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

Instruments
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.

The Nikon A1 Confocal microscope is Nikon's powerful fully-automated confocal imaging system, capable of capturing images in three dimensions 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.

The Nikon Eclipse Ti Mosaic System is a wide-field fluorescent microscope. It is equipped with Andor iXon EMCCD camera and a DG5 shutter. The system supports Andor Mosaic/MicroPoint system for Optogenetics, Opto physiology, 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, BFP, and Oregon Green. 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). This machine is in 809HN.

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.

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 10-29 laser scanning micro injection system, MetaMorph imaging software with Calcium & FRET plug-in. The system also 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 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. It is equipped with a 10M-pixel HAMAMATSU C4742-95 digital camera for high-resolution image acquisition.

The charge for this instrument is $100/hr.
Nikon Eclipse E 400  Color Image Analysis System

The Nikon Color Imaging system consists of a Nikon Eclipse E400 upright microscope, and Nikon DXM 1200F high-resolution color camera. The entire 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.

Imaris 8.41 Imaging Station

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.

Imaris 9.12 Imaging Station

This Imaging workstation is a high-power workstation with Nikon's NIS-Elements Imaging software installed. 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. 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.

Gemini EM Microplate Spectrofluorometer
The Molecular Devices SpectraMax Gemini EM Microplate Spectrofluorometer features top and bottom reading optics, dual excitation, dual emission, dual 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 and image a variety of substrates. It supports direct imaging of chemiluminescence and autoradiography technology. 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. The charge for this instrument is $5/scan.

Odyssey Infrared Imager
The Odyssey replaces traditional methods of analyzing western blots, chemiluminescence, and fluorescence by introducing infrared imaging technology. It is equipped with two infrared channels at 700 nm and 800 nm, allowing for the simultaneous detection of 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 can perform both 96- and 384-well 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 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.

The charge for this instrument is $5/scan.
The Bio-Imaging Facility - Biology is open for use by members of the CTBR, other CUNY departments, and the general public. The facility is available for use 7 X 24. After normal working hours (9-5 Mon-Fri) lock the equipment as instructed. Any issues with the equipment should be reported to the facility manager, or by experienced users in the various CTBR laboratories. For the three primary microscopes, the Nikon A1R Resonant Confocal (Room Belfer BB 479), PerkinElmer Spinning Disk Microscope (Room Belfer BB 479), and Leica CM 3050S Cryostat (Room Belfer BB 479), the charge for use is $20 per hour. For use of the Nikon Inverted Microscopes (all other Nikon Upright & Inverted Microscopes), the charge is $10 per hour. For use of the SYAG laser, the charge is $5 per hour. For use of the 3D CARS Microscopy (Leica SP2), the charge is $15 per scan. For use of the Typhoon 9410 Imager, the charge is $10 per hour. For use of the LI-COR Odyssey, the charge is $5 per scan. For use of the PerkinElmer LifeModule, the charge is $5 per scan. For use of the PerkinElmer Multi-Mode System (San Juan), the charge is $5 per scan. For use of the Leica SP2 operational guide, the charge is $5 per scan. For use of the PerkinElmer LifeModule, the charge is $5 per scan. For use of the PerkinElmer Multi-Mode System (San Juan), the charge is $5 per scan. For use of the Leica SP2 operational guide, the charge is $5 per scan.

In order to use the Bio-Imaging Facility, you must log in to use the equipment using your own Gene Center account.

For additional information, please contact the facility director Lloyd Williams at wll@genectr.hunter.cuny.edu or Dr. Ricardo Franco at x4462.

The Bio-Imaging Facility - Biology is a part of the CUNY Research Centers in Minority Institutions Program (RCMI) grant from the National Institute on Minority Health and Health Disparities (MD007599) of the National Institutes of Health. Publications using data taken in this facility must acknowledge the RCMI program and the National Institutes of Health.

**Remote Instrumentation Service**

The Bio-Imaging Facility - Biology now offers remote instrumentation service for users who are unable to come to the facility. This service is available to the CUNY campus and external institutions.

- **PVX video conferencing for real-time consultation:** During imaging experiments, PVX and remote users can connect to solve on-site experimental issues. Please check the following link for PVX operations: [PVX Operational Guide](#).
- **Webex remote control:** Webex is used to set up the remote desktop sharing for remote control of the microscope. It is also equipped with an environment chamber for live cell imaging. Also, this type of operational guide is available.
- **Utilize PVX monitoring system to set up Internet video conferencing for remote communication purpose.**
- **Remote instrumentation service:** This project was supported by a Research Centers in Minority Institutions Program grant from the National Institute on Minority Health and Health Disparities (MD007599) of the National Institutes of Health.

**Guidelines For Using The Facility**

- **A. The facility is open for use by members of the CTBR, other CUNY departments, and the general public.**
- **B. The facility is available for use 7 X 24. After normal working hours (9-5 Mon-Fri) lock the equipment as instructed.**
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- **D. When using the Cryostat, report mercury lamps in service for more than 300 hours.**
- **E. When using the Cryostat, do not turn mercury lamps on again until they have been off for 24 hours.**
- **F. If you encounter problems with the facility, e-mail the facility director Lloyd Williams at wll@genectr.hunter.cuny.edu.**
- **G. If you encounter problems with the facility, e-mail the facility director Lloyd Williams at wll@genectr.hunter.cuny.edu.**
- **H. Clean oil off the microscope objective lenses after use.**
- **I. Never use the microscope if the oil is cloudy.**
- **J. Report mercury lamps in service for more than 300 hours.**
- **K. Do not turn mercury lamps on again until they have been off for 24 hours.**
- **L. Do not use the microscope if the oil is cloudy.**
- **M. Clean oil off the microscope objective lenses after use.**
- **N. Never use the microscope if the oil is cloudy.**
- **O. You must log in to use the equipment using your own Gene Center account.**
- **P. Publications using data taken in this facility must acknowledge the RCMI program and the National Institutes of Health.**

**Fee Schedule**

- **Range:** 4 - 10 hours $10/hour
- **Range:** 10 - 24 hours $5/hour
- **Range:** 24 or more hours $2.50/hour

**Sample Types and Applications**

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**Fluorescent Laser:**

- **Samples Range:** 457, 488 nm
- **Type:** Argon Ion Laser
- **Power:** 60mW, 120mW
- **Application:** On-cell Western Assay, Reporter Gene Assays, Cell Viability, Colorimetric assays, etc.

**NIR Detection:**

- **Near-infrared detection 680-1000nm**
- **Type:** SYAG laser, SYAG laser, 640 nm
- **Power:** 60mW
- **Application:** Quantitative Phosphorimaging ECL Plus Westerns Multifluorescence applications (such as 2-D DIGE and ECL Plex), Quantitative Western Image, Plate/Gel/Blot, Endpoint/Kinetics, Reporter Gene Assays, Colorimetric assays, etc.

**Multi-Detection:**

- **Type:** Nikon A1R Resonant Confocal (Room Belfer BB 479), PerkinElmer Spinning Disk Microscope (Room Belfer BB 479), Leica CM 3050S Cryostat (Room Belfer BB 479).

**Website:**

- [Bio-Imaging Facility - Biology](#)