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 where designated.

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

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 high-resolution images with exceptional sensitivity 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 shutter. The microscope is equipped with an Andor Mosaic/MicroPoint system for Optogenetics, Optopharmacology, photobleaching/activation and uncaging applications.

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, YFP, and more. It is ideal for high-speed, multiple-probe, time-lapse experiments; NIS-Elements software is used for image acquisition and analysis.

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).

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.

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 fluorescence microscope, and a Nikon Eclipse 90i microscope. The system is equipped with a Narishige micromanipulator system.

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 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
The JEOL JEM-100C/CX II transmission electron microscope is an advanced high-performance electron microscope for imaging and analysis of biological samples.

A 10M-pixel HAMAMATSU C4742-95 digital camera is integrated into the system for high-resolution image acquisition.
The Nikon Color Imaging system consists of a Nikon Eclipse E400 upright microscope, and Nikon DXM 1200F high-resolution digital camera. This system utilizes Nikon Imaging Software. The system also has Adobe Photoshop installed for image acquisition and manipulation. The charge for this instrument is $5/hr.

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

Imaris 9.12 Imaging Station

This Imaging workstation 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/hr for Imaris and AutoQuant.

Belfer NIS-Elements Analysis with Deconvolution
This Imaging workstation has Nikon's NIS-Elements Imaging software installed. Additionally, it has Elements' deconvolution module installed. This machine also has a floating license of Imaris 9.6. The charge for this instrument is $5/hr for Elements and $10/hr for Imaris.

Gemini EM Microplate Spectrofluorometer
The Molecular Devices SpectraMax Gemini EM Microplate Spectrofluorometer features top and bottom reading optics, dual bandpass filters, dual monochromators, dual excitation and dual emission monochromators, dual diode array detectors, dual PMT detectors, 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 a wide range of blot diameters with multiple imaging modalities. It combines the sensitivity of 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
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.

The charge for this instrument is $5/scan.

Odyssey Infrared Imager
The Odyssey replaces traditional methods of analyzing western blots, chemiluminescence, and fluorescence by utilizing dual infrared channels. 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 absorbance, fluorescence, luminescence, and AlphaScreen/AlphaLISA. 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, and AlphaScreen/AlphaLISA measurements on 6- to 384-well microplates.

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 with a high sensitivity and broad detection range. It is suitable 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.

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**Remote Instrumentation**

For scheduling the above remote instrumentation service, please check the following:

(iii) Microscope remote control: Webex is used to setup the remote desktop sharing for microscope control. Please check the following link for WebEx-based remote control operations:

(ii) Utilize PVX monitoring system to setup Internet video conferencing for remote systems through the Internet (also called remote instrumentation): remote users can get the approach for this remote instrumentation task is to combine the powers of WebEx and PVX: control of the microscope for their experiment through a simple Internet connection. Our system has fast scanning speed, it is ideal for cellular dynamic studies. Please,

- PVX package and the microscopic image analysis package. There is a $5 minimum charge, and fractions of an hour count as whole hours.

4 - 10 hours $10/hour

For long time duration experiment, we have a special rate policy described as follows: in any 24 hour period

- 10 - 20 hours $15/hour

and fractions of an hour count as whole hours. Please sign the log book.

**4. Microscopy System**

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. The facility is available for use 7 X 24. After normal working hours (9-5 Mon-Fri) lock the facility manager, or by experienced users in the various CTBR laboratories. For the three
cellular dynamic studies. Please,

- In-cell Western Assay
- Quantitative Western
- Nucleic Acid Quantitation
- Protein Quantitation
- RNA quantitation
- ELISAs and Immunoassays
- Image
- Absorbance
- 200-999nm
- Endpoint/Kinetics
- Multiwell plates

**Solid State Laser**

- 488 nm
- 640 nm
- 20x/0.45
- 60x/1.4/oil

**HeNe Laser**

- 650 nm
- Solid State Laser

**Melles Griot Solid State Laser**

- 458, 476, 488, 514 nm

**Leica SP2 Confocal**

- Room 826 HN
- 405 nm
- 488 nm
- 561 nm

**Nikon Eclipse Ti Mosaic/MicroPoint System & FRAP**

- Room 826 HN
- 40x/1.0/oil
- 20x/0.75
- 10x/0.45

**Typhoon 9410 Imager**

- GE FLA 7000 Typhoon (Room Belfer BB)

**Imaris Analysis Workstation**

- Volocity Analysis Workstation:

**PowerWave HT Plate Reader**

- N/A

**LI-COR Odyssey**

- 96 & 384-well plate

**In-cell Western Assay**

- 300-650nm

**Quantitative Phosphorimaging ECL Plus Westerns**

- Multiwell plates
- Fluorometric/Enzymatic

**Multifluorescence applications (such as 2-D DIGE and ECL Plex)**

- 500-685nm
- Fluorescence
- Western blot sample

**Sample Type**

- Specialized
- In-cell Western Assay
- Quantitative Western
- ELISAs and Immunoassays
- In-cell Western Assay
- Protein Quantitation
- RNA quantitation
- ELISAs and Immunoassays
- Image
- Absorbance
- 200-999nm
- Endpoint/Kinetics
- Multiwell plates

**Read Mode**

- Fluorometric/Enzymatic
- Fluorometric/Enzymatic
- Digital

**Detection**

- Fluorometric/Enzymatic
- Fluorometric/Enzymatic
- Digital

**Wavelength**

- 405 nm
- 561 nm
- 640 nm

**Ship the sample slide or living samples with proper package.**

- M. Clean oil off the microscope objective lenses after use.
- J. Report mercury lamps in service for more than 300 hours
- I. Turn off all microscope lamps after use. It is particularly important to turn off the mercury
- E. When using the Cryostat, confocals, and the Nikon SIM/TIRF you must be trained by the facility managers. Once you
- G. Do not wear latex gloves in the facility
- C. The facility is available for use 7 X 24. After normal working hours (9-5 Mon-Fri) lock the
- 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
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