lenses, there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses are not scratched. (use a little ethanol, never dry).
4. Solid waste (gloves, paper, etc.) and liquids generated during the use of the Ultramicroscope II must be removed from the room and managed by users.
5. If there are no booked users within the next 2 hours, shut down the equipment following the shutdown instructions.

## Shutdown instructions

1. Shut down ImSpector software.
2. Turn the lasers off with the key (position 0).
3. Turn off the power strip.
4. Shut down the computer.
5. Collect and save the solution that has been used for acquisition, as it can be reused.
6. Clean the cuvette and sample holders with soap and water and dry thoroughly with paper. Be very careful when handling the cuvette, as it is a very delicate piece.
7. Clean the lens with lens cleaning paper.
8. Clean and turn off the hood.

## File transfer

1. All user files must be stored on the D:\ Users drive in a folder with their name.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.

3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.

4. Those files that are going to be processed in Imaging Facility's workstations can be temporarily saved on the NAS server. Ask the Facility's staff about this resource.

5. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 9. Lightsheet Z1 *in vivo*

### General considerations

1. The Lightsheet Z1 microscope is specially designed for the acquisition of 3D/4D images of transparent live samples, although it can also be used for unclear fixed samples. The possibility of 360° rotation of the specimen allows to acquire multiple views of the sample.
2. It is located in room 021 on the ground floor within the IN Imaging Facility.
3. It is equipped with the following laser lines: 405nm, 488nm, 561nm and 635nm. It has a 5x dry objective, as well as two water immersion objectives (10x and 20x). The objective that is installed in the equipment is 10x, so the user must notify the Facility staff in advance if he/she wishes to use a different objective.
4. Likewise, there are two filter wheels, one for DAPI, green and red and one for green, red and far red. It is important to notify the Facility staff of the filter wheel you want to use, so that they can carry out the change and the pertinent calibrations.
5. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.
6. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

The Lightsheet Z1 microscope will be used **in three hour slots**, which can be booked in advance through the room reservation system on the website <http://in.umh-csic.es/> > Intranet> Room Reservation> **SI\_Lightsheet in vivo**, in accordance with the following standards:

1. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
2. Each group may not book more than two consecutive slots within the restricted hours except for *in vivo* experiments, which will not have this restriction.
3. The duration of the booked slots is free in the case of *in vivo* experiments, although it should be adjusted as much as possible.

Each laboratory will have a maximum of three such slots per week.

4. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.

5. In any case, the booking of an unused slot is lost 30 minutes after its beginning.

6. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.

## Incidents

All incidents found in the use of the equipment must be communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

## Instructions for the beginning of the session

1. Turn on System, PC and incubation switches.
2. Turn on the acquisition PC.
3. If the specimen chamber is inserted in the equipment, place and connect it according to the equipment guideline. Fill it with the pertinent liquid according to the sample to be used.
4. Open Zen Black software and select "Start System"
5. Introduce the sample into the chamber

## At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of each work session, the microscope room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be notified immediately to the Imaging Facility's staff.
3. To clean the lenses, there is lens paper in the room. Be cautious when cleaning the lenses so that the lenses are not scratched. Never dry clean lenses.
4. If there are no booked users within the next 2 hours, shut down the equipment following the shutdown instructions.

## Shutdown instructions

1. Upload the sample by clicking "Load Position" and remove the sample.
2. Shut down Zen Black software.
3. Turn off the acquisition PC.
4. Turn off the Incubator, PC, and System switches.
5. Clean the chamber and objective by passing distilled water through the syringe. Fill the chamber with distilled water and leave for a while to remove salts. Remove the water and the chamber from the equipment. Let it dry upside down on a piece of paper.

## File transfer

1. All user files must be saved on the Swap (X) drive in a folder with their name. It is necessary to empty the generated files, as space is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding umh user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.
4. Those files that are going to be processed in Imaging Facility's workstations can be temporarily saved on the NAS server. Ask the Facility's staff about this resource.
5. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 10. Lightsheet Workstation

### General considerations

1. It is a workstation for the processing and analysis of multidimensional images with the following characteristics: 2 Intel (R) Processors CPU ES-2620 v3 @ 2.40GHz, 192GB RAM, 4GB NVIDIA Quadro K2200 graphics card, 238GB SCSI processing disk and 36.3TB SATA storage disk.
2. It is located in lab 021 and has the ZEN Black, ZEN Blue 3.3 Lite, LAS X Core Widefield, Huygens Professional, Imaris viewer (free) software and ImageJ/Fiji.
3. Data can be transferred directly from the acquisition computer to the processing computer.

### Rules

1. The workstation will be used via remote desktop or in person when combined with imaging on the Lightsheet Z1 microscope. Those users interested in using this equipment remotely should contact the Imaging Facility's staff through the email [microscopia@umh.es](mailto:microscopia@umh.es).
2. It will work in **two hour slots**, which must be booked in advance through the room reservation system on the website <http://in.umh-csic.es/>> Intranet> Room Reservation> **SI\_Workstation Lightsheet**, in accordance with the following standards:
  3. The hours of restricted use of the workstation are from 8am to 8pm, Monday through Friday (a total of 30 slots during restricted hours).
  4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.

5. Within restricted hours, each laboratory will have a reservation limit of 10 slots per week. The control of these slots is done by the booking website system (<http://in.umh-csic.es/>)
6. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
7. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
10. The user of the last slot of the day is responsible for shutting down the system.
11. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### File transfer

1. All user files must be saved on the Swap (X) drive in a folder with their name. It is necessary to empty the generated files, as space is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all the equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding umh user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be done while the computer is on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 11. Leica Thunder Imager inverted microscope

### General considerations

1. It is an inverted widefield microscope, fully motorized for fluorescence and brightfield (DIC and Ph), which allows the capture of images at high speed, with the possibility of performing optical sectioning through Computational Clearing.
2. Incubation system on the stage that allows experiments with live cells.
3. It consists of a DFC 9000 GTC sCMOS camera, LED illumination with 8 lines (395nm, 438nm, 475nm, 511nm, 555nm, 575nm, 635nm and 730nm), and filters for the following emission types: DAPI, CFP, GFP, YFP, Tomato, mCherry, Cy5 and Cy7.
4. It has the following objectives: 5x/0.12 dry WD = 14mm, 10x/0.32 dry WD = 11.13mm, 20x/0.80 dry WD = 0.4mm, 40x/1.30 oil WD = 0.22mm, 63x/1.40 PL APO CS2 oil WD = 0.14mm.

5. It is located in room 019 on the ground floor within the IN Imaging Facility.
6. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
7. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

The Thunder Imager microscope is used to **in two-hour slots**, which can be booked in advance through the room reservation system on the website <http://in.umh-csic.es/> > Intranet > Room Reservation > **SI\_Thunder**, in accordance with the following standards:

1. Priority will be given to *in vivo* experiments. To ensure this last point, and to allow long sessions bookings or with special hours when required by the experiments, users will make their requests more than two weeks in advance by sending an email to [microscopia@umh.es](mailto:microscopia@umh.es).
2. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
3. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).
4. Within restricted hours, each laboratory will have a booking limit of 9 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).
5. Each group cannot book consecutive slots within the restricted hours.
6. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
7. Outside of restricted hours, there is no restriction on booking, although these must always be noted.
8. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
9. The user of the last slot of the day is responsible for shutting down the system, if there is no other reservation in the next 2 hours.
10. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### Logbook

In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

## Instructions for the beginning of the session

1. Turn on the computer.
2. Turn on the rest of the components using the switch on the strip located on the table.
3. Open LASX software.

## At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of the work session, the room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be noted in the logbook and immediately notified to the Facility staff.
3. To clean the oil from the 40x and 63x objectives please use lens paper.

## Shutdown instructions

1. Close LASX program.
2. Turn off the rest of the components using the switch on the power strip located on the table.
3. The computer can be left on during data transfer, it will not turn off with the other components referred to in section 2.

## File transfer

1. All user files must be saved in E:\ Users, in a folder with their name. It is necessary to empty the generated files weekly, since the space on the computer's hard disk is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be done while the computer is on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.
5. Those files to be processed on Image Facility workstations can be temporarily saved on the NAS server. Ask the Facility staff about this resource.

## 12. Zeiss AxioScan.Z1 Slide Scanner

### General considerations

1. This is a fully motorized brightfield and fluorescence scanner, allowing automated scanning of up to 100 slides.
2. Consists of a Hitachi HV F202 color camera and an AxioCam 506 monochrome camera, LED illumination with 7 lines (395nm, 430nm, 475nm, 555nm, 590nm, 630nm and 735nm), and filters

for the following emission types: DAPI, CFP, GFP, YFP, Tomato, mCherry, Cy5 and Cy7.

3. The following dry objectives are available: 5x/0.25, 10x/0.45, 20x/0.80 and 40x/0.95.
4. It is located in room 019 on the ground floor within the IN Imaging Facility.
5. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
6. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

1. The AxioScan.Z1 scanner **will be used remotely**, accessing the room only to load and unload the slides. Ask the Facility staff how remote access should be done.
2. The **one hour slots** can be booked in advance according to the following rules:
3. The booking and restricted use hours are from 11am to 5pm, Monday through Friday.
4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
5. Within restricted hours, each laboratory will have a booking limit of 9 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).
6. Each group may not book more than three consecutive slots within the restricted hours.
7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
8. In any case, the booking of an unused slot is lost 15 minutes after its beginning.
9. The user of the last slot of the day is responsible for initiating the scan of the slides loaded during that day on the equipment.

### Instructions for the beginning of the session

1. If the equipment is off, first turn on the computer, session name: Zeiss; password: axioscan.
2. Turn on the scanner and wait for the top left light to turn green.
3. Launch the Zen Blue software.
4. Load the samples with the holders you will find in the first drawer, and remember the number of the loading trays that you have used, in order to easily identify them in the software.
5. Leave the room and access the computer via remote desktop to assign the acquisition profiles corresponding to the samples.
6. Once the profiles have been assigned, exit the session by clicking on the x in the remote session window, never from Start>

User> Close Session, since in this way the software will be closed and you will lose all the work.

7. The last user of the day will be in charge of starting the scan acquisition.

### At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of the work session, the room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be noted in the equipment log book and immediately notified to the Facility staff.
3. All samples must be collected the day after the booking before the beginning of the first slot (11am), and the trays stored in the first drawer.

### File transfer

1. All user files must be saved in D:\Users\User's Images.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be done while the computer is on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.
5. Those files to be processed on Image Facility workstations can be temporarily saved on the NAS server. Ask the Facility's staff about this resource.

## 13. NeuroLucida System

### General considerations

1. NeuroLucida system consists of a fluorescence and brightfield upright microscope, two cameras, motorized stage and both NeuroLucida and StereoInvestigator softwares for reconstruction and analysis of brain tissue and neurons.
2. It is located in room 021 on the ground floor within the IN Imaging Facility.
3. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
4. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

1. NeuroLucida is used in **two-hour slots**, which can be booked in advance according to the following rules:
2. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).

3. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.

4. Within restricted hours, each laboratory will have a booking limit of 10 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).

5. Each group may not book more than two consecutive slots within the restricted hours.

6. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.

7. Outside of restricted hours, there is no restriction on booking, although these must always be noted.

8. In any case, the booking of an unused slot is lost 30 minutes after its beginning.

9. The user of the last slot of the day is responsible for shutting down the system, if there is no other booking in the next slot.

10. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

### Logbook

In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.

### Instructions for the beginning of the session

1. Turn on the microscope from the orange button on the back of the microscope.
2. Turn on the stage controller (silver unit located to the left of the microscope).
3. Turn on the MBF CX9000 color camera from the source on the PC table.
4. Turn on the LED illumination using the ON/OFF button of the controller on the desk.
5. Turn on the PC and start the MBF session (without password).
6. Start NeuroLucida or StereoInvestigator software using your lab session as "Group". In "Profile" select the camera you want to use. The laboratory sessions will be created by the technical staff of the Facility.
7. The stage and the motorized movement and attachment system are very delicate. Avoid touching any components of the stage or the motorized movement system, including the microscope focus wheels. It should also be avoided rotate or touch the cameras mounted on the microscope. If you have moved any of the components mentioned above, you shall immediately notify the Facility staff to assess the damage and proceed accordingly.

## At the end of the session

1. If a user logs out early, please notify the next scheduled user.
2. At the end of the work session, the room, as well as the equipment, must be in a perfect state of use and cleanliness. Any anomaly will be noted in the equipment log book and immediately notified to the Facility staff.
3. The 63x and 100x objectives are oil immersion. The rest of the objectives (2.5x, 10x, 20x and 40x) are dry, and therefore should not be used under any circumstances with oil. To clean the oil from the objectives please use lens paper.
4. Always set the 10x objective at the end of the session and center the stage to avoid possible collisions. The lenses, stage and clamping system are very delicate.

## Shutdown instructions

1. Close NeuroLucida or StereoInvestigator software and turn off the computer.
2. Turn off the stage controller.
3. Turn off the MBF CX9000 color camera.
4. Turn off the microscope.
5. Turn off the LED.

## File transfer

1. All user files must be stored in C:\MBF\Documents\Users, in a folder with their name. It is necessary to empty the generated files weekly, since the space on the computer's hard disk is limited.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. The files must be transferred through the UMHNET network. To do this, each user folder must be shared with its corresponding UMHNET user.
3. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the microscope computer is turned on.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance.

## 14. Leica DM5000B Upright Microscope

### General considerations

1. This is an upright brightfield and fluorescence microscope, for visualizing fixed samples, with filters for DAPI, GFP and Cy3. It has dry 2.5x, 5x, 10x, 20x and 40x objectives, as well as 63x oil. It has no camera.
2. It is located in room 021 on the ground floor within the IN Imaging Facility.
3. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.

4. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

1. The microscope must be booked through the intranet in slots of one hour.
2. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
3. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
4. In the microscope room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.
5. Before starting the working session, each user should check (in the logbook) that the lamp has not recently been turned off by the previous user. For the preservation of the fluorescence lamp, the minimum time that must elapse between turning it off and the next turning on is 30 minutes.
6. The user of the last slot of the day is responsible for shutting down the system, if there is no other booking in the next slot.

### Instructions for turning on the equipment

1. Turn on the microscope at the switch on the Leica CTR 5000 box on the table.
2. Turn on the fluorescence lamp if you need it.

### At the end of the session

1. At the end of the work session, the equipment must be in a perfect state of use and cleanliness. Any anomaly will be noted in the equipment logbook and immediately notified to the Facility staff.
2. The 63x objective is the only one that is oil immersive, the rest are dry, and therefore should not be used under any circumstances with oil. To clean the oil from the objectives please use lens paper.

### Shutdown instructions

1. Turn off the microscope on the Leica CTR 5000 box.
2. Turn off the fluorescence lamp if no one is booked in the next hour.

### 15. Leica MZFLIII Fluorescence Stereoscope

#### General considerations

1. It is a brightfield and fluorescence stereoscope for samples visualization, with filters for DAPI, GFP and Cy3. It has no camera.
2. It is located on the ground floor, in room 0 21, inside the IN Imaging Facility.
3. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility staff.
4. The Imaging Facility has guidelines for users and technical staff to support all users.

#### Rules

1. The stereoscope must be booked through the intranet in slots of one hour.
2. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
3. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
4. In the room there is a logbook where it is mandatory to write down the name of the user, extension, the objectives used, arrival time and time of use of the equipment. All incidents found must be noted and communicated by e-mail to [microscopia@umh.es](mailto:microscopia@umh.es), to facilitate the early detection of possible anomalies.
5. Before starting the working session, each user should check (in the logbook) that the lamp has not recently been turned off by the previous user. For the preservation of the fluorescence lamp, the minimum time that must elapse between turning it off and the next turning on is 30 minutes.
6. The user of the last slot of the day is responsible for shutting down the system, if there is no other booking in the next slot.

#### Instructions for turning on the equipment

1. Turn on the light source Leica CLS150 X located on the table.
2. Turn on the fluorescence lamp if it is to be used.

#### At the end of the session

1. At the end of the work session, the equipment must be in a perfect state of use and cleanliness. Any anomaly will be noted in the equipment logbook and immediately notified to the Facility staff.

#### Shutdown instructions

1. Turn off the Leica CLS150 X light source on the table.
2. Turn off the fluorescence lamp if no one is booked in the next hour.

### 16. Imaris I Workstation

#### General considerations

1. Imaris I workstation for image processing, analysis and quantification with the following characteristics: 64GB RAM Z440 HP Workstation, Xeon processor E5-1680 v3 at 3.2GHz, 8GB graphics card Nvidia Quadro M4000, 1TB SSD and 2TB SATA hard drive.
2. It has different softwares: Imaris from Bitplane, AutoQuant X3, Huygens Professional, ImageJ/Fiji, OlympusFV10-ASW Viewer, Leica LAS X Core, Zeiss ZEN Blue 3.3 Lite and LaVisionBiotec Terrastitcher ImspectorPro.
3. It is located in room 018 on the ground floor within the IN Imaging Facility.
4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.
5. The Imaging Facility has guidelines for users and technical staff to support all users.

#### Rules

1. Imaris I workstation will be used by remote desktop, not in person. Those users interested in using this equipment should contact the Imaging Facility through the email [microscopia@umh.es](mailto:microscopia@umh.es).
2. **The slot work will be of two hours**, which must be booked through the intranet: <http://in.umh-csic.es/> > Intranet> Reserve Rooms> **SI\_Estación Imaris I**, in accordance with the following standards:
  3. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).
  4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
  5. Within restricted hours, each laboratory will have a booking limit of 10 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).
  6. Each group may not book more than two consecutive slots within the restricted hours.
  7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
  8. Outside of restricted hours, there is no restriction on booking, although it must always be registered on the intranet.
  9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
  10. The equipment will always be kept on for remote use, unless the Facility staff indicate otherwise.
  11. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

## Instructions for the beginning of the session

To receive the session start instructions, please contact the Imaging Facility's staff through the email [microscopia@umh.es](mailto:microscopia@umh.es).

### File transfer

1. User images have to be saved in drive H:\Users\.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the computer is turned on.
3. You can directly access NAS server from Imaris I workstation.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance. It is necessary to note that some processes require 10 times the file size of free space to be able to execute the processing.

## 17. Imaris II Station

### General considerations

1. Imaris II workstation for image processing, analysis and quantification with the following characteristics: 256GB RAM Z4 G4 HP Workstation, Intel Xeon W2145 processor (3.7GHz, 8 Cores, 11MB cache), 16GB Nvidia Quadro graphics card, 1TB SSD PCIe drive and 4TB SATA hard disk. It has an additional 1TB PCIe SSD processing disk with Linux operating system.
2. Different programs are available: Imaris and Imaris Stitcher from Bitplane, ImageJ/Fiji, Olympus FV10-ASW Viewer, Leica LAS X Core and Zeiss ZEN 3.3 Lite. The Linux disk has both ClearMap and HRM Huygens software.
3. It is located in room 018 on the ground floor within the IN Imaging Facility.
4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.
5. The Imaging Facility has guidelines for users and technical staff to support all users.

### Rules

1. Imaris II workstation will be used by remote desktop, not in person. Those users interested in using this equipment should contact the Imaging Facility through the email [microscopia@umh.es](mailto:microscopia@umh.es).
2. **The slot work will be of two hours**, which must be booked through the intranet: <http://in.umh-csic.es/> > Intranet> Reserve Rooms> **SI Estación Imaris II**, in accordance with the following standards:
3. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).

4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.
5. Within restricted hours, each laboratory will have a booking limit of 10 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).
6. Each group may not book more than two consecutive slots within the restricted hours.
7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.
8. Outside of restricted hours, there is no restriction on booking, although it must always be registered on the intranet.
9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.
10. The equipment will always be kept on for remote use, unless the Facility's staff indicate otherwise.
11. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above.

## Instructions for the beginning of the session

To receive the session start instructions, please contact the Imaging Facility's staff through the email [microscopia@umh.es](mailto:microscopia@umh.es).

### File transfer

1. User images have to be saved in drive D:\Users\.
2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx> >Files> Imaging Facility Guidelines. File transfer can be performed while the computer is turned on.
3. You can directly access NAS server from Imaris II workstation.
4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance. It is necessary to note that some processes require 10 times the file size of free space to be able to execute the processing.

## 18. Workstation

### General considerations

1. The workstation is a computer for image processing, analysis and quantification with the following characteristics: 16GB RAM Dell Precision T7400 workstation, 2 Intel Xeon X5260 processors at 3.3 GHz, 3072MB AMD Raedon HD 7900 graphics card, 250GB SSD disk and 1TB SATA hard disk.

2. It has different software: ImageJ/Fiji, Olympus FV10-ASW Viewer, Leica LAS X Core, Neurolucida Explorer and Zeiss ZEN Blue 3.3 Lite.

3. It is located in room 018 on the ground floor within the IN Imaging Facility.

4. Any conflict in its use, as well as any anomaly detected in the equipment, must be communicated directly to the Facility's staff.

### Rules

1. The Workstation will be used by remote desktop, not in person. Those users interested in using this equipment should contact the Imaging Facility through the email [microscopia@umh.es](mailto:microscopia@umh.es).

2. **The slot work will be of two hours**, which must be booked through the intranet: <http://in.umh-csic.es/> > Intranet > Reserve Rooms > **SI\_Estación de Trabajo**, in accordance with the following standards:

3. The restricted use hours are from 8am to 8pm, from Monday to Friday (a total of 30 slots during restricted hours).

4. Users can book up to two weeks in advance, according to a continuous booking system. For example, reservations for Monday can be made from two previous weeks at 10am.

5. Within restricted hours, each laboratory will have a booking limit of 10 slots per week. The control of these slots is done by the website booking system (<http://in.umh-csic.es/>).

6. Each group may not book more than two consecutive slots within the restricted hours.

7. Cancellations of slots less than one hour in advance, or bookings of slots that have already begun, must be done by sending an email to [in.microscopia@listas.umh.es](mailto:in.microscopia@listas.umh.es). In the latter case the limits per group described in the previous section do not apply. For cancellations with more advance please use the IN booking room application.

8. Outside of restricted hours, there is no restriction on booking, although it must always be registered on the intranet.

9. In any case, the booking of an unused slot is lost 30 minutes after its beginning.

10. The equipment will always be kept on for remote use, unless the Facility's staff indicate otherwise.

11. The Imaging Facility will be responsible for ensuring that the booking of the slots is adapted to the rules specified above

### Instructions for the beginning of the session

To receive the session start instructions, please contact the Imaging Facility's staff through the email [microscopia@umh.es](mailto:microscopia@umh.es).

### File transfer

1. User images have to be saved in drive D:\Users\.

2. The use of hard drives or USB memory sticks is strictly prohibited in all equipment of the Facility. To transfer the files from your computers, please consult the information contained in the intranet <http://in.umh-csic.es/intranet2009/login.aspx>

>Files> Imaging Facility Guidelines. File transfer can be done while the computer is turned on.

3. You can directly access NAS server from the Workstation.

4. Users must save their files and delete them from the computer as soon as possible. User files that remain on the hard drive for more than a week can be eliminated by the Imaging Facility's staff for the proper equipment performance. It is necessary to note that some processes require 10 times the file size of free space to be able to execute the processing.

## 19. Network Access s Storage Server (NAS)

### General considerations

The 64bit RS2818RP+ -CPU Intel Atom C3538 NAS server, with 2.1GHz quad cores, 4GB DDR4 UDIMM RAM, is composed of 8TB WD Red Pro NAS WD101KFBX SATA 28 hard drives, with a total capacity of 224TB and 1Gbit. data transfer speed.

### Rules

1. The server storage is temporary and only for large files acquired with super-resolution, spinning disk. Thunder, AxioScan.Z1 or light sheet microscopes, which require processing with Imaging Facility scientific software.

2. The final storage of the data will be the responsibility of each laboratory.

3. The maximum storage limit per research group is 6TB.

4. Files will be deleted every 6 months automatically.

5. Each user must make a formal request to use the server through the email [microscopia@umh.es](mailto:microscopia@umh.es) in order to receive the password and ID to access the server.

6. Files cannot be processed directly from the server. The data must be previously copied to the processing workstations and removed from them once their analysis is completed.

7. The Imaging Facility will be responsible for managing the server and that its use is adapted to the standards specified above.