BioImaging Facility Reopening

The facility has reopened. Below are post COVID rules.

Post COVID 19 Rules

- Reserving equipment at [http://bookit.hunter.cuny.edu](http://bookit.hunter.cuny.edu) prior to use is **mandatory**
- There is a 15 min buffer between bookings for any instrument
- Only one person at a time can use any instrument
- Masks must be used in the facility at all times
- Keep a 6ft distance from others while in the facility
- All users must complete the Hunter COVID screening checklist. [http://hunter.cuny.edu/covidscreening](http://hunter.cuny.edu/covidscreening) prior to coming to the facility
- Users must wipe down the equipment with an ethanol cleaning solution after each use. Ethanol spray bottle and paper towels are available in the facility

Several instruments are too close to be booked at the same time
The machines listed below should not be reserved at the same time. To check bookings use the resource calendar on the booking website

- Imaris 8.41 Imaging Station and the Imaris 9.12 Imaging Station
- Seahorse, Odyssey and BioTek PowerWave Microplate Reader
- GloMax®-96 Microplate Luminometer, Typhoon 9410 and Autoquant Deconvolution Station

When using the systems listed below please use the curtains that separate the instruments

- Nikon Eclipse Ti Mosaic System
- Nikon Eclipse TE 200 Calcium Ratio
- Leica TCS Confocal
- Perkin Elmer Spinning Disk Confocal
Description of the Facility
Background Overview
The BioImaging Facility at Hunter College is centered in a multi-room facility of 1024 sq. ft. located in the Biological Sciences Department on the 8th Floor of Hunter North building. A satellite facility also includes a number of instruments on the 4th Floor of the Belfer Research building (at 69th Street and York Ave). Faculty and students have access to a broad spectrum of instruments, ranging from simple white light wide-field microscopes to fluorescent multidimensional super-resolution and confocal imaging systems. The Faculty supervisor and Scientific Director is Dr. Diana P. Bratu. Dr. Lloyd Williams is the Managing Director of the facility. The facility staff has expertise in many areas of microscopy including the laser scanning confocal microscopy, super-resolution microscopy, two-photon microscopy. They are also familiar with many image analysis software packages, including, Imaris, Volocity, Autoquant, MetaMorph, and NIS-Elements. Detailed descriptions of the equipment in the facility is given below. All equipment is located at Rm 826 HN or at the 4th floor of the Belfer Research Building.

To book time on any of the instruments go to http://bookit.hunter.cuny.edu

Instruments

[Image of the facility's equipment]
Nikon Eclipse Ti, TIRF/SIM

The Nikon TIRF SIM microscope allows the users to do both Total Internal Reflection Microscopy and SIM super-resolution microscopy. The acquisition software is Nikon NIS-Elements. This machine is in 826HN.

The charge for this instrument is $20/hr.

Belfer Nikon A1 Confocal Microscope

The Nikon A1 Confocal microscope is Nikon's powerful fully-automated confocal imaging system, capable of capturing images with higher resolution and enhanced sensitivity. The acquisition software is NIS-Elements. The system is located at Belfer Research Building.

The charge for this instrument is $20/hr.

Nikon Eclipse Ti Mosaic System

The Nikon Eclipse Ti scope is a wide-field fluorescent microscope. It is equipped with Andor iXon EMCCD camera and a DG5...an Andor Mosaic/MicroPoint system for Optogenetics, Opto physiology, photobleaching/activation and uncaging applications.

This machine is in 826HN.

The charge for this instrument is $15/hr.
Perkin Elmer UltraView ERS

The UltraView is a spinning disk confocal microscope equipped with five laser lines, which allow visualization of GFP, RFP, and other fluorescent proteins. It is suitable for high-speed, multiple-probe, time-lapse experiments; NIS-Elements software is used for image acquisition and analysis.

This machine is in 830HN

The charge for this machine is $20/hr.

Leica Confocal TCS SP8 DLS

The Leica TCS SP8 DLS is a dual function fluorescence microscope that can be used as a conventional laser scanning confocal microscope (LSCM) or as a lightsheet fluorescence microscope (LSFM). It offers high-resolution imaging and allows for the study of live samples, including in vivo imaging.

This machine is in 830HN

The charge for this instrument is $20/hr.

Leica Confocal Microscope TCS SP2

The TCS SP2 Laser Scanning Spectral Confocal Microscope can do measurements of transmitted light, fluorescence, and laser scanning fluorescence imaging. It is equipped with a spectral detection system, which enables the acquisition of high-quality spectral images.

This machine is in 826HN

The charge for this instrument is $20/hr.
Nikon Eclipse TE 200 Calcium Ratio & Micro Injection

The calcium ratio imaging system consists of: a Nikon Eclipse TE 200 inverted epifluorescence microscope, Sutter Lambda DCM-250 fluorescence module, and a Hamamatsu C4742-95 digital camera. The system also is equipped with a Narishige micromanipulator system.

This machine is in 826HN.

The charge for this instrument is $10/hr.

Belfer Nikon Ti-S Fluorescence Microscope

The Nikon Ti-S microscope has a SOLA Light Engine solid state light source and a Nikon DigiSight digital camera. It has filter sets for DAPI, FITC, and RFP.

The charge for this instrument is $5/hr.

JEOL JEM-100C/CX Transmission Electron Microscope

JEOL JEM-100CX II transmission electron microscope is an advanced high-performance electron microscope with a 10M-pixel HAMAMATSU C4742-95 digital camera for high-resolution image acquisition. It has a stable and powerful scientific digital camera system.
The Nikon Color Imaging system consists of a Nikon Eclipse E400 upright microscope, and Nikon DXM 1200F high-resolution digital camera. The system also utilizes Nikon Imaging Software. The charge for this instrument is $5/hr.

The Imaris Imaging station is a high-power workstation with Bitplane's Imaris Imaging software installed. Imaris provides functionality for the visualization, segmentation, and interpretation of 3D and 4D microscopy datasets. The charge for this instrument is $10/hr.

The Imaris 9.12 Imaging Station is a high-power workstation with Nikon's NIS-Elements Imaging software installed. NIS-Elements provides cutting-edge tools for image manipulation and data management. It also has Imaris 9.12 installed. The charge for these instruments is $5/hr for Elements and $10 per hour for Imaris.
Autoquant Deconvolution Station
This Imaging workstation has both AutoQuant and Nikon’s NIS-Elements Imaging software installed. AutoQuant is used to deconvolve images acquired in the facility. This machine also has a floating license of Imaris 9.6. The charge for this instrument is $5/hr for Elements and $10 for Imaris and AutoQuant.

Belfer NIS-Elements Analysis with Deconvolution
This Imaging workstation has Nikon’s NIS-Elements Imaging software installed. Additionally, it has Element’s deconvolution module installed. The charge for this instrument is $5/hr for Elements.

Gemini EM Microplate Spectrofluorometer
The Molecular Devices SpectraMax Gemini EM Microplate Spectrofluorometer features top and bottom reading optics, dual excitation and emission wavelength scanning, well scanning, auto PMT gain and is driven by Softmax Pro software on a Windows-based controller. The charge for this instrument is $5/scan.
Amersham Biosciences Typhoon 9410
Typhoon is a highly sensitive variable-mode gel imager. The Typhoon 9410 unites the ability to detect multiple labels with high sensitivity. It can be used for autoradiography technology and direct imaging of chemiluminescence. The typhoon can also be used to analyze microarrays. The charge for this instrument is $5/scan.

Belfer GE FLA 7000 Typhoon FLA
Typhoon FLA 7000 is a fast laser scanner for biomolecular imaging applications including sensitive and quantitative measurements of radioisotopic labels, chemifluorescent Western blots, and single fluorescence.

Odyssey Infrared Imager
The Odyssey replaces traditional methods of analyzing western blots, chemiluminescence, and fluorescence. It is equipped with two infrared channels 700 nm and 800 nm, and can thus probe two different targets in the same experiment. The charge for this instrument is $5/scan.
Biotek PowerWave Microplate Reader

PowerWave HT is a multi-channel reader for maximum speed in both 96- and 384-well plate formats. The PowerWave HT supports kinetic and spectral scanning mode. Powerful Gen5 PC-based software is used for system control and data analysis. The charge for this instrument is $3/scan.

Belfer Bio Tek Synergy HTX Microplate Reader

Synergy HTX is a Multi-Mode Microplate Reader for making: absorbance, fluorescence, luminescence, AlphaScreen/AlphaLISA measurements on 6- to 384-well microplates. This instrument is in room BB 453. The charge for this instrument is $3/scan.

GloMax®-96 Microplate Luminometer

The GloMax®-96 Microplate Luminometer is a state-of-the-art Microplate Luminometer for making: absorbance, fluorescence, luminescence, and bioluminescent assays, eliminating the need to dilute samples or manage detector-driven gain changes. The charge for this instrument is $5/scan.
The max specimen size is 55 X 70 mm and can cool samples down to -50°C.

**Objectives of Microscopes in the Bio-imaging Facility**

- **Nikon A1R Resonant Confocal (Room Belfer BB 479)**
  - 1.6x/0.05, 5x/0.15, 10x/0.3, 25x/0.95
- **Leica SP8**
  - 473 nm
  - 635 nm
  - 561 nm
  - 640 nm

**Remote Instrumentation**

- **Imaris Analysis Workstation**: Volocity Analysis Workstation
- **Elements Analysis Workstation**: Gemini Spectrophotometer, Typhoon 9410 Imager
- **Gemini EM**
- **Microplate**
- **Transporter Assays Phosphatases/Kinases Microbial Growth**
- **Protein Quantitation**
- **Cell Viability**, Colorimetric assays
- **Spectrum**

**Fee Schedule**

- **4 - 10 hours**: $10/hour
- **10 - 24 hours**: $5/hour

**Guidelines for using the Facility**

- **Remote Instrumentation**
  - For scheduling the above remote instrumentation service, please check the following guidelines:
  - (i) Utilize WebEx to setup remote desktop sharing for microscope control.
  - (ii) PVX video conferencing for real-time consultation: during imaging experiment, PVX microscope system has fast scanning speed, it is ideal for cellular dynamic studies.
  - Please approach for this remote instrumentation task is to combine the powers of WebEx and PVX: systems through the Internet (also called remote instrumentation): remote users can get the access to the microscope and related instruments through the Internet.

**Equipment Costs**

- **Cryostat**: $5 per hour
- **Spinco Ultracentrifuge (Model 74.20)**: $3 per scan
- **PerkinElmer Spinning Disk Microscope**: $10 per hour

**Rules of Operations**

- **A.** The facility is open for use by members of the CTBR, other CUNY departments, and outside parties with the prior arrangement of the staff of the Bio-Imaging facility.
- **B.** Your use of the facility will be recorded. For the optical microscopes and the Gel and Blot analysis package, the charge for use of this microscope is $15 per hour. There is a $15 minimum charge, and fractions of an hour count as whole hours.
- **C.** The facility is available for use 7 X 24. After normal working hours (9-5 Mon-Fri) lock the door when you leave, and access using a key obtained from the facility manager, or by experienced users in the various CTBR laboratories. For the three special rate policy described as follows: in any 24 hour period
  - 0-4 hours: $10 per hour
  - 5-10 hours: $15 per hour
  - 10+ hours: $20 per hour

**Remote Sessions**

- You must log in to use the equipment using the following methods:
  - (i) Utilize WebEx to setup remote desktop sharing for microscope control.
  - (ii) PVX video conferencing for real-time consultation: during imaging experiment, PVX microscope system has fast scanning speed, it is ideal for cellular dynamic studies.
- A confirmation email will be sent before the experiment date. A WebEx meeting link will be sent before the experiment date. A WebEx meeting link will be sent before the experiment date.

**Sign the Logbook**

- Users may have no more than 2 reservations made on a calendar at one time for any single machine.
- Turn off all microscope lamps after use. It is particularly important to turn off the mercury lamps and the condenser illuminator's lamp.